Wang Engineering

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www.wangeng.com

Geotechnical Design Memorandum

To:	Dan Manojlowski, PE, Project Manager, AECOM
	David Liu, PE, SE, PhD, Structural Manager, TranSystems
From:	Met Seyhun, P.E., Senior Geotechnical Engineer
Date:	October 6, 2016
Subject:	Foundation Evaluations, Elysian Plaza, Quincy Monument Relocation
Project:	Jane Byrne (Circle) Interchange Reconstruction – Chicago, Illinois
Wang No.	1100-04-01

Introduction

The existing Quincy Monument (Obelisk) at Quincy Street just west of I-94 will be relocated to Greektown's Elysian Plaza at the southeast corner of Halsted and Van Buren Streets as part of the Jane Byrne (Circle) Interchange reconstruction project. Other structures such as high mast lighting and flag poles will also be provided at the plaza which will attain about 6,000 square feet of space after construction of new Wall 39. The plaza concept drawings are shown in Appendix A.

This Geotechnical Design Memorandum provides preliminary foundation recommendations for supporting the proposed relocated Quincy Monument, high mast tower, and flag poles.

MONUMENT FOUNDATION OPTIONS

Geotechnical evaluations were undertaken using geotechnical information from previously drilled Borings 2081-B-01, 39-VST-01, 39-RWB-01, and 2055-B-01, for Wall 39, Halsted and Van Buren bridges. Boring locations are shown on Exhibit 1. Geotechnical soil profile in Exhibit 2; Boring logs in Appendix B.

Drilled shafts and spread footing foundation options were considered to support the 46-foot high Quincy Monument.

Drilled Shafts

For the deep foundation option we considered one drilled shaft of about 6-foot diameter with the base established at a minimum depth of 60 feet (from about 595 feet to 535 feet elevation) with a minimum 5 feet embedment into the stiff to hard clay layer. The stiff clay at 535 feet elevation has a factored unit base resistance of 4000 psf. Shafts designed based on this capacity are estimated to have less than ½ inch total settlement.

The final shaft length will be based on the lateral loading analyses to be performed by the structural engineer. The recommended soil parameters to be used for lateral load analysis are shown in Table 1. The soil parameter values are the same as the ones developed previously for Wall 39, except the upper level values from 580.5 feet to 595.0 feet elevation have been added. A sketch of the drilled shaft option is presented on Exhibit 2.

Table 1: Recommended Soil Parameters for Laterally Loaded Drilled Shaft Analysis
(Borings 39-RWB-01, 39-VST-01, and 2055-B-01)

Layer Elevations/ Soil Description	Moist Unit Weight (pcf)	Shear Strength Properties			Estimated Lateral Soil Modulus Parameter[3], k (pci)	Estimated Soil Strain Parameter[3], ε_{50}
		Short Term		Long Term		
		Cohesion Cu (psf)	Friction Angle, φ (Degree)	Friction Angle, φ' (Degree)		
595.0[1] to 587.9 Granular Fill	120	0	30	30	50	--
587.9 to 583.0 Silty Clay Loam	115	1500	0	29	500	0.007
583.0 to 580.5 Silty Clay Loam	110	820	0	28	100	0.010
580.5 to 562.9 Clay to Silty Clay	110	560	0	28	100	0.010
562.9 to 558.9 Clay to Silty Clay	115	950	0	29	100	0.010
558.9 to 554.9 Clay to Silty Clay	110	820	0	28	100	0.010
554.9 to 544.1 Clay to Silty Clay	115	1400	0	29	500	0.007
544.1 to 538.9 Silty Clay to Silty Clay Loam	120	2500	0	30	1000	0.005
538.9 to 530.1 Silty Clay Loam to Silty Loam	125	5000	0	30	2000	0.004
530.1 to 521.8 Silty Clay to Silty Clay Loam	120	3000	0	30	1000	0.005
521.8 to 506.8 Silty Clay Loam	125	7000	0	30	2000	0.004
506.8 to 501.5 Sandy Gravel	125	0	37	37	55	--
501.5 to 490.0[2] Silty Clay Loam to Silty Loam	120	2400	0	30	1000	0.005

[1]Finished grade elevation
[2]Boring termination depth
[3]Based on L-Pile Technical Manual 2012

Spread Footings

A spread footing foundation with an allowable bearing pressure of 2000 psf, as per the original Quincy Monument foundation design was considered. Based on the schematic drawings, the 13.8 by 13.8 feet spread footing will be established at 9.5 feet below the finished grade (584 feet elevation). The monument is 25 feet behind Wall 39. We assume Wall 39 will be constructed and fully backfilled to a finished elevation of about 595 feet prior to constructing the spread footings. Due to the depth of excavation, an earth retention system will be needed to install the footings and wall. Proposed spread footing cross section is shown in Exhibit 3, and the existing Quincy foundation details are as per sheets A-1, A-14 and S-2 in Appendix C.

Based on the soils profile, the bottom of the footing at Elevation 584 feet will be installed on top of medium stiff to soft clay. The clay is normally consolidated and is susceptible to large settlements. In order to clear this option, further investigation is recommended through an additional boring with in-situ testing. The proximity of the spread footing to the proposed Wall 39 may generate an additional lateral load of 240 psf on the wall bottom (578 feet Elevation) and a maximum lateral load of 375 psf (566 feet elevation), using the UPRR/BNSF Guidelines 2004.

The benefits of drilled shafts with respect to the spread footings are as follows:

- Drilled shaft has a smaller foundation foot print and can be installed directly from the finished grade without the need for shoring,
- No lateral stresses are transferred to adjacent Wall 39,
- Bearing foundation soils for the shaft are not susceptible to settlement since they bear upon the very stiff to hard clay layer,
- Drill shaft contractor will be already mobilized in the area.

Recommended Foundation Type

Wang recommends the drilled shaft option as the preferred foundation system for the Quincy Monument.

OTHER STRUCTURES

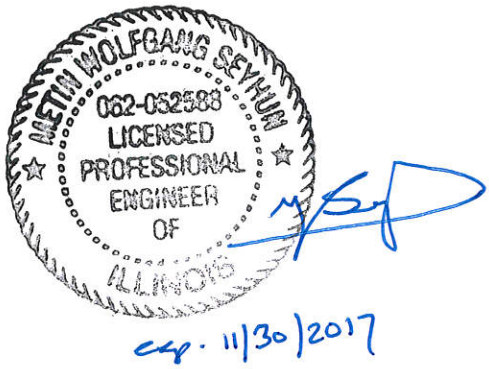
For the proposed High Mast Light Pole Tower (HMLT), we recommend estimating the minimum depth for drilled shaft in accordance with the IDOT Design Guide AGMU Memo 11.1 – Shaft Overturning and Torsion Analysis. If the minimum required shaft depth determined according to the AGMU Memo 11.1 terminates within the soft silty clay layer or above elevation 540 feet, a lateral load shaft analysis via p-y curve shall be performed using the parameters presented in Table 1 to confirm moment and displacement fixity of the shaft base.

For the proposed four flag poles, standard galvanized steel sleeve encased in concrete filled tube provided by the manufacturer may be acceptable subject to approval by the client. They should have a support plate and lightning ground spike at the bottom of the shaft. We anticipate the presence of granular fill within the top 8 feet in this area to provide sufficient foundation capacity.

CONSTRUCTION

During drilled shaft installation, casing will be necessary to prevent shaft squeeze within the soft clay layers and the collapse of intermittent water bearing layers. The required length and type of casing shall be determined by the contractor based on actual field conditions.

For the shallow foundations, the earth retention system depths may be designed using the parameters on Table 1. The design shall consider the impact of excavation on local slope stability as well as potential for bottom heaving since the soft clay is close to the bottom of the excavation.



Attachments:

Exhibit 1 – Boring Location Plan
Exhibit 2 – Soil Profile
Exhibit 3 – Spread Footing Cross Section
Appendix A – Elysian Plaza Phase II Concept Drawings
Appendix B – Boring Logs
Appendix C – Quincy Foundation Details

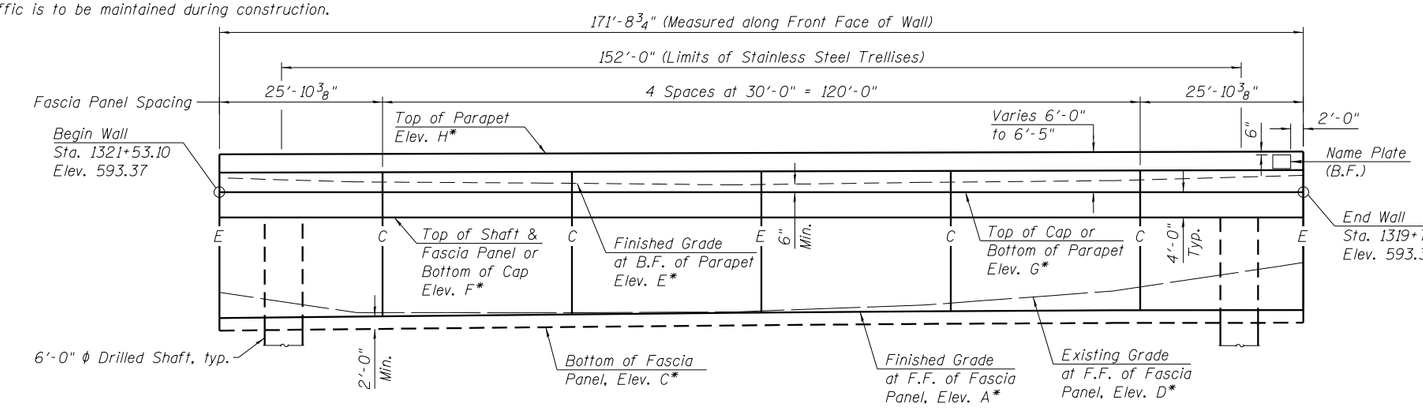
Copy To: Amish Bhatt, AECOM
Corina Farez, Wang Engineering

EXHIBITS

Bench Mark: Cut "X" at SE Corner of Van Buren and Halsted Streets. Elev. 593.24.

Existing Structure: None.

Traffic is to be maintained during construction.



* For elevations, see Table 1 on Sheet RW-02 of RW-10.

ELEVATION

(Looking Northwest at F.F. of Wall)

LEGEND:

- Ex. Chain Link Fence — X — X —
- Electric — E —
- Ex. Storm Sewer
- Prop. Storm Sewer
- Soil Boring
- Ex. Drainage

CURVE DATA

(Ramp SW)

Prop. Curve P-CIR-SW-3
P.I. Sta. = 1322+16.98
Δ = 83° 35' 08" (RT)
D = 10° 03' 07"
R = 570.00'
T = 509.51'
L = 831.54'
E = 194.53'
e = 5.40%
T.R. = NA
S.E. Run = 101'
P.C. Sta. = 1317+07.47
P.T. Sta. = 1325+39.01

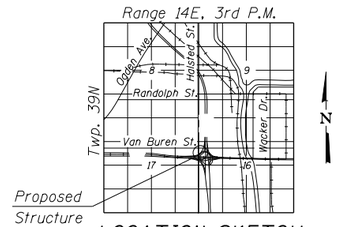
DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications 7th Edition with 2015 Interim

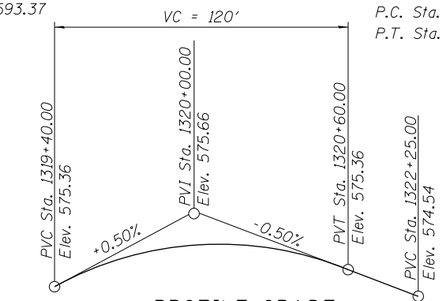
DESIGN STRESSES

FIELD UNITS

f'c = 7,000 psi (Drilled Shafts)
f'c = 3,500 psi (All other concrete)
fy = 60,000 psi (Reinforcement)



LOCATION SKETCH

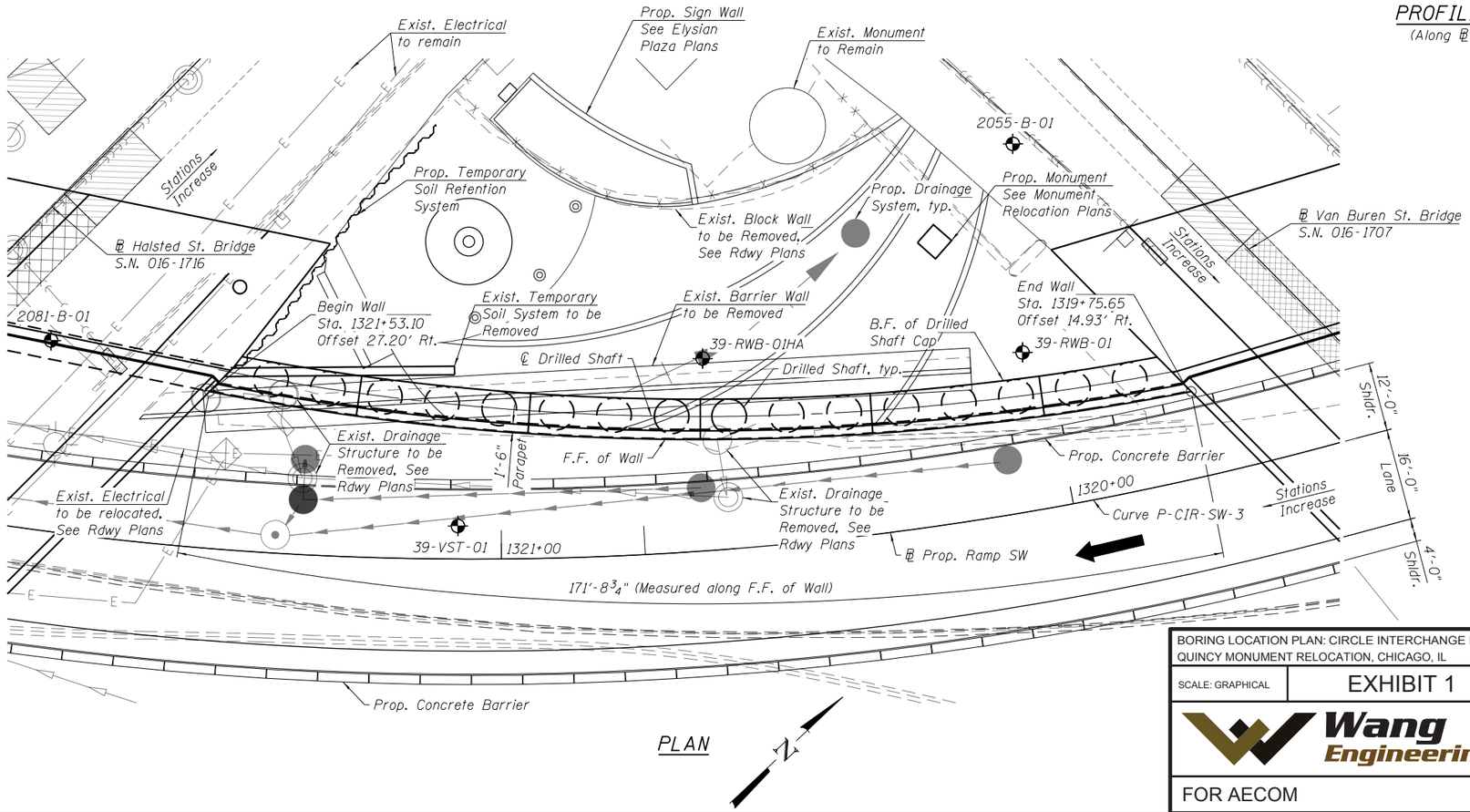


PROFILE GRADE

(Along ℄ Ramp SW)

Notes:

1. Wall offsets are measured from the ℄ of F.A.I. Rte. 90/94 (Ramp SW) to the front face of cast-in-place fascia panels.
2. C denotes Construction Joint
3. E denotes Expansion Joint
4. F.F. denotes Front Face.
5. B.F. denotes Back Face.
6. Stainless Steel Trellises to be installed on the face of the wall. For limits, see Elevation View. For details, see Typical Cross Section and SS Cable Wall Mount Unit Detail on Sheet RW-06 of RW-10.



PLAN

DAJIN LIU
081-005944
LICENSED
STRUCTURAL
ENGINEER
STATE OF ILLINOIS

DAJIN LIU, P.E., S.E.
NO. 081-005944
EXP. DATE 11/30/2016

BORING LOCATION PLAN: CIRCLE INTERCHANGE RECONSTRUCTION, QUINCY MONUMENT RELOCATION, CHICAGO, IL

SCALE: GRAPHICAL | EXHIBIT 1 | DRAWN BY: H. Bista | CHECKED BY: M. Seyhun

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FOR AECOM | 1100-04-01

GENERAL PLAN AND ELEVATION RETAINING WALL 39 ALONG RAMP SW F.A.I. RTE. 290 (EISENHOWER EXPRESSWAY) SECTION 2014-017B COOK COUNTY STATION 1319+75.65 TO STATION 1321+53.10 STRUCTURE NO. 016-1808

TranSystems

USER NAME = tlrevzin	DESIGNED - TLR	REVISED -
	CHECKED - DL	REVISED -
PLOT SCALE = 24:0 '1' / in.	DRAWN - TLR	REVISED -
PLOT DATE = 10/4/2016	CHECKED - DL/WJC	REVISED -

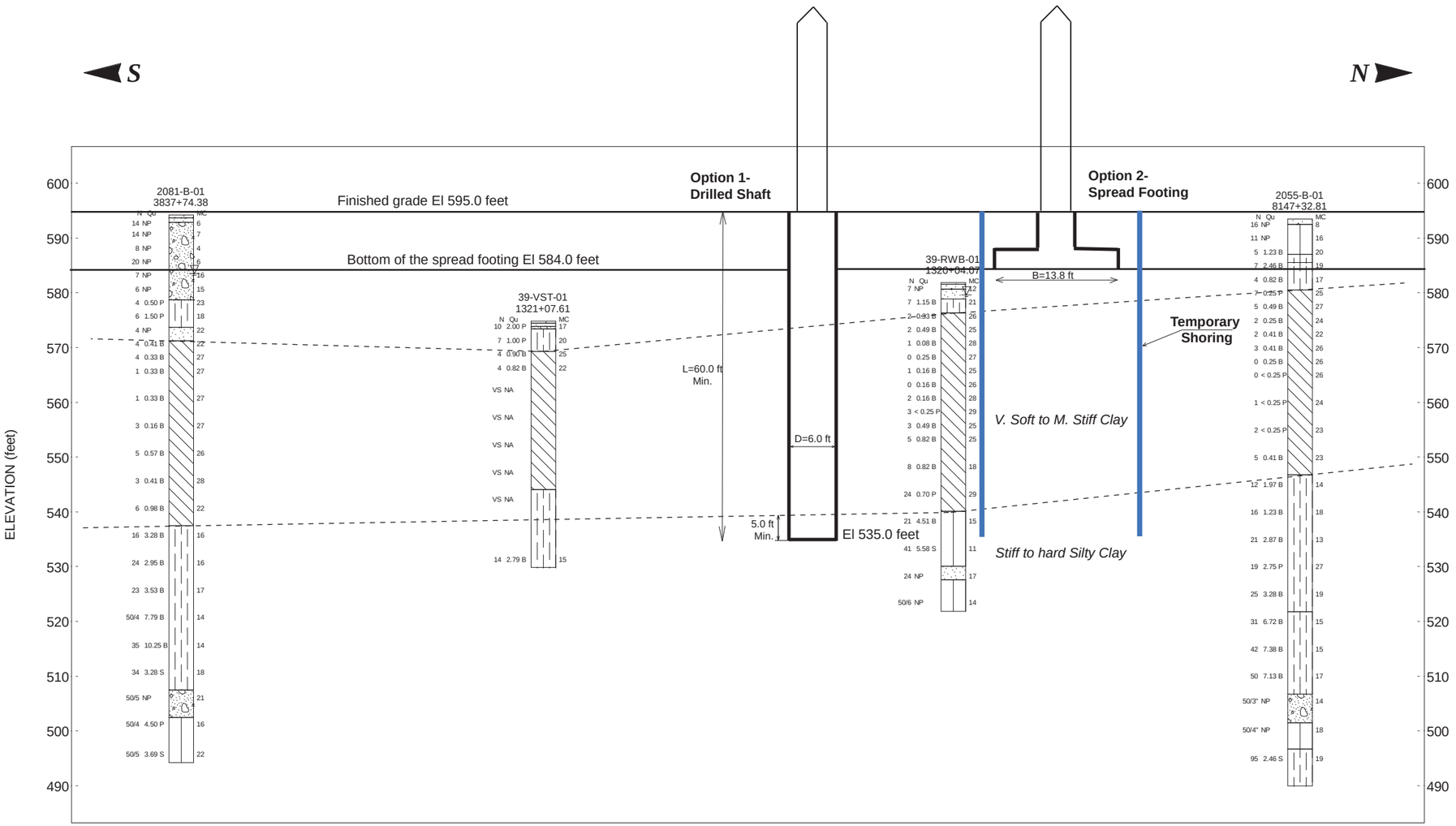
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. RW-01 OF RW-10 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-017B	COOK	445	334
		CONTRACT NO. 60X99		
	ILLINOIS FED. AID PROJECT			

251-23 PW
016-1808-60X99-S01-GPE

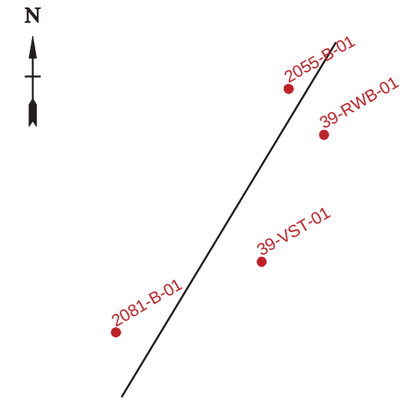
QUINCY MONUMENT



DISTANCE ALONG PROFILE (feet)

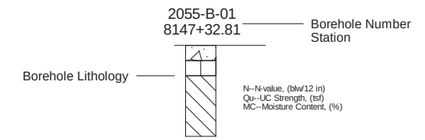
Lithology Graphics

- Concrete
- Gravelly sand, sandy gravel
- IDH Silt, Silty Loam
- Pavement
- IDH Silty Clay, Silty Clay Loam
- IDH Sand, Sandy Loam
- IDH Clay



Site Map Scale 1 inch equals 110 feet

Explanation:



- Water Level Reading at time of drilling.
- Water Level Reading 24-hr after drilling or at end of drilling

0 30

Horizontal Scale (feet)

Vertical Exaggeration: 1.5x

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Soil Profile
Quincy Monument

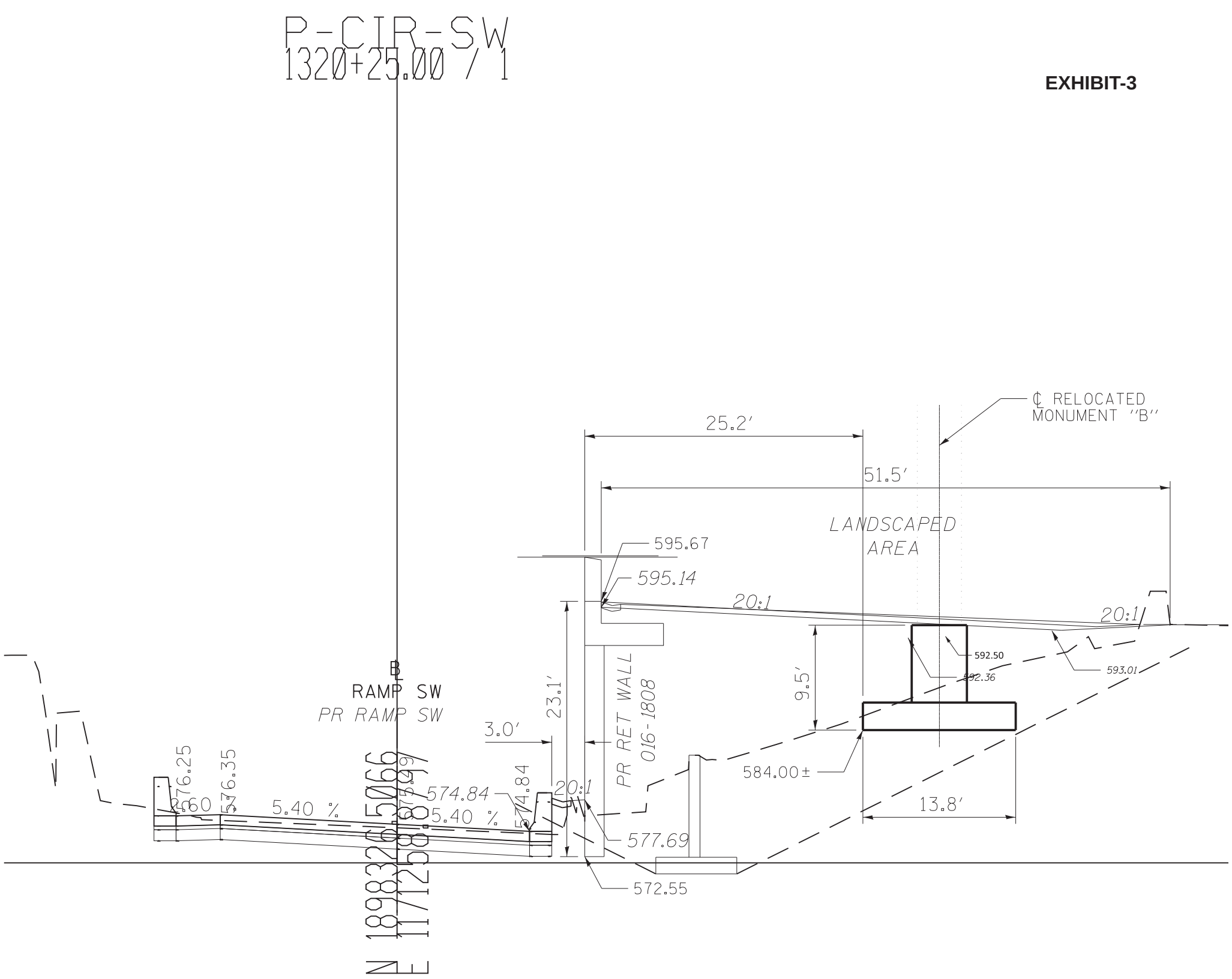
WEI SINCE 1982

Circle Interchange Reconstruction
Section 17, T39N, R14E of 3rd PM

JOB NUMBER	PLATE NUMBER
1100-04-01	EXHIBIT 2

WEI 11X17 1100401.GPJ WANGENG.GDT 9/21/16

EXHIBIT-3


P-CIR-SW
1320+25.00 7 1
℄ RELOCATED
MONUMENT ''B''
25.2'
51.5'
LANDSCAPED
AREA
595.67
595.14
20:1
20:1
592.50
592.36
593.01
9.5'
℄
RAMP SW
PR RAMP SW
3.0'
23.1'
PR RET WALL
016-1808
584.00±
13.8'
576.25
576.35
5.40 %
574.84
574.84
5.40 %
20:1
577.69
572.55
N 1898326.5066
E 1171258.8089

APPENDIX A

site design group, ltd.
urban design | landscape architecture | architecture
888 south michigan avenue | suite 1000 | chicago, illinois 60605
312.427.7240 tel 312.427.7241 fax | www.site-design.com

TABLE OF CONTENTS

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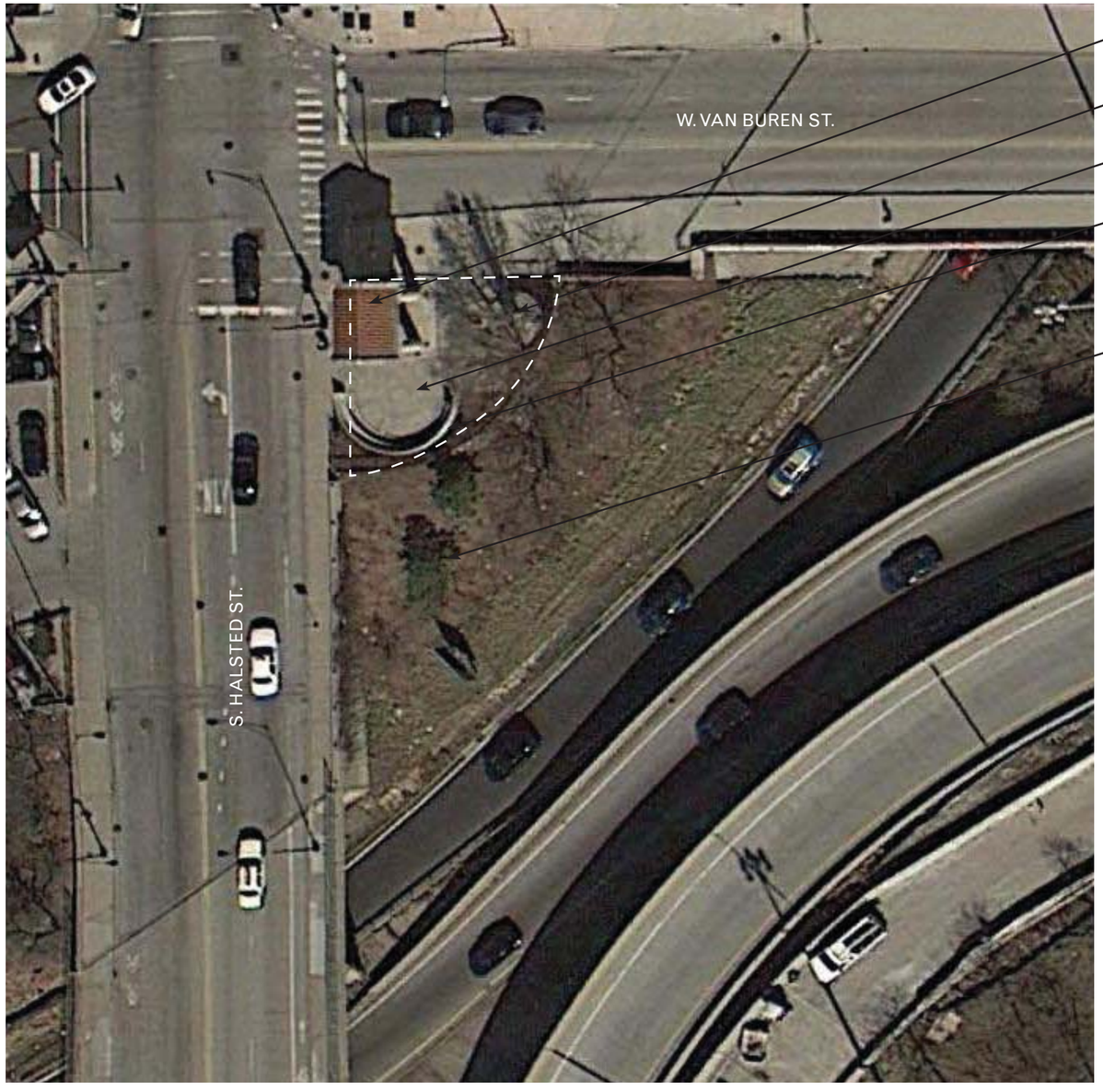
EXISTING CONDITIONS

prior to start of construction



CALCULATIONS

EXISTING PLAZA: 2,100 SQ. FT.

PROPOSED PLAZA: 8,200 SQ. FT.

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ELYSIAN PLAZA PHASE II CONCEPT

EXISTING CONCRETE SIDEWALK

EXISTING STREET LIGHT AND TRAFFIC SIGNAL

EXISTING IONIC COLUMN

EXISTING MONUMENT

LAWN

ELYSIAN PLAZA SIGN WALL

MULTI-STEM ORNAMENTAL TREES IN PLANTING

HIGH MAST LIGHT POLE

U.S., GREEK, STATE, AND CITY FLAGPOLES

GREEKTOWN WELCOME SIGN

LOW GROUNDCOVER PLANTING BED

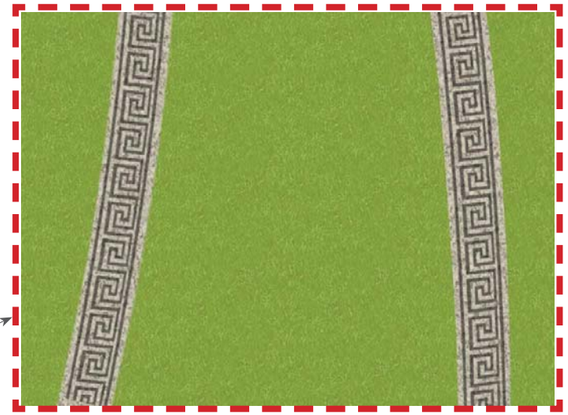
RETAINING WALL 39

NEW CONCRETE SIDEWALK

RELOCATED QUINCY COLUMN (OBELISK)

LOW GROUNDCOVER

STONE BANDS WITH GREEK KEY DESIGN - INSTALLED FLUSH WITH SOD



PLANTINGS AT RAMP SW LEVEL - IDOT

CALCULATIONS

EXISTING PLAZA: 2,100 SQ. FT.
PROPOSED PLAZA: 8,200 SQ. FT.

LEGEND

LAWN

GREEKTOWN WELCOME SIGN

LOW GROUNDCOVER BED

MULTI-STEM ORNAMENTAL TREE

1 LANDSCAPE PLAN
1" = 20'-0"

0' 10' 20'

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ELYSIAN PLAZA PHASE II CONCEPT

1 PHASE II: SOUTHEAST VIEW
1" = 30'-0"

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ELYSIAN PLAZA PHASE II CONCEPT

MATERIAL PALETTE

STONE BANDS -
INSTALLED FLUSH WITH SOD

LOW GROUNDCOVER:
Origanum vulgare 'Aureum', Golden Oregano

MULT-STEM ORNAMENTAL TREES
Amelanchier arborea, Serviceberry

ELEVATION

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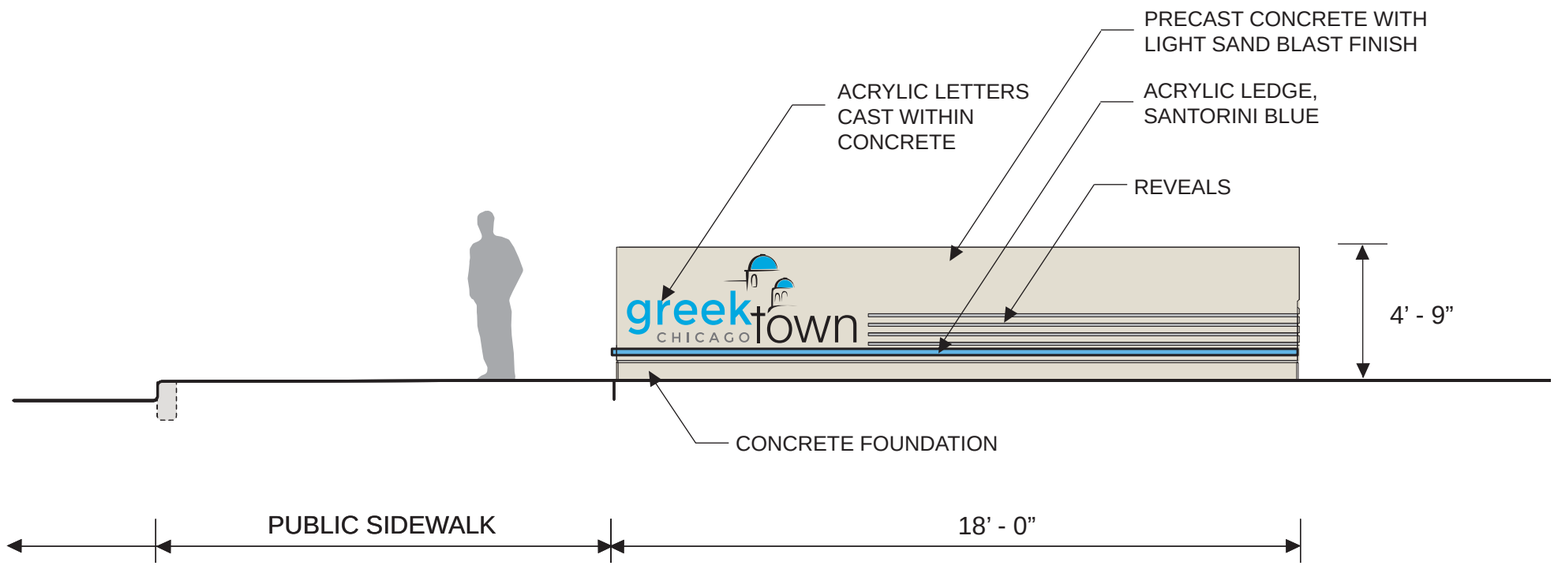
PHASE II: GREEKTOWN WELCOME SIGN CONCEPT

0 10’

1/4” = 1’ - 0”

ACRYLIC LEDGE



APPENDIX B

Wang Engineering
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1145 N. Main Street
Lombard, IL 60148
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Fax:630-953-9938

BORING LOG 2055-B-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.52 ft
North: 1898392.15 ft
East: 1171221.90 ft
Station: 8147+32.81
Offset: 7.5987 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	592.5	12-inch thick CONCRETE --PAVEMENT-- *subbase not noticed*						
		Medium dense, black and brown SILTY LOAM, trace to little gravel --FILL--			1	15 9 7	NP	8
			5		2	4 6 5	NP	16
	587.0				3	2 3 2	1.23 B	20
	585.5	Stiff, brown and gray SILTY CLAY LOAM, trace gravel, thin lenses of fine to medium sand --FILL--						
		Medium stiff to very stiff, brown to gray SILTY CLAY LOAM, trace gravel	10		4	2 4 3	2.46 B	19
					5	2 2 2	0.82 B	17
	580.5	Very soft to soft, gray CLAY TO SILTY CLAY, trace gravel						
			15		6	0 2 5	0.25 P	25
					7	0 2 3	0.49 B	27
			20		8	0 1 1	0.25 B	24
					9	0 0 2	0.41 B	22
			25		10	0 0 3	0.41 B	26
			30		11	0 0 0	0.25 B	26
					12	0 0 0	< 0.25 P	26
			35		13	0 0 1	< 0.25 P	24
			40		14	0 0 2	< 0.25 P	23
			45		15	0 2 3	0.41 B	23
	546.8	Stiff to very stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel						
		coarse sand lenses	50		16	3 5 7	1.97 B	14

GENERAL NOTES

Begin Drilling: **04-21-2013** Complete Drilling: **04-22-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR**
Driller: **R&N** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 11000401.GPJ WANGENG.GDT 9/23/16

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BORING LOG 2055-B-01

WEI Job No.: 1100-04-01

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Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.52 ft
North: 1898392.15 ft
East: 1171221.90 ft
Station: 8147+32.81
Offset: 7.5987 RT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
55				17	3 6 10	1.23 B	18
60				18	9 10 11	2.87 B	13
65				19	5 7 12	2.75 P	27
70				20	10 11 14	3.28 B	19
	521.8	Hard, gray SILTY CLAY LOAM. trace gravel					
75				21	12 13 18	6.72 B	15
80				22	12 16 26	7.38 B	15
85		*1-inch thick gravel*		23	12 17 33	7.13 B	17
	506.8	Very dense, whitish gray SANDY GRAVEL with gray clay clasts					
90				24	50/3"	NP	14
	501.5	--HARD DRILLING-- *--Possible Cobbles--* Very dense, gray SILTY LOAM to SILTY CLAY LOAM, trace gravel					
95				25	37 50/4"	NP	18
	496.8	Very stiff, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel					
100				26	37 45 50	2.46 S	19

GENERAL NOTES

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At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 11000401.GPJ WANGENG.GDT 9/23/16

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Fax:630-953-9938

BORING LOG 2055-B-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.52 ft
North: 1898392.15 ft
East: 1171221.90 ft
Station: 8147+32.81
Offset: 7.5987 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	490.0	--AUGER REFUSAL-- *--Possible Boulder--* Boring terminated at 103.50 ft	105 110 115 120 125					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

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Fax:630-953-9938

BORING LOG 2081-B-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 594.27 ft
North: 1898215.40 ft
East: 1171096.56 ft
Station: 3837+74.38
Offset: 18.2325 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	593.7	6.5-inch thick ASPHALT --PAVEMENT--						
	592.9	10.5-inch thick CONCRETE --PAVEMENT--						
		Loose to medium dense, gray, GRAVELLY SAND --FILL--			1	7 8 6	NP	6
			5		2	7 7 7	NP	7
					3	4 4 4	NP	4
			10		4	10 11 9	NP	6
					5	5 4 3	NP	16
			15		6	5 3 3	NP	15
	578.8	Medium stiff to stiff, black and gray SILTY CLAY, trace gravel			7	4 2 2	0.50 P	23
			20		8	8 4 2	1.50 P	18
	573.8	Loose, gray, medium SAND			9	2 2 2	NP	22
	571.3	Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel						
			25		10	2 2 2	0.41 B	22
			30		11	0 2 2	0.33 B	27
					12	0 0 1	0.33 B	27
			35		13	0 0 1	0.33 B	27
			40		14	0 0 3	0.16 B	27
			45		15	0 2 3	0.57 B	26
			50		16	0 0 3	0.41 B	28

GENERAL NOTES

Begin Drilling: **04-02-2013** Complete Drilling: **04-02-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR**
Driller: **R&T** Logger: **D. Wind** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 11', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **11.00 ft**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 11000401.GPJ WANGENG.GDT 9/23/16

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BORING LOG 2081-B-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 594.27 ft
North: 1898215.40 ft
East: 1171096.56 ft
Station: 3837+74.38
Offset: 18.2325 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			55		17	0 3 3	0.98 B	22
	537.5	Very stiff to hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel						
			60		18	5 6 10	3.28 B	16
			65		19	4 10 14	2.95 B	16
			70		20	5 10 13	3.53 B	17
			75		21	18 22 50/4	7.79 B	14
			80		22	12 14 21	10.25 B	14
			85		23	10 17 17	3.28 S	18
	507.5	Very dense, gray GRAVELLY SAND	90		24	45 50/5	NP	21
	502.5	Very stiff to hard, gray SILTY LOAM, trace gravel	95		25	50/4	4.50 P	16
	494.3	Boring terminated at 100.00 ft	100		26	40 37 50/5	3.69 S	22

GENERAL NOTES

Begin Drilling: **04-02-2013** Complete Drilling: **04-02-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR**
Driller: **R&T** Logger: **D. Wind** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 11', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **11.00 ft**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 11000401.GPJ WANGENG.GDT 9/23/16

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BORING LOG 39-RWB-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 581.87 ft
North: 1898358.83 ft
East: 1171247.64 ft
Station: 1320+04.07
Offset: 27.4619 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	581.6	3-inch thick, ASPHALT --PAVEMENT--						
	580.7	11-inch thick, CONCRETE --PAVEMENT--						
	578.9	Loose, gray SANDY LOAM, trace gravel and brick fragments --FILL--						
		Stiff, gray SILTY CLAY, trace gravel	5		1	2 4 3	NP	12
					2	1 3 4	1.15 B	21
	576.4	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			3	0 0 2	0.33 B	26
			10		4	0 1 1	0.49 B	25
					5	0 0 1	0.08 B	28
			15		6	0 0 0	0.25 B	27
					7	0 0 1	0.16 B	25
			20		8	0 0 0	0.16 B	26
					9	1 1 1	0.16 B	28
			25		10	1 1 2	< 0.25 P	29
			30		11	0 1 2	0.49 B	25
					12	0 2 3	0.82 B	25
			35		13	3 3 5	0.82 B	18
			40		14	4 7 17	0.70 P	29
	540.1	Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel --DRY--						
			45		15	5 8 13	4.51 B	15
			50		16	12 20 21	5.58 S	11

GENERAL NOTES

Begin Drilling: **08-07-2014** Complete Drilling: **08-07-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **2.50 ft**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG 39-RWB-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 581.87 ft
North: 1898358.83 ft
East: 1171247.64 ft
Station: 1320+04.07
Offset: 27.4619 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	530.1	Gray, fine SAND, trace gravel --DRY--						
	527.6	Very dense, gray SILTY LOAM, trace gravel --DRY--	55		17	8 11 13	NP	17
	521.9	Boring terminated at 60.00 ft	60		18	13 50/6	NP	14
			65					
			70					
			75					

GENERAL NOTES

Begin Drilling: **08-07-2014** Complete Drilling: **08-07-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: ▽ **2.50 ft**
At Completion of Drilling: ▼ **unable to measure**
Time After Drilling: **NA**
Depth to Water: ▼ **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG 39-VST-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 574.85 ft
North: 1898266.68 ft
East: 1171202.33 ft
Station: 1321+07.61
Offset: 5.7540' RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	574.5	4.5-inch thick ASPHALT --PAVEMENT--						
	573.9							
	573.4	7.5-inch thick CONCRETE --PAVEMENT--						
		5-inch thick, brown SANDY GRAVEL, crushed stone --SUB-BASE--						
		Stiff to very stiff, brown to gray SILTY CLAY LOAM, trace gravel	5		1	6 6 4	2.00 P	17
	569.4	--FILL--			2	4 3 4	1.00 P	20
		Medium stiff, gray CLAY to SILTY CLAY, trace gravel			3	2 2 2	0.90 B	25
			10		4	1 2 2	0.82 B	22
		--In-Situ Vane Shear, 13.0 feet-- --$S_{u\ undis}$ = 1551.0-- --$S_{u\ remold}$ = 878.9-- --Sensitivity = 1.76--	15		1	VS		
		--In-Situ Vane Shear, 18.0 feet-- --$S_{u\ undis}$ = 827.2-- --$S_{u\ remold}$ = 517.0-- --Sensitivity = 1.60--	20		2	VS		
		--In-Situ Vane Shear, 23.0 feet-- --$S_{u\ undis}$ = 1240.8-- --$S_{u\ remold}$ = 775.5-- --Sensitivity = 1.60--	25		3	VS		
		--In-Situ Vane Shear, 28.0 feet-- --$S_{u\ undis}$ = 1654.4-- --$S_{u\ remold}$ = 1137.4-- --Sensitivity = 1.45--	30		4	VS		
	544.1	Very stiff, gray SILTY CLAY LOAM, trace gravel						
		--In-Situ Vane Shear, 33.0 feet-- --$S_{u\ undis}$ = 2533.3-- --$S_{u\ remold}$ = 1912.9-- --Sensitivity = 1.32--	35		5	VS		
			40					
	529.9	Boring terminated at 45.00 ft	45		5	3 6 8	2.79 B	15
			50					

GENERAL NOTES

Begin Drilling: **10-15-2014** Complete Drilling: **10-19-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
Driller: **R&J** Logger: **F. Bozga** Checked by: **CLM (-coord)**
Drilling Method: **2.25" IDA HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 9/23/16

APPENDIX C

GREEN STREET

HALSTED STREET

VAN BUREN STREET

GLADYS

JACKSON STREET

QUINCY

ADAMS STREET

MONROE STREET

SEE SHEETS A-2 THRU A-7 & S-4

SEE SHEETS A-10, A-11 & S-5

Gateway Pavilion

Tholos Pavilion

SEE SHEETS A-14, A-15 & S-2

SEE SHEETS A-12, A-13 & S-1

SEE SHEETS A-16, A-17 & S-3

Pillar A

Pillar B

Pillar C

EXIST. MANHOLES

CONC. DRIVEWAY

ASPHALT STRIP

1'-9" THICK CONC. WALL 1'-9" HIGH

OFF RAMP

JOHN FITZGERALD KENNEDY EXPRESSWAY

Halsted Street Development Site Plan

SCALE: 1" = 50'-0"

NORTH

REVISIONS	
1	02-15-96
2	03-15-96
3	04-12-96

GREEK TOWN DEVELOPMENT

GREEK TOWN CHICAGO, ILLINOIS

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TELEPHONE (312) 332-5695
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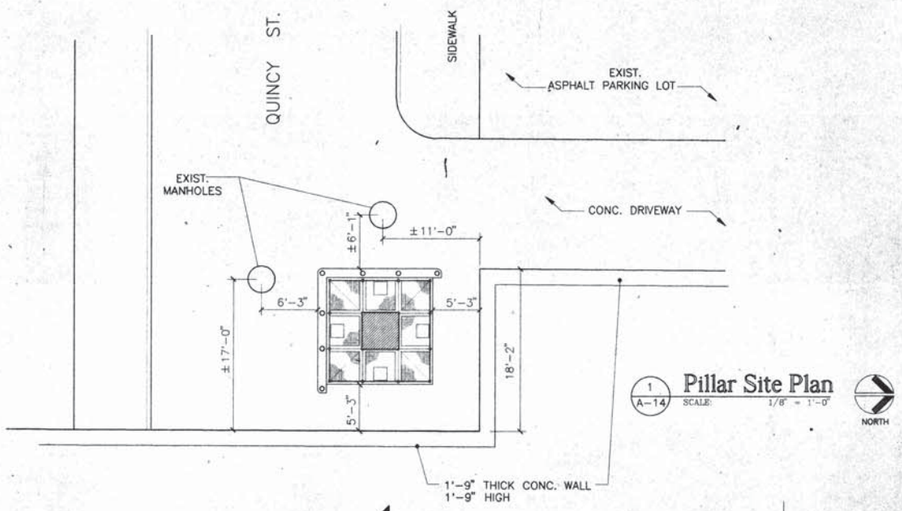
DATE: 02-05-96

SHEET NO. A-1

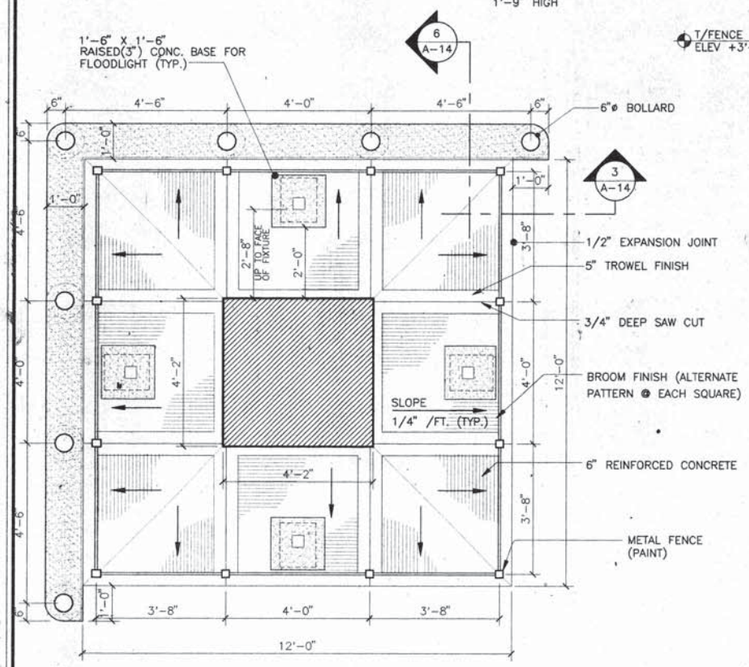
SHEET OF

JOB NO: GTD001



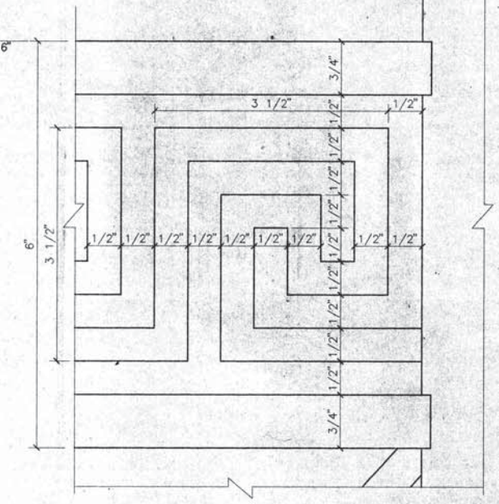
1 A-14 Pillar Site Plan
SCALE: 1/8" = 1'-0"

NORTH

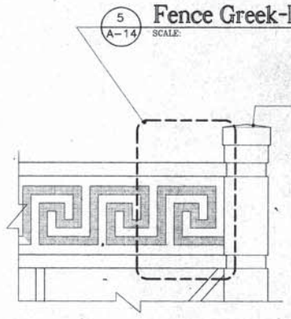


2 A-14 Pillar Base Plan
SCALE: 1/2" = 1'-0"

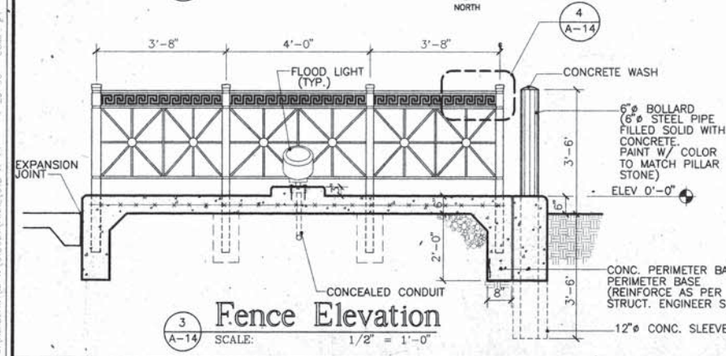
NORTH



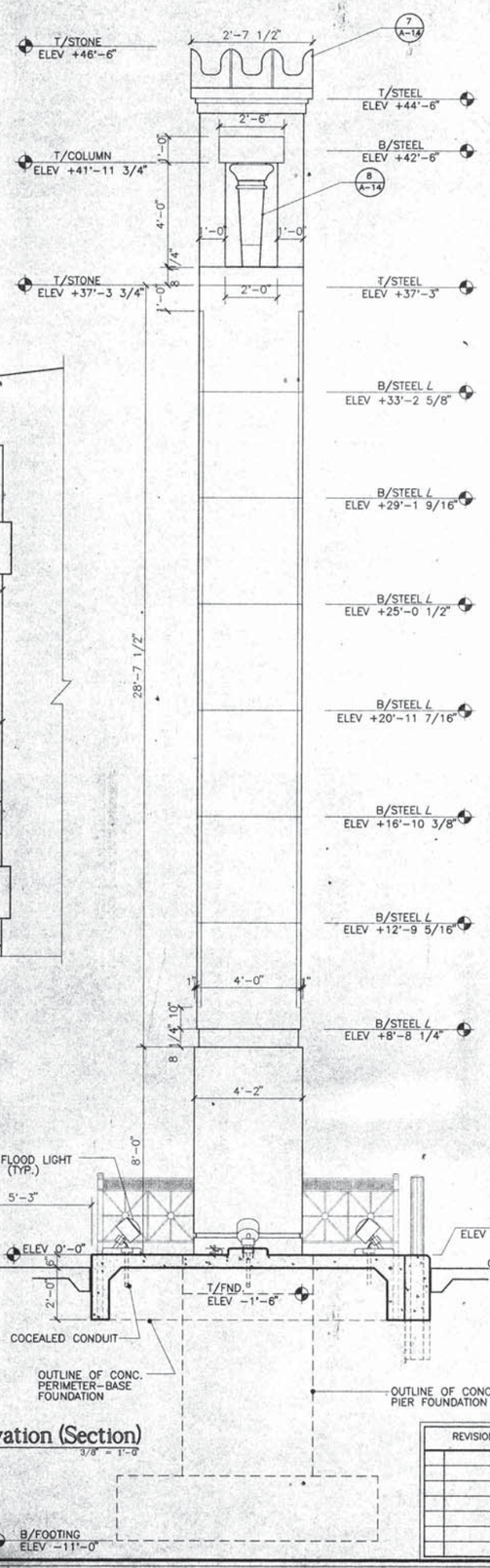
5 A-14 Fence Greek-Key Detail
SCALE: 1" = 1"



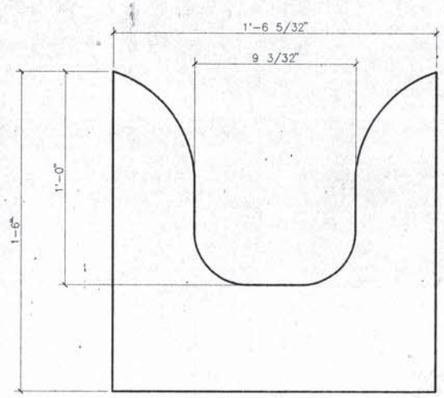
4 A-14 Fence Detail
SCALE: 3" = 1'-0"



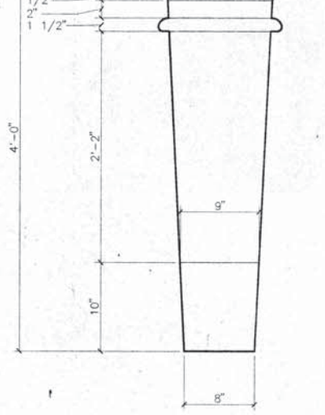
3 A-14 Fence Elevation
SCALE: 1/2" = 1'-0"



6 A-12 North Elevation (Section)
SCALE: 3/8" = 1'-0"



7 A-14 Detail of Minoan Horn
SCALE: 3" = 1'-0"



8 A-14 Minoan Column Elevation
SCALE: 1" = 1'-0"

Pillar - B

REVISIONS

GREEK TOWN DEVELOPMENT
GREEK TOWN CHICAGO, ILLINOIS

DATE: 02-05-96
SHEET NO. A-14
SHEET OF
JOB NO: GTD001

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STRUCTURAL GENERAL NOTES

GENERAL
THE STRUCTURAL DRAWINGS ARE TO BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS. REFERENCE MUST BE MADE TO ALL BID DOCUMENTS AS WELL AS THE PROJECT SPECIFICATIONS.
DISCREPANCIES SHALL BE RESOLVED BEFORE PROCEEDING WITH CONSTRUCTION.
CONTRACTOR TO COORDINATE THE WORK OF ALL TRADES AND MAKE NECESSARY INVESTIGATIONS AND FIELD MEASUREMENTS.

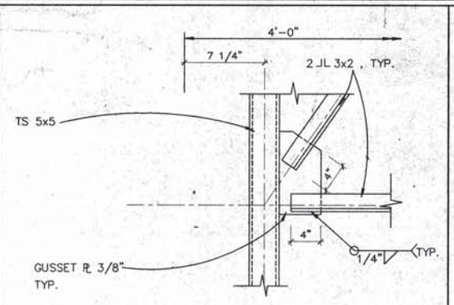
EXCAVATION
EXCAVATE AS REQUIRED FOR FOUNDING OF FOOTINGS ON UNDISTURBED SOIL OF 2000 PSF MINIMUM BEARING CAPACITY.
BACKFILL BEHIND EXTERIOR WALLS WITH COMPACTED GRANULAR FILL PLACED IN 10" LOOSE

CONCRETE
ALL REINFORCED CONCRETE WORK PER "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-89).
ALL CONCRETE 4,000 PSI ULTIMATE COMPRESSIVE STRENGTH AT 28 DAYS.
ALL WEATHER-EXPOSED CONCRETE AIR-ENTRAINED 4 TO 7 PERCENT BY VOLUME.
FOR CONCRETE PROPORTIONS, FORMING, CURING AND FINISHING, REFER TO PROJECT SPECIFICATIONS.
ALL REINFORCING STEEL (BARS) ASTM A615, GRADE 60 (Fy=60 KSI).
ALL WELDED WIRE FABRIC (MESH) ASTM A185.
ALL BAR SPLICES 36 X BAR DIAMETERS, BUT NOT LESS THAN 18 INCHES. ALL WELDED WIRE

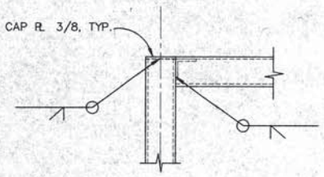
STRUCTURAL STEEL
ALL STRUCTURAL STEEL WORK TO CONFORM TO THE AISC "SPECIFICATIONS FOR THE DESIGN, FABRICATION & ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", 1989.
ALL STRUCTURAL STEEL ASTM A36 (Fy=36 KSI).
ALL STRUCTURAL STEEL TUBES ASTM A500, GRADE B.
ALL WELDING TO CONFORM TO AMERICAN WELDING SOCIETY "STRUCTURAL WELDING CODE",AWS D1.1.
ALL WELD ELECTRODES SHALL BE E70XX AND ALL WELDING TO BE PERFORMED BY CERTIFIED WELDERS.
ALL WELDS TO BE A MINIMUM 1/4" FILLET WELD, UNLESS NOTED OTHERWISE.
ALL BOLTING WITH 3/4"ø A325 HIGH STRENGTH BOLTS UNLESS NOTED OTHERWISE.

STRUCTURAL STABILITY AND CONSTRUCTION
INDIVIDUAL STRUCTURAL COMPONENTS ARE DESIGNED TO SUPPORT LOADS IN THEIR FINALLY ERECTED POSITION AS PART OF THE TOTAL COMPLETED STRUCTURE.
PROVIDE TEMPORARY GUYING AND BRACING AS REQUIRED UNTIL ALL CONSTRUCTION AFFECTING LATERAL STABILITY IS COMPLETED.
CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR STABILITY OF STRUCTURE, ITS PARTS AND JOB SITE SAFETY BY USE OF GUYING, BRACING, SHORING, BARRICADES, SAFETY RAILINGS AND DEVICES DURING ENTIRE PERIOD OF CONSTRUCTION.

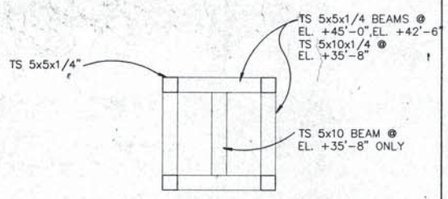
12 NOTES
SCALE: NTS



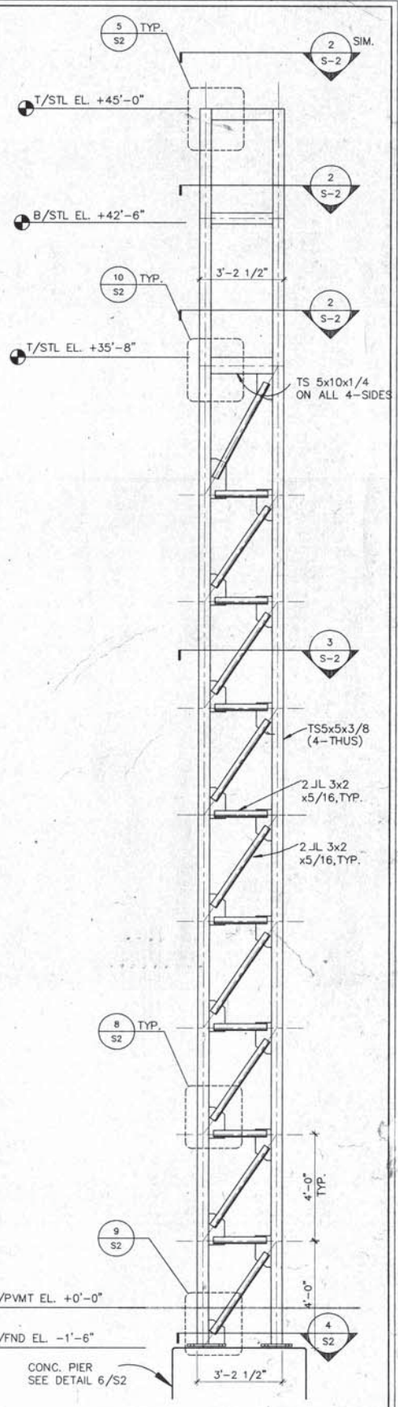
8 DETAIL
SCALE: 1"=1'-0"



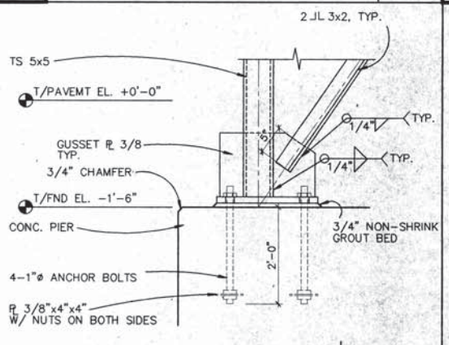
5 DETAIL
SCALE: 1/2"=1'-0"



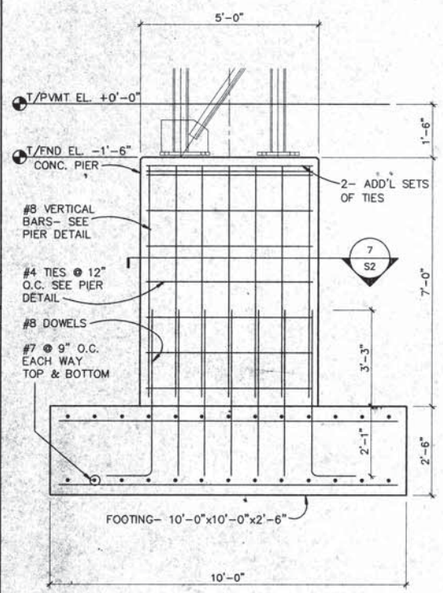
2 PLAN SECTION
SCALE: 1/2"=1'-0"



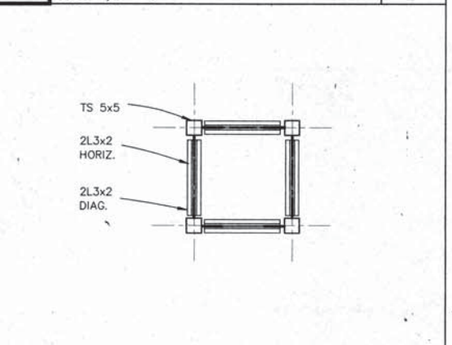
1 PILLAR 'B' ELEVATION
SCALE: 3/8"=1'-0"



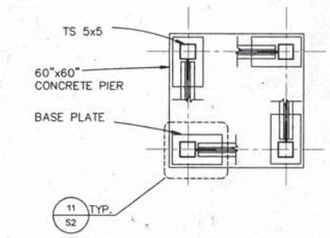
9 DETAIL
SCALE: 1"=1'-0"



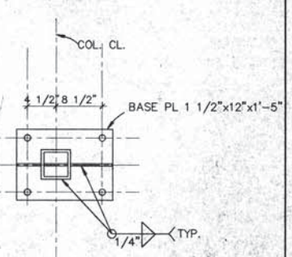
6 PIER DETAIL
SCALE: 1/2"=1'-0"



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

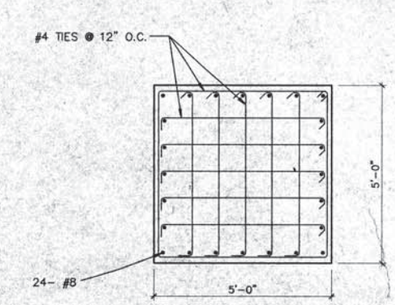


4 PLAN SECTION
SCALE: 1/2"=1'-0"



10 DETAIL
SCALE: 1"=1'-0"

11 DETAIL
SCALE: 1"=1'-0"



7 PLAN SECTION OF PIER
SCALE: 1/2"=1'-0"

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STRUCTURAL ENGINEERS
1550 N. NORTHWEST HWY. STE. 112
Phone 847.635.5115 Fax 847.635.5612

REVISIONS

GREEK TOWN DEVELOPMENT
GREEK TOWN CHICAGO, ILLINOIS

DATE: 2-5-96
SHEET NO. S2
SHEET OF
JOB NO: GTD001

CAPRI REALTY CORPORATION
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