PROJECT MANUAL

CDB #102-615-016
REPLACE SEWAGE TREATMENT PLANT
WASHINGTON COUNTY CONSERVATION AREA
NASHVILLE (WASHINGTON COUNTY), ILLINOIS

CONTRACT: GENERAL

State of Illinois

CAPITAL DEVELOPMENT BOARD
Bid Documents

USING AGENCY: ILLINOIS DEPARTMENT OF NATURAL RESOURCES

BY: HENEGHAN & ASSOCIATES, P.C.
838 E McCORD STREET
CENTRALIA, IL 62801
Professional Design Firm Registration No. 184-002692
Expires April 30, 2021

DATE: June 4, 2021

License Expiration Date: November 30, 2021

Signature:

Date Signed: June 4, 2021

LINDSEY LEE BOWLIN
062-064926
REGISTERED
PROFESSIONAL
ENGINEER
OF
STATE OF ILLINOIS

State of Illinois
CAPITAL DEVELOPMENT BOARD

HENEGHAN & ASSOCIATES, P.C.
838 E McCORD STREET
CENTRALIA, IL 62801
T: (618) 533-6525

PROJECT MANUAL FOR

CDB-102-615-016

REPLACE SEWAGE TREATMENT PLANT
WASHINGTON COUNTY CONSERVATION AREA
NASHVILLE, WASHINGTON COUNTY, ILLINOIS

DATE: June 4, 2021

SPECIFIER: General: Lindsey Bowlin
Heneghan & Associates, P.C.
838 E McCord Street
Centralia, IL 62801
T: (618) 533-6525
F: (618) 533-6652
llbowlin@heneghanassoc.com

END 00 01 10.

General
G-01 Title Sheet and Location Plans
G-02 Legend and Notes

Demolition
D-03 Demolition Plan

Civil
C-04 Site Plan
C-05 Staging Area Plan
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Electrical
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All Drawings dated: June 4, 2021

END 00 01 15

The State of Illinois, Capital Development Board (CDB) will receive sealed bids for:

CDB PROJECT #:	102-615-016
TITLE:	REPLACE SEWAGE TREATMENT PLANT
LOCATION:	WASHINGTON COUNTY CONSERVATION AREA NASHVILLE, ILLINOIS
USING AGENCY:	ILLINOIS DEPARTMENT OF NATURAL RESOURCES
COUNTY:	WASHINGTON

PROJECT DESCRIPTION: The project consists of construction of a wastewater treatment plant, installation of low pressure seepage field and demolition of the existing wastewater treatment plant.

TRADE	COST RANGE	BID DATE/TIME
GENERAL	under $400,000	July 7, 2021 5:30 pm

SPECIAL BID INSTRUCTIONS:

Due to the COVID-19 Emergency, bids will **only** be accepted via mail or email. No In-Person submittals of bids will be allowed. Bid modifications will **only** be accepted via email. No faxed bid modifications will be allowed.

All bids will be received at the CDB Springfield Office **only**. No bids will be received at the CDB Chicago Office or CDB Carbondale Office, and any packages mailed to the CDB Chicago Office or CDB Carbondale Office **will not** be forwarded to the CDB Springfield Office and will be considered disqualified.

TO SUBMIT BIDS VIA MAIL:

Mail bids to:

ILLINOIS CAPITAL DEVELOPMENT BOARD
401 SOUTH SPRING STREET
THIRD FLOOR, WILLIAM G. STRATTON BUILDING
SPRINGFIELD, IL 62706

CDB bid envelopes can be used to mail bid documents to CDB Springfield if bidding firms have access to them. Otherwise, the CDB Project Number, the Trade, and the Bid Date should be included on the outside of the mailing envelope.

Bids can be sent via the US Post Office, UPS, or FEDEX, and should be sent **without** a signature required at delivery. Mailed bids will be considered on-time if the package is in CDB's mail received on, or before, the THURSDAY morning following the bid receipt deadline. No confirmation of delivery will be provided to the contractor by CDB.

TO SUBMIT BIDS VIA EMAIL:

Bids submitted via email will use the State of Illinois File Transfer website.

- Navigate to the following website: https://filet.illinois.gov/filet/PIMupload.asp
- Enter the bid email address in the "Recipient Email Addresses" box: CDB.CPO@illinois.gov
- Enter the Vendor's email address in the "Your Email Address" box.
    - You will receive a confirmation email to this email address.
    - Please keep this confirmation. This will serve as your proof of receipt.
- Upload your file.
    - The file size is limited to 2 GB.

    - Only 5 separate files may be uploaded.
        - You may upload a zip file if necessary.
- Enter the appropriate bid information in the "File Transfer Email Subject (Optional)" box:
    - Subject: Bid for (CDB Project Number) – (Trade) – (Bid Date)
        - Example: Subject: Bid for 805-030-020 – GENERAL – 5/6/2020
- Enter the appropriate email body information in the "Message to Recipient (Optional)" box:
    - Full company name (as prequalified with CDB)
    - Company mailing address
    - Contact name
    - Contact email and phone number
    - CDB Project Number
    - Trade
    - Bid Date
    - NO pricing information should be included.
- If you are submitting your bid more than 5 days prior to the "bid opening" date please select "Advanced Options" and select the appropriate number of days for the document to remain on the servers.
    - You have the option of 5 days, 10 days, or 15 days.
- Please check the "I acknowledge that I have read and understand this warning" box located towards the top of the form.
- Click "Send It."
- The email confirmation will provide you with a link to the downloaded file.
    - This site will show how many times the file has been downloaded.

Emailed bid modifications will be considered on-time if uploaded prior to 5:30pm on the evening of the bid receipt deadline.

BID MODIFICATIONS:

Bids modifications submitted via email will use the State of Illinois File Transfer website.

- Navigate to the following website: https://filet.illinois.gov/filet/PIMupload.asp
- Enter the bid email address in the "Recipient Email Addresses" box: CDB.CPO@illinois.gov
- Enter the Vendor's email address in the "Your Email Address" box.
    - You will receive a confirmation email to this email address.
    - Please keep this confirmation. This will serve as your proof of receipt.
- Upload your file.
    - The file size is limited to 2 GB.
    - Only 5 separate files may be uploaded.
        - You may upload a zip file if necessary.
- Enter the appropriate bid modification information in the "File Transfer Email Subject (Optional)" box:
    - Subject: Bid Modification from (Company) for (CDB Project Number) – (Trade) – (Bid Date)
        - Subject: Bid Modification for XYZ Contractors for 805-030-020 – GENERAL – 5/6/2020
- Enter the appropriate email body information in the "Message to Recipient (Optional)" box:
    - Full company name (as prequalified with CDB)
    - Company mailing address
    - Contact name
    - Contact email and phone number

  - CDB Project Number
  - Trade
  - Bid Date
  - NO pricing information should be included.
- If you are submitting your bid modification more than 5 days prior to the "bid opening" date, please select "Advanced Options" and select the appropriate number of days for the document to remain on the servers.
  - You have the option of 5 days, 10 days, or 15 days.
- Please check the "I acknowledge that I have read and understand this warning" box located towards the top of the form.
- Click "Send It."
- The email confirmation will provide you with a link to the downloaded file.
  - This site will show how many times the file has been downloaded.

Emailed bid modifications will be considered on-time if uploaded prior to 5:30pm on the evening of the bid receipt deadline.

BID OPENING:

The public bid opening will be conducted on FRIDAY, July 9, 2021 at 10:00am prevailing time via WebEx.

Contractors interested in attending the public bid opening may attend virtually by using the following meeting information:

When it's time, join your WebEx meeting here.

Meeting website: https://globalpage-prod.webex.com/join

Meeting number (access code): **133 078 7209**

Meeting password: **afMheZui738**

Join by phone

+1-312-535-8110 United States Toll (Chicago)

+1-415-655-0002 US Toll

Meeting participants will not be able to ask questions either verbally or via the meeting's chat feature.

Minority, Women, Persons with Disabilities, and Veteran Business Subcontractor/Supplier Participation is Applicable

Obtain Plans From: Heneghan & Associates, P.C.
838 E McCord Street
Centralia, IL 62801
(618) 533-6525

Refundable Plan Deposit: $80.00

Pre-Bid Meeting (*Not Mandatory*):
June 16, 2021 10:00 am
Washington County State Recreation Area
18500 Conservation Drive
Nashville, IL 62263

INFORMATION TO BIDDERS:

A. Prequalification. Bidders must be prequalified with CDB; allow 45 days for application processing. For an application and a copy of CDB's Standard Documents for Construction (applicable to this project), visit CDB's Website www.illinois.gov/cdb or phone 217/782-6152 (TDD 217/524-4449).

B. MBE/WBE/PBE/VBE. MBE/WBE/PBE/VBE firms must be certified or registered with CMS as an MBE, WBE, PBE, or VBE prior to bidding.

C. Prevailing Wage. Contractor shall not pay less than the prevailing rates of wages to all laborers, workmen, and mechanics performing work under this contract, and shall comply with the requirements of the Illinois Wages of Employees on Public Works Act (820 ILCS 130/1-12).

D. Registration with the Illinois Procurement Gateway (IPG). Vendors may pre-register with the IPG and receive a vendor registration number. The IPG is a web based system that serves as the primary location for entering, organizing, and reviewing vendor information. The IPG allows prospective vendors to provide disclosures, registrations, and other documentation needed to do business with the State in advance of any particular procurement. Registration in the Illinois Procurement Gateway is optional.

E. Certifications and Disclosures. Vendors must have an approved Illinois Procurement Gateway registration number and completed Form B, or submit the Standard Certifications and Disclosure Form(s) (Form A) with bid at time of submittal. Failure to provide a completed Form A standard certifications and financial disclosure or Form B, will result in rejection of bid.

F. Subcontractors. You are also required to submit disclosure forms and standard certifications for subcontractors not considered incidental to the performance of the contract with an annual value over $50,000 within 20 days of execution of your contract with CDB or execution of the contract between you and your subcontractor, whichever is later. A valid IPG registration number can be provided in lieu of hard copies of the standard certifications and financial disclosure forms. (See D. above.) Subcontractors must receive an Authorization to Proceed prior to performance of any work.

G. Supplement to SDC. Bidders are advised to review Article 01 11 01, Supplement to SDC, for any revisions to the Standard Documents for Construction.

H. Progress Payments. Progress payments will normally be issued by the Illinois Comptroller within 30 business days after CDB receives and approves an Invoice-Voucher.

I. Bid Protest. Bidder may submit a written protest to the Protest Review Office following the requirements of the Administrative Rules, 44 Ill. Adm. Code 8.2075. For protests related to specifications, the Protest Review Office must physically receive the protest no later than fourteen (14) days after solicitation or related addendum was posted to the Bulletin. For protest related to rejection of individual bids or awards, the protest must be received by close of business no later than fourteen (14) days after the protesting party knows or should have known of the facts giving rise to the protest. To reach the Protest Review Office:

Chief Procurement Office
Attn: Protest Review Office
401 South Spring Street
Suite 515 Stratton Office Building
Springfield, IL 62706

In order to ensure timely recognition of your protest, please email the protest to the Protest Review Office at: EEC.LegalStaff@Illinois.gov and cc: CDB.CPO@Illinois.gov

Facsimile: (217) 558-1399

CAPITAL DEVELOPMENT BOARD

Jim Underwood
Executive Director

Michael Mcguire PLA, ASLA, CLARB
Project Manager, CDB – Region 3
(217) 720-1124
Email: michael.l.mcguire@illinois.gov

1. GENERAL

1.1 SCOPE

A. Base Bid:

1. General Contractor

a. Verify data and existing conditions.
b. At Contractor's option, perform additional subsurface investigation at own expense.

1.2 RELATED WORK

A. Specified elsewhere:

1. 01 11 00 - Project Summary

B. Work by Others:

1. The following Soil Evaluations Reports are for reference only. The Using Agency and A/E do not guarantee that the soil conditions represented in this report coincide with those actually existing at the proposed site. The Contractor is free to conduct any additional subsurface investigations deemed necessary in order to design and construct a safe, adequate wastewater treatment facility.

2. REPORTS

2.1 See attached reports.

END 00 31 32.

SCI ENGINEERING, INC.
EARTH • SCIENCE • SOLUTIONS
GEOTECHNICAL
ENVIRONMENTAL
NATURAL RESOURCES
CULTURAL RESOURCES
CONSTRUCTION SERVICES

SOIL EVALUATION REPORT

CLIENT: Mr. Seth Elliott
Heneghan & Associates, P.E.
1004 State Highway 16
Jerseyville, Illinois 62052

FIELD DATE: May 28, 2019
SCI NO.: 2014-3233.39

SITE: Washington County Conservation Area Waste Water Treatment

COUNTY: Washington

LOCATION: See attached Site Plan with soil borings (B1 through B10).

DETAILED SOIL DESCRIPTION – BORING 2

Depth (in)	Color[1]	Texture[2]	% Clay Range	Mottles& Coatings[1]	Structure[2]	Consistence	Conventional Loading Rate[3] (gpd/sq.ft.)
0 – 8	10YR 4/4	sil	10 – 15	--	1 fgr	fr	0.69
8 – 12	10YR 5/6	sil	15 – 20	--	1 m sbk	fr	0.69
12 – 38	10YR 5/3	sicl	27 – 30	10YR 5/1 at 26”	1 m sbk	fr	0.52
38 – 60	10YR 5/2	sil	20 – 25	10YR 5/3	1 m gbk	fi	0.60

Seasonal high water (SHW) at 26 inches. Drainage classification is MW. Bedrock greater than 60 inches. Slope 1 to 3 percent. Landscape position is on the summit.

DETAILED SOIL DESCRIPTION - BORING 5

Depth (in)	Color[1]	Texture[2]	% Clay Range	Mottles& Coatings[1]	Structure[2]	Consistence	Conventional Loading Rate[3] (gpd/sq.ft.)
0 – 8	10YR 4/3	sil	10 – 15	--	1 fgr	fr	0.69
8 - 28	10YR 5/3	sil	15 - 20	--	1 m sbk	fr	0.69
28 – 32	10YR 5/1	sicl	27 – 30	10YR 5/4	2 m sbk	fr	0.52
32 – 60	10YR 6/2	sil	20 – 25	10YR 5/4	1 m sbk	fr	0.69

Seasonal high water (SHW) at 26 inches. Drainage classification is MW. Bedrock greater than 60 inches. Slope 0 to 1 percent. Landscape position is on the summit.

DETAILED SOIL DESCRIPTION - BORING 6

Depth (in)	Color[1]	Texture[2]	% Clay Range	Mottles& Coatings[1]	Structure[2]	Consistence	Conventional Loading Rate[3] (gpd/sq.ft.)
0 – 3	10YR 4/3	sil	10 – 15	--	1 fgr	fr	0.69
3 – 7	10YR 3/4	sil	10 – 15	--	1 m sbk	fr	0.69
7 – 12	10YR 5/2	sil	15 – 20	--	1 m sbk	fr	0.69
12 - 26	10YR 5/3	sil	15 - 20	--	1 m sbk	fr	0.69
26 – 32	10YR 5/1	sicl	27 – 30	10YR 5/4	2 m sbk	fr	0.52
32 – 40	10YR 6/2	sil	20 – 25	10YR 5/4	1 m sbk	fr	0.69
40 – 60	10YR 6/1	sil	15 – 20	10YR 5/4	1 m sbk	fr	0.69

Seasonal high water (SHW) at 26 inches. Drainage classification is MW. Bedrock greater than 60 inches. Slope 0 to 1 percent. Landscape position is on the summit.

DETAILED SOIL DESCRIPTION - BORING 9

Depth (in)	Color[1]	Texture[2]	% Clay Range	Mottles& Coatings[1]	Structure[2]	Consistence	Conventional Loading Rate[3] (gpd/sq.ft.)
0 – 6	10YR 4/3	sil	10 – 15	--	1 f gr	fr	0.69
6 – 17	10YR 5/6	sil	10 – 15	--	1 m sbk	fr	0.69
17 – 34	10YR 5/3	sicl	27 – 30	10YR 5/1 at 25”	2 m sbk	fr	0.52
34 – 39	10YR 6/1	sil	20 – 25	10YR 5/3	2 m sbk	fr	0.62
39 – 60	10YR 5/1	sil	15 - 20	10YR 5/3	2 m sbk	fi	0.62

Seasonal high water (SHW) at 25 inches. Drainage classification is MW. Bedrock greater than 60 inches. Slope 3 to 5 percent. Landscape position is on the shoulder.

SCI Engineering, Inc. does not certify, warrant, or guarantee the proper function, operation, or maintenance of any installed septic system.

SCI recommends the septic absorption trenches be installed in area of B5, B6, or B9. Although B2 is suitable, it is far away from facility. Borings B1 and B10 are unsuitable soil conditions, and borings B3, B4, B7, and B8 are limited due to site conditions.

SCI also recommends the installation of a curtain drain to a depth of 48 inches upslope of the absorption field. This soil evaluation was prepared for the sole use of the client and may not be transferred or modified without the prior written authorization of SCI Engineering, Inc.

If you have any questions or require further clarification, please contact me at (618) 206-3041.

Respectfully,

SCI ENGINEERING, INC.

Scott D. Harding, CPSS/SC
President

SDH/tlw/lf

Enclosure
Aerial Photograph with boring locations

N:\OFallon\emtapps\PROJECT FILES\!2014 PROJECTS\2014-3233 Washington County Conservation Area Waste Water Treatment Evaluation\NR\39\2014-3233.39 Washington Conservation Illinois Soil Eval .doc

SCI ENGINEERING, INC.
650 Pierce Boulevard
O'Fallon, Illinois 62269
618-624-6969
www.sciengineering.com

SOIL DESCRIPTION ABBREVIATIONS

Mottles

Abundance (%)
f = few <2
c = common 2-20
m = many >20

Texture

s = sand
ls = loamy sand
sl = sandy loam
l = loam
sil = silt loam
si = silt
sicl = silty clay loam
cl = clay loam
scl = sandy clay loam
sc = sandy clay
c = clay
vfs = fine sand
cos = coarse sand
vcs = very coarse sand

Rock Fragments
g = gravelly 15-35%
vg = very gravelly 35-60%
exg = extremely gravelly >60%

Shrink/Swell Capacity

L = low shrink/swell
M = medium shrink/swell
H = high shrink/swell

Structure

Grade
0 = structureless
1 = weak
2 = moderate
3 = strong

Type	Size (mm)	
Granular (gr)	vf = very fine	<1
	f = fine	1-2
Crumb (cr)	m = medium	2-5
	c = coarse	5-10
	vc = very coarse	>10

Angular	vf = very fine	>5
blocky (abk)	f = fine	12-20
Subangular	m = medium	20-50
blocky (sbk)	c = coarse	50-100
	vc = very coarse	>100

Prismatic (pr)	vf = very fine	<5
	f = fine	5-10
	m = medium	10-20
Columnar (cpr)	c = coarse	20-50
	vc = very coarse	>50

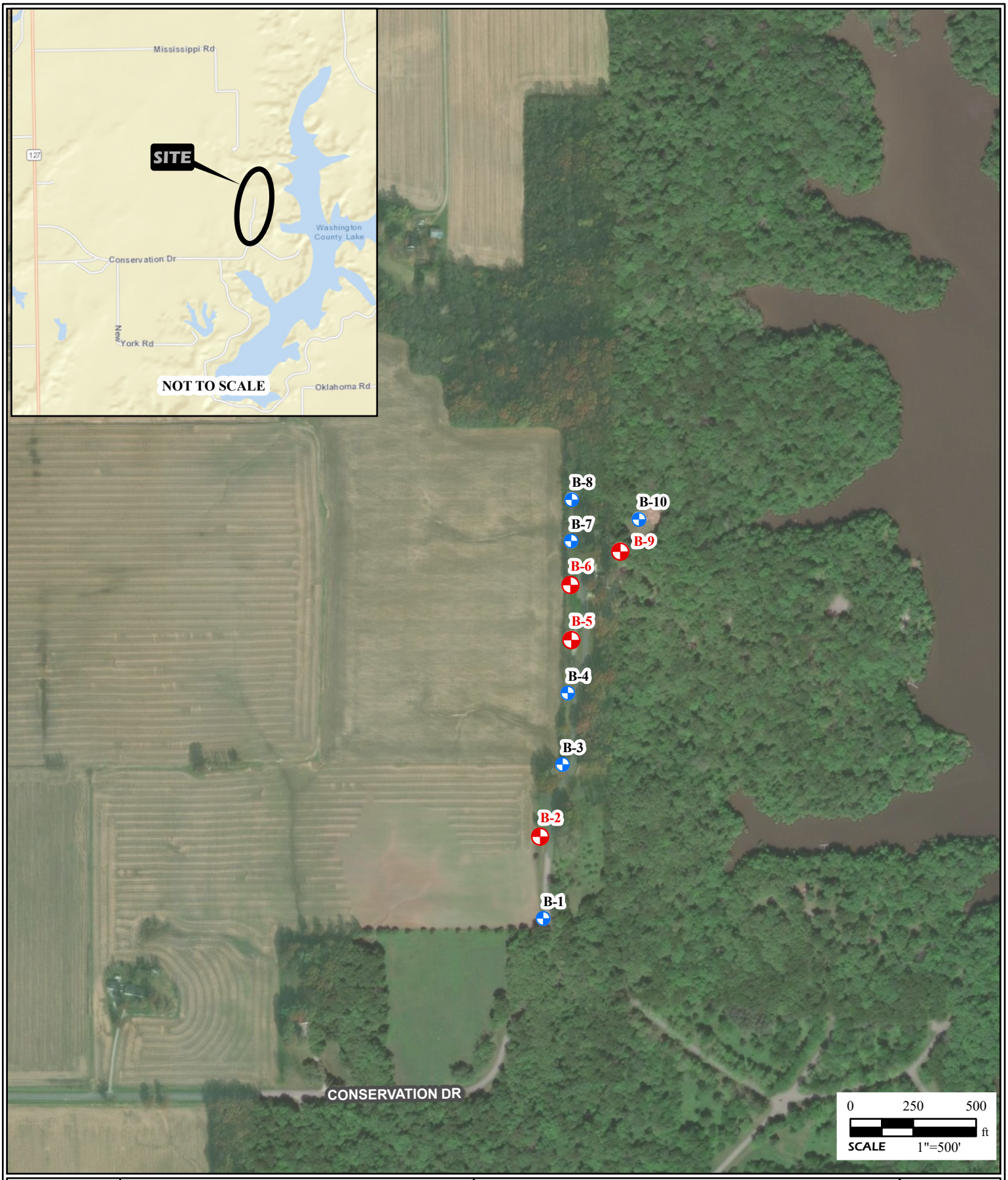
Platy (pl)	vf = very fine	<1mm
	f = fine	1-2mm
	m = medium	2-5mm
	c = coarse	5-10mm
	vc = very coarse	>10mm

Single grain (sg)		
Massive (m)		

Drainage

W = Well
MW = Moderately Well
SWP = Somewhat Poor
P = Poor

[1] Soil color designations, Munsell Soil Color Charts, (1992).
[2] Soil texture and structure designation, Soil Survey Manual, (1993).
[3] Private Sewage Disposal Licensing Act and Code, IDPH, Appendix A, Illustration M (1996).



PROJECT NAME WASHINGTON COUNTY CONSERVATION AREA WASTEWATER TREATMENT PLANT WASHINGTON COUNTY, ILLINOIS				GENERAL NOTES/LEGEND APPROXIMATE SOIL BORING LOCATIONS APPROXIMATE SOIL BORING LOCATIONS (DETAILED SOIL DESCRIPTIONS)
AERIAL PHOTOGRAPH				AERIAL PHOTOGRAPH OBTAINED FROM ARCGIS ONLINE, WORLD IMAGERY. DIMENSIONS AND LOCATIONS ARE APPROXIMATE; ACTUAL MAY VARY. DRAWING SHALL NOT BE USED OUTSIDE THE CONTEXT OF THE REPORT FOR WHICH IT WAS GENERATED.
DRAWN BY RCV	DATE	JOB NUMBER		N W E S
CHECKED BY SDH	06/2019	2014-3233.39		FIGURE 1

SCI ENGINEERING, INC.
EARTH • SCIENCE • SOLUTIONS
GEOTECHNICAL
ENVIRONMENTAL
NATURAL RESOURCES
CULTURAL RESOURCES
CONSTRUCTION SERVICES

SOIL EVALUATION REPORT

CLIENT: Mr. Seth Elliott
Heneghan & Associates, P.C.
1004 State Highway 16
Jerseyville, Illinois 62052

FIELD DATE: February 17, 2020
SCI NO.: 2014-3233.39

SITE: Washington County Conservation Area – Additional Borings

COUNTY: Washington (Nashville, IL)

LOCATION: See attached Site Plan with soil borings (Site 1 - 3).

DETAILED SOIL DESCRIPTION – Site 1

about 200 ft. north of parking lot on east side of Lake about 770 yds. N. of Conservation Dr

Depth (in)	Color[1]	Texture[2]	Mottles	Coatings[1]	Structure[2]	Consistence	Conventional Loading Rate[3] (gpd/sq.ft.)
0-6	10YR 5/2	Sil		--	Mod. Fine granular	friable	0.62
6-10	10YR 4/4	SiCl <35% clay		Few clay films	Moderate fine Subangular blocky	firm	0.52
10-17	10YR 5/4	SiCl >35% clay	few 10YR 5/8, 5/2	Few clay deplet.	Moderate fine Subangular blocky	firm	0.40
17-51	10YR 5/4	SiCl <35% clay	many 10YR 5/8, 5/2	Few clay deplet.	Moderate med. Subangular blocky	firm	0.52
51-60	10YR 5/1	SiCl <35% clay	many 10YR 5/8, 5/3	--	Moderate med. Subangular blocky	firm	0.52

Seasonal high water (SHW) at 17 inches. Drainage classification is MW. Bedrock greater than 60 inches. Slope 5 percent. Landscape position is on the upland, ridge.

DETAILED SOIL DESCRIPTION – Site 2

Depth (in)	Color[1]	Texture[2]	Mottles	Coatings[1]	Structure[2]	Consistence	Conventional Loading Rate[3] (gpd/sq.ft.)
0-8	10YR 5/2	Sil		--	Mod. Fine granular	friable	0.62
8-10	10YR 4/4	SiCl		Few clay films	Moderate fine Subangular blocky	firm	0.52
10-19	10YR 5/4	SiCl >35% clay	few 10YR 5/8, 5/2	Few clay deplet.	Moderate fine Subangular blocky	firm	0.40
19-48	10YR 5/4	SiCl <35% clay	many 10YR 5/8, 5/2	Few clay deplet.	Moderate med. Subangular blocky	firm	0.52
48-60	10YR 5/1	SiCl <35% clay	many 10YR 5/8, 5/3	--	Moderate med. Subangular blocky	firm	0.52

Seasonal high water (SHW) at 19 inches. Drainage classification is MW. Bedrock greater than 60 inches. Slope 5 percent. Landscape position is on the upland, ridge.

DETAILED SOIL DESCRIPTION – Site 3

Depth (in)	Color[1]	Texture[2]	Mottles	Coatings[1]	Structure[2]	Consistence	Conventional Loading Rate[3] (gpd/sq.ft.)
0-8	10YR 5/2	Sil		--	Mod. Fine granular	friable	0.62
8-12	10YR 4/4	SiCl <35% clay		Few clay films	Moderate fine Subangular blocky	firm	0.52
12-17	10YR 5/4	SiCl >35% clay	few 10YR 5/8, 5/2	Few clay deplet.	Moderate fine Subangular blocky	firm	0.40
17-48	10YR 5/4	SiCl <35% clay	many 10YR 5/8, 5/2	Few clay deplet.	Moderate med. Subangular blocky	firm	0.52
48-60	10YR 5/1	SiCl <35% clay	many 10YR 5/8, 5/3	--	Moderate med. Subangular blocky	firm	0.52

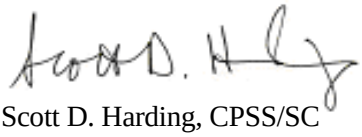
Seasonal high water (SHW) at 17 inches. Drainage classification is MW. Bedrock greater than 60 inches. Slope 5 percent. Landscape position is on the upland, ridge.

Mr. Jerry Berning, certified professional soil classifier, performed the fieldwork. SCI Engineering, Inc. does not certify, warrant, or guarantee the proper function, operation, or maintenance of any installed septic system.

If you have any questions or require further clarification, please contact me at (618) 206-3041.

Respectfully,

SCI ENGINEERING, INC.



Scott D. Harding, CPSS/SC
President

SDH/tlw

Enclosure
Aerial Photograph with boring locations

Ms. Lindsey Bowlin, Heneghan & Associates, P.C.

R:\!2014 PROJECTS\2014-3233 Washington County Conservation Area Waste Water Treatment Evaluation\NR\39\2014-3233.39 Washington Conservation Illinois Soil Eval Feb 2020.doc

PROJECT NAME
WASHINGTON COUNTY CONSERVATION AREA
WASTEWATER TREATMENT PLANT
WASHINGTON COUNTY, ILLINOIS

AERIAL PHOTOGRAPH

DRAWN BY	RCV	DATE	JOB NUMBER
CHECKED BY	SDH	02/2020	2014-3233.39

GENERAL NOTES/LEGEND

APPROXIMATE SOIL BORING LOCATIONS

AERIAL PHOTOGRAPH OBTAINED FROM ARCGIS ONLINE, WORLD IMAGERY. DIMENSIONS AND LOCATIONS ARE APPROXIMATE; ACTUAL MAY VARY. DRAWING SHALL NOT BE USED OUTSIDE THE CONTEXT OF THE REPORT FOR WHICH IT WAS GENERATED.

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FIGURE
1

SCI ENGINEERING, INC.
650 Pierce Boulevard
O'Fallon, Illinois 62269
618-624-6969
www.sciengineering.com

SOIL DESCRIPTION ABBREVIATIONS

Mottles

Abundance (%)
f = few <2
c = common 2-20
m = many >20

Texture

s = sand
ls = loamy sand
sl = sandy loam
l = loam
sil = silt loam
si = silt
sicl = silty clay loam
cl = clay loam
scl = sandy clay loam
sc = sandy clay
c = clay
vfs = fine sand
cos = coarse sand
vcs = very coarse sand

Rock Fragments
g = gravelly 15-35%
vg = very gravelly 35-60%
exg = extremely gravelly >60%

Shrink/Swell Capacity

L = low shrink/swell
M = medium shrink/swell
H = high shrink/swell

Structure

Grade
0 = structureless
1 = weak
2 = moderate
3 = strong

Type	Size (mm)	
Granular (gr)	vf = very fine	<1
	f = fine	1-2
Crumb (cr)	m = medium	2-5
	c = coarse	5-10
	vc = very coarse	>10

Angular	vf = very fine	>5
blocky (abk)	f = fine	12-20
Subangular	m = medium	20-50
blocky (sbk)	c = coarse	50-100
	vc = very coarse	>100

Prismatic (pr)	vf = very fine	<5
	f = fine	5-10
	m = medium	10-20
Columnar (cpr)	c = coarse	20-50
	vc = very coarse	>50

Platy (pl)	vf = very fine	<1mm
	f = fine	1-2mm
	m = medium	2-5mm
	c = coarse	5-10mm
	vc = very coarse	>10mm

Single grain (sg)		
Massive (m)		

Drainage

W = Well
MW = Moderately Well
SWP = Somewhat Poor
P = Poor

[1] Soil color designations, Munsell Soil Color Charts, (1992).
[2] Soil texture and structure designation, Soil Survey Manual, (1993).
[3] Private Sewage Disposal Licensing Act and Code, IDPH, Appendix A, Illustration M (1996).

RETURN WITH BID

NAME OF FIRM: _____

CDB FIRM ID NO: _____

FOR GENERAL WORK

BID FOR: CDB PROJECT NUMBER: (102-615-016)

PROJECT TITLE: REPLACE SEWAGE TREATMENT PLANT
WASHINGTON COUNTY CONSERVATION AREA

BID TO: State of Illinois, Capital Development Board

THE BIDDER ACKNOWLEDGES THE FOLLOWING ADDENDA: (Failure to acknowledge may cause bid rejection.)

NO._____, DATED _____ NO._____, DATED _____ NO_____, DATED_____

NO._____, DATED _____ NO._____, DATED _____ NO_____, DATED_____

EACH BID SHALL INCLUDE:

A. BID FORM (00 41 00)
B. SUBCONTRACTOR/SUPPLIER REQUIREMENTS (00 41 01)
C. DHR PC-2 FORM (00 41 04)
D. MBE/WBE/PBE/VBE FORM (00 41 05)
E. BID SECURITY (00 41 06)
F. PRODUCT SUBSTITUTION FORM (at Bidder's option) (00 41 07)
G. Standard Business Terms and Conditions (00 41 08)
H. Forms A CERTIFICATIONS AND DISCLOSURES **or** Forms B (00 41 09)

BASE BID: THE BIDDER AGREES TO PERFORM ALL WORK FOR THE ABOVE TRADE, EXCLUSIVE OF ALTERNATE BIDS, FOR THE SUM OF:

_____ DOLLARS ($_____)

RETURN WITH BID

Note: Any qualifying or conditional statements included on the bid form or attached to the bid form may result in rejection of the bid unless rescinded by the bidder.

☐ The bidder requests preference pursuant to the Procurement of Domestic Products Act (PA 93-0954). We certify that all offered goods were/will be manufactured in the United States. We understand that, if awarded a contract based on a preference for US manufactured goods, this certification will become part of the contract, and, if we knowingly supply non-US manufactured goods, we will be subject to penalties that include debarment for 5 years, voiding of the contract, and civil damages.

PRODUCT SUBSTITUTION FORM ATTACHED (00 41 07): ☐

Duration of Bids: The bidders shall hold their bids open for 90 calendar days after the bid opening.

By signing below, the Bidder agrees to perform all work in accordance with the terms and conditions of the bidding documents and enter into and execute a contract with CDB, if awarded, on the basis of this bid for the sum indicated herein:

BIDDER (show Company name and DBA): _____

Signature of authorized representative: _____

Printed Name: _____ FEIN #: _____

Title: _____ Date _____

Address: _____

Telephone: _____ Fax: _____ Email: _____

For Corporations only: Attest By: _____ (Corporate Secretary)

Document 00 41 01 – Subcontractor Requirements

RETURN WITH BID

Subcontractor Requirements

Pursuant to requirements of 30 ILCS 500/20-120(a), the contract shall state whether the services of a subcontractor will be used. The contract shall include names and addresses of all known subcontractors with subcontracts with an annual value of more than $50,000, the general type of work to be performed, and the expected amount of money each will receive under the contract. Financial and Conflict of Interest disclosures and standard certifications of each subcontractor not considered incidental to the performance of a contract with an annual value over $50,000 must be submitted to CDB by the contractor prior to the subcontractor performance of work.

List known subcontractors not considered incidental to the performance of a contract with an annual value over $50,000.

	Name of Subcontractor	Address	CDB Registration Number	Total Expected Value	Description / Scope of Work
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

(Use additional sheets if necessary.)

BIDDER'S EMPLOYEE UTILIZATION FORM

All bidders shall complete the DHR Form PC-2 per 00 43 38.1 of the Standard Documents For Construction (SDC) and as identified by trade category. Failure to complete may result in rejection of the bid per 00 43 38.1 of the SDC.

Workforce projections are for work performed on the project being bid. Workforce projections shall include any subcontractor'(s') workforce. The bidder, if awarded a contract, shall be responsible for ensuring the subcontractor(s) meet minority/female/veteran workforce goals.

CDB's acceptance of the Bidder's PC-2 projection is a condition of contract award. CDB will notify the bidder if the projection is unacceptable. The bidder shall be given the opportunity to negotiate an acceptable projection with the CDB. Failure to reach an acceptable workforce projection may result in rejection of the contract award.

GOALS

The following workforce hiring goals are in effect for each trade. These goals represent a minimum of **total** workforce hours.

Minority / Female Utilization

	Percent
Sheetmetal	25%
Equipment operators	20%
Elevator Mechanics	12%
Ironworkers/Boilermakers	20%
Carpenters	25%
Acoustical Tilers	20%
Ceramic Tile Setters	15%
Brick Masons/Tuckpointers	15%
Cement Masons	12%
Lathers (Metal/Wood)	20%
Tapers	20%
Plasters	12%
Painters	20%
Glaziers	15%
Roofers	25%
Metal Deck Roofers	15%
Pipefitters	25%
Plumbers	25%
Insulators	15%
Temperature Control	12%
Laborers	33%
Electricians	25%
Fencing, Guard Rails	12%
Landscaping	20%
Truck Drivers	20%
Air Test & Balancing	0%
Sandblast/Waterproofing/Caulkers	0%
Asbestos Workers	30%
Terrazzo	12%
Carpet	15%

INSTRUCTIONS

for

Project: **102-615-016** Phase: **1**

Trade: **General**

Under "Total Employees", project the total number of employees to be used in the performance of the contract work by your firm and your subcontractors. Include within the projections, separate numbers for Journeyman and Apprentices by the letters "J" and "A". (See next page)

_____
Contact Person

_____
Firm Name

_____
Address

_____
Address

_____
Telephone Number

_____
Fax Number

_____
Email Address

DHR # _____

DHR Expiration Date: _____

RETURN WITH BID

BIDDING & CONTRACT REQUIREMENTS
Document 00 41 04-Bid Form-DHR Form PC-2

CDB Project Number
102-615-016

CDB Contract No.	
Contractor I.D.	

Contract/Trade Bid: **General** | FEP Tech: **Samantha Kluemke** | Monitored/Non-Monitored: **Monitored**

TRADE CATEGORIES	Trade Codes	African American				Hispanic				Native American				Asian				Caucasian				Veteran			
		Male		Female		Male		Female		Male		Female		Male		Female		Male		Female		Male		Female	
		J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A
Sheet Metal	3																								
Equipment Operators	4																								
Elevator Mechanics	5																								
Ironworker/BoilerMakers	6																								
Carpenters	7																								
Acoustical Tilers	8																								
Ceramic Tilesetters	9																								
Brick Mason/Tuckpointers	10																								
Cement Masons	11																								
Lather - Metal/Wood	12																								
Tapers	13																								
Plasterers	14																								
Painters	15																								
Glaziers	16																								
Roofers	17																								
Metal Deck Roofers	18																								
Pipefitter/Sprinkler Fitters	19																								
Plumbers	20																								
Insulators	21																								
Temperature Control	22																								
Laborers	23																								
Electricians	24																								
Fencing/Guard Rails	25																								
Landscaping	26																								
Well Drilling	27																								
Truck Drivers	28																								
Air Test & Balancing	29																								
SndBlst/Wtrprfng.Caulkers	30																								
Asbestos Workers	31																								
Terrazzo	32																								
Carpet	33																								
TOTALS																									

NOTE: **Bidder's failure to complete DHR Form PC-2 may result in rejection of the bid. Bidder shall set forth a total projection of the total workforce to be allocated for this contract. Approval of the workforce hiring projection is a post-award requirement.**

Document 00 41 05 – Minority/Women/Persons with Disabilities/Veterans Business Enterprise Program Requirements

RETURN WITH BID

Name of Bidder: _____ **CDB PROJECT NO.** 102-615-016

GENERAL CONTRACT REQUIREMENTS FOR MINORITY/WOMEN/PERSONS WITH DISABILITIES/VETERANS BUSINESS PARTICIPATION

A. Goals for participation by minority-owned businesses (MBE), women-owned businesses (WBE), and businesses owned by persons with disabilities (PBE) as first and second tier (level) subcontractors or suppliers, and as the prime contractor, are set in accord with the Business Enterprise for Minorities, Women, and Persons with Disabilities Act (30 ILCS 575)**.**

Goals for participation by veteran-owned businesses (VBE) as first and second tier (level) subcontractors or suppliers, and as the prime contractor, are set in accord with the Illinois Procurement Code (30 ILCS 500/45-57).

GOALS: The participation goal percentages on the amount of the contract awarded by CDB for this project are:
General: 4% combined MBE/WBE. No VBE goals.

B. The contract award is defined as a Base Bid plus any or all alternates. Only MBE/WBE/PBE/VBE firms certified by the Illinois Department of Central Management Services (CMS) are acceptable. The MBE/WBE/PBE/VBE certification with CMS shall be in good standing prior to the bid opening date.

NOTE: MBE/WBE/PBE/VBE goals are in addition to those specified for workforce projections on the Illinois Department of Human Rights PC-2 Form.

INSTRUCTIONS: When Goals are established, the Bidder shall identify below the names of certified MBE/WBE/PBE/VBE vendors that will perform at least the percentage of the work specified in the Goals statement (see above) and the proposed dollar value of the subcontract (percentage values are not acceptable). If the Bidder is an MBE/WBE/PBE/VBE, then the Bidder shall list the work to be done with own forces and the proposed dollar value of the work on the form. If the Bidder needs assistance in identifying subcontractors or suppliers, contact CDB's Fair Employment Practices Unit (FEP) prior to bid, and, if applicable, during the 10-day cure period and assistance will be provided. Efforts to comply with the requirements in Section 00 43 39 of the Supplement to the Standard Documents for Construction will be considered in evaluating whether the bid is responsive.

- **A completed 4105 Form should be provided with the Bidder's bid.**
- **Submission of a blank 4105 Form (defined as no eligible participation listed) with a bid that includes MBE/WBE/PBE/VBE goals requires submission of Good Faith Effort (GFE) documentation at the time of bid and checking the associated box on the 4105 Form. GFE documentation should identify efforts made prior to the bid deadline. Failure to provide any of the required documentation shall result in the Bidder's bid being deemed non-responsive. If GFE documentation is received at the time of bid with the blank 4105 Form, the Bidder shall be notified and afforded a period not to exceed ten (10) calendar days from the date of notification (10-day cure period) to cure deficiencies or submit written evidence of its further Good Faith Efforts to achieve the goals. Submit documentation to CDB.FEP@illinois.gov.**
- **If the Bidder submits a 4105 Form with eligible participation listed, but fails to meet the goals set forth, the Bidder shall be notified and afforded a period not to exceed ten (10) calendar days from the date of notification (10-day cure period) to cure deficiencies or submit written evidence of its Good Faith Efforts to achieve the goals. Submit documentation to CDB.FEP@illinois.gov.**
- **Firms cannot be identified after the 10-day cure period.**
- **Failure to identify firms, submit Good Faith Effort documentation, or both within the 10-day cure period shall result in rejection of bid.**
- **Firms shall be certified by CMS as an MBE/WBE/PBE/VBE prior to bid opening. Copies of the certifications shall be submitted with the bid.**
- **A firm may only be used to satisfy one goal (MBE, WBE, PBE, or VBE) and not multiple goals.**
- **See the 2009 Standard Documents for Construction and the most current Supplement: 00 43 39 .10 – Calculation**

RETURN WITH BID

of MBE/WBE/PBE/VBE Participation as a Material Supplier or Subcontractor.

BIDDER'S MBE/WBE/PBE/VBE PARTICIPATION SHOULD BE LISTED ON THE FOLLOWING BASE BID SHEETS AND ALTERNATE SHEETS (IF APPLICABLE).
(Attach additional sheets if necessary)

RETURN WITH BID

Name of Bidder: ____________________ **CDB PROJECT NO.** 102-615-016

BASE BID:

CDB Prequalification or Registration Number, Name of MBE/WBE/PBE/VBE Firm Address City State Zip	Proposed $ Value of Subcontract/Work	Telephone Number	MBE/WBE/ PBE/VBE Designation and Certifying Agency	List Certified Commodity Codes and Category Related to Work to be Performed	Scope of Work	CDB Use: Verified Renewal Date
			☐ MBE ☐ WBE ☐ PBE ☐ VBE ☐ Certified by CMS			
			☐ MBE ☐ WBE ☐ PBE ☐ VBE ☐ Certified by CMS			
			☐ MBE ☐ WBE ☐ PBE ☐ VBE ☐ Certified by CMS			
			☐ MBE ☐ WBE ☐ PBE ☐ VBE ☐ Certified by CMS			
			☐ MBE ☐ WBE ☐ PBE ☐ VBE ☐ Certified by CMS			
			☐ MBE ☐ WBE ☐ PBE ☐ VBE ☐ Certified by CMS			

RETURN WITH BID

			☐ MBE ☐ WBE ☐ PBE ☐ VBE ☐ Certified by CMS			
			☐ MBE ☐ WBE ☐ PBE ☐ VBE ☐ Certified by CMS			

RETURN WITH BID

Name of Bidder: _____ **CDB PROJECT NO.** 102-615-016

The Bidder represents to CDB that, to the best of its knowledge and belief:

1. Each of the subcontractors and suppliers listed is certified by CMS under the provisions and definitions in the Business Enterprise for Minorities, Women, and Persons with Disabilities Act (30 ILCS 575) and Illinois Procurement Code (30 ILCS 500/45-57) as a minority-owned business, woman-owned business, business owned by a person with a disability, or veteran-owned business.
2. The subcontract(s) which will be executed by the Bidder for the first and/or second level subcontractors and suppliers if the Bidder is awarded this contract by CDB will meet or exceed the specified MBE/WBE/PBE goals and will comply with all provisions of the Business Enterprise for Minorities, Women, and Persons with Disabilities Act (30 ILCS 575).
3. The subcontract(s) which will be executed by the Bidder for the first and/or second level subcontractors and suppliers if the Bidder is awarded this contract by CDB will meet or exceed the specified VBE goals and will comply with all provisions of the Illinois Procurement Code (30 ILCS 500/45-57).

If a blank 4105 Form (defined as no eligible participation listed) is submitted with the bid, the Bidder shall check the box and submit Good Faith Effort documentation with the bid documentation by the bid deadline: ☐ check if applicable

Bidder agrees to and certifies that it will comply with the contractual requirements specified in Article 00 43 39 of CDB's Standard Documents for Construction, and the most current Supplement, regarding the Minority, Women, Persons with Disabilities and Veterans Business Enterprise Program Acts.

_____ _____
Signature **Date**

_____
Printed Name and Title

SIGNATURE IS REQUIRED

RETURN WITH BID

State of Illinois
CAPITAL DEVELOPMENT BOARD

_____

_____

as Principal, and _____
a corporation of the State of _____
as Surety, are held and firmly bound unto the State of Illinois, acting by and through the Capital Development Board, as Obligee, in the amount of ten percent (10%) of the amount of the base bid for the payment of which Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, to this agreement.

Principal has submitted to Obligee a bid to enter into a written contract, for

CDB Project Number: 102-615-016 Division of Work: _____
in accordance with bidding documents for the project, which contract is by reference made a part hereof and is hereinafter referred to as "the Contract".

THE CONDITION OF THIS OBLIGATION is that if Principal, upon acceptance by Obligee of its bid within the period of time specified for acceptance, shall comply with all post award requirements as required by the terms of the bid within the time specified after date of the Notice of Award, or in the event of the failure to comply with all post award requirements, if Principal shall pay Obligee (1) for all costs of procuring the work which exceeds the amount of its bid, or (2) shall pay Obligee the amount of this bond as liquidated damages in the event Principal is a sole bidder and after an attempt to secure other bids by readvertising none can be obtained, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Surety hereby agrees that its obligation shall not be impaired by any extensions of time for Obligee's acceptance or compliance with post award requirements. Surety hereby waives notice of such extensions.

Signed and sealed this _____ day of _____ , 20__.

_____ _____
CONTRACTOR SURETY

BY _____ BY _____
SIGNATURE OFFICER OF THE SURETY

Title _____ Title _____
ATTEST:

_____
CORPORATE SECRETARY (Corporations only)

JURAT (Notary's Statement Authenticating Signature)

STATE OF _____

COUNTY OF _____

I, _____, a Notary Public in and for said county, do hereby certify that
(Insert Name of Attorney-In-Fact for SURETY)
who is personally known to me to be the same person whose name is subscribed to the foregoing instrument on behalf of SURETY, appeared before me this day in person and acknowledged respectively, that he/she signed, sealed, and delivered said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this _____ DAY OF _____ A.D. 20 __

My commission expires _____

Notary Signature _____

RETURN WITH BID

The Bidder should include this form with the Bid Forms if a material substitution is offered at that time. See Article 00 43 25 of the Standard Documents for Construction.

The Base Bid and Alternate Bids include only those products specified in the bidding documents. Following is a list of substitute products which bidder proposes to furnish on this project, with the difference in price being deducted from the Base Bid or Alternate Bids.

NOTE: CDB WILL NOT ACCEPT SUBSTITUTIONS FOR SPECIFIED MEMBRANE ROOF SYSTEM(S).

Bidder understands that acceptance of any proposed substitution is at CDB's option. Approval or rejection of any substitutions listed below will be indicated prior to executing the Contract.

MANUFACTURER'S NAME AND PRODUCT	DEDUCT

EVALUATION. Contract award will be made in accord with the Standard Documents for Construction. Only the lowest responsible bidder's Proposed Product Substitution Form will be evaluated.

BIDDER'S NAME: _____

TRADE: _____

State Required Ethical Standards Governing Contract Procurement:

Article 50 of the Illinois Procurement Code establishes the duty of all State chief procurement officers, State purchasing officers, and their designees to maximize the value of the expenditure of public moneys in procuring goods, services, and contracts for the State of Illinois and to act in a manner that maintains the integrity and public trust of State government. In discharging this duty, they are charged by law to use all available information, reasonable efforts, and reasonable actions to protect, safeguard, and maintain the procurement process of the State of Illinois.

In order to comply with the provisions of Article 50 and to carry out the duty established therein, all bidders are to adhere to ethical standards established for the procurement process, and to make such assurances, disclosures and certifications required by law. The bidder indicates that each certification is made and understood, and that each disclosure requirement has been understood and completed.

In addition to all other remedies provided by law, failure to comply with any assurance, failure to make any disclosure or the making of a false certification shall be grounds for the chief procurement officer to void the contract, or subcontract, and may result in the suspension or debarment of the bidder or subcontractor.

The requirements of this certification and disclosure are a material part of the contract, and the contractor shall require this certification provision to be included in all subcontracts.

THE BIDDER MAKES THE FOLLOWING REPRESENTATIONS:

A. The Bidder certifies that it is aware of the requirements of the Substance Abuse Prevention on Public Works Project Act, 820 ILCS 265, and that, if awarded a contract, it is or will be in full compliance with the law prior to beginning work, including the requirement to file with CDB a written substance abuse plan which meets or exceeds the requirements of the Act.

B. The Bidder certifies that it is aware of the requirements of section 23.9 of the State Comptroller Act, 15 ILCS 405/23.9, which was effective August 26, 2011. This statute requires a fee of $15 to cover expenses related to the administration of the Minority Contractor Opportunity Initiative. Any Vendor awarded a contract of $1,000 or more from this solicitation is required to pay a fee of $15. The Comptroller shall deduct the fee from the first check issued to the Vendor under the contract and deposit the fee in the Comptroller's Administrative Fund.

C. Apprenticeship and Training Certification
In accordance with the provisions of Section 30-22 (6) of the Illinois Procurement Code, the bidder certifies that it is a participant, either as an individual or as part of a group program, in the approved apprenticeship and training programs applicable to each type of work or craft that the bidder will perform with its own forces. The bidder further certifies for work that will be performed by subcontract that each of its subcontractors either (a) is, at the time of such bid, participating in an approved, applicable apprenticeship and training program; or (b) will, prior to commencement of performance of work pursuant to this contract, begin participation in an approved apprenticeship and training program applicable to the work of the subcontract.

The bidder shall include with this bid package the official Certificate of Registration or a verification letter from the US Department of Labor (USDOL) certified group program sponsor for the USDOL certified apprenticeship and training program of which the bidder is a member for each of the types of work or crafts that will be performed with the bidder's forces and for each of the types of work or crafts that will be performed by the subcontractor(s) (if the subcontractor is participating in an approved program at the time of bid).

D. Illinois Office Certification
Bidder certifies that it will maintain an Illinois office as the primary place of employment for persons employed in the construction authorized by the contract in accordance with 30 ILCS 500/30-22(8).

E. **STANDARD BUSINESS TERMS AND CONDITIONS**

1. AVAILABILITY OF APPROPRIATION; SUFFICIENCY OF FUNDS: This contract is contingent upon and subject to the availability of sufficient funds. CDB may terminate or suspend this contract, in whole or in part, without penalty or further payment being required, if (i) sufficient funds for this contract have not been appropriated or otherwise made available to CDB by the State or the Federal funding source, (ii) the Governor or CDB reserves funds, or (iii) the Governor or CDB determines that funds will not or may not be available for payment. CDB shall provide notice, in writing, to the Vendor of any such funding failure and its election to terminate or suspend the contract as soon as practicable. Any suspension or termination pursuant to this Section will be effective upon the date of the written notice, unless otherwise indicated.

2. AUDIT/RETENTION OF RECORDS (30 ILCS 500/20-65): Vendor and its subcontractors shall maintain books and records relating to the performance of the contract or subcontract and necessary to support amounts charged to the State under the contract or subcontract. Books and records, including information stored in databases or other computer systems, shall be maintained by the Vendor for a period of three years from the later of the date of final payment under the contract or completion of the contract, and by the subcontractor for a period of three years from the later of final payment under the term or completion of the subcontract. If federal funds are used to pay contract costs, the Vendor and its subcontractors must retain its records for five years. Books and records required to be maintained under this section shall be available for review or audit by representatives of: the procuring Agency, the Auditor General, the Executive Inspector General, the Chief Procurement Officer, State of Illinois internal auditors or other governmental entities with monitoring authority, upon reasonable notice and during normal business hours. Vendor and its subcontractors shall cooperate fully with any such audit and with any investigation conducted by any of these entities. Failure to maintain books and records required by this section shall establish a presumption in favor of the State for the recovery of any funds paid by the State under the contract for which adequate books and records are not available to support the purported disbursement. The Vendor or subcontractors shall not impose a charge for audit or examination of the Vendor's books and records.

3. TIME IS OF THE ESSENCE: Time is of the essence with respect to Vendor's performance of this contract. Vendor shall continue to perform its obligations while any dispute concerning the contract is being resolved unless otherwise directed by the State.

4. NO WAIVER OF RIGHTS: Except as specifically waived in writing, failure by a Party to exercise or enforce a right does not waive that Party's right to exercise or enforce that or other rights in the future.

5. FORCE MAJEURE: Failure by either Party to perform its duties and obligations will be excused by unforeseeable circumstances beyond its reasonable control and not due to its negligence including acts of nature, acts of terrorism, riots, labor disputes, fire, flood, explosion, and governmental prohibition. The non-declaring Party may cancel the contract without penalty if performance does not resume within 30 days of the declaration.

6. CONFIDENTIAL INFORMATION: Each Party, including its agents and subcontractors, to this contract may have or gain access to confidential data or information owned or maintained by the other Party in the course of carrying out its responsibilities under this contract. Vendor shall presume all information received from the State or to which it gains access pursuant to this contract is confidential. Vendor information, unless clearly marked as confidential and exempt from disclosure under the Illinois Freedom of Information Act, shall be considered public. No confidential data collected, maintained, or used in the course of performance of the contract shall be disseminated except as authorized by law and with the written consent of the disclosing Party, either during the

period of the contract or thereafter. The receiving Party must return any and all data collected, maintained, created or used in the course of the performance of the contract, in whatever form it is maintained, promptly at the end of the contract, or earlier at the request of the disclosing Party, or notify the disclosing Party in writing of its destruction. The foregoing obligations shall not apply to confidential data or information lawfully in the receiving Party's possession prior to its acquisition from the disclosing Party; received in good faith from a third-party not subject to any confidentiality obligation to the disclosing Party; now is or later becomes publicly known through no breach of confidentiality obligation by the receiving Party; or is independently developed by the receiving Party without the use or benefit of the disclosing Party's confidential information.

7. USE AND OWNERSHIP: All work performed or supplies created by Vendor under this contract, whether written documents or data, goods or deliverables of any kind, shall be deemed work-for-hire under copyright law and all intellectual property and other laws, and the State of Illinois is granted sole and exclusive ownership to all such work, unless otherwise agreed in writing. Vendor hereby assigns to the State all right, title, and interest in and to such work including any related intellectual property rights, and/or waives any and all claims that Vendor may have to such work including any so-called "moral rights" in connection with the work. Vendor acknowledges the State may use the work product for any purpose. Confidential data or information contained in such work shall be subject to confidentiality provisions of this contract.

8. INDEPENDENT CONTRACTOR: Vendor shall act as an independent contractor and not an agent or employee of, or joint venturer with the State. All payments by the State shall be made on that basis.

9. SOLICITATION AND EMPLOYMENT: Vendor shall not employ any person employed by the State during the term of this contract to perform any work under this contract. Vendor shall give notice immediately to the Agency's director if Vendor solicits or intends to solicit State employees to perform any work under this contract.

10. COMPLIANCE WITH THE LAW: The Vendor, its employees, agents, and subcontractors shall comply with all applicable federal, state, and local laws, rules, ordinances, regulations, orders, federal circulars and all license and permit requirements in the performance of this contract. Vendor shall be in compliance with applicable tax requirements and shall be current in payment of such taxes. Vendor shall obtain at its own expense, all licenses and permissions necessary for the performance of this contract.

11. BACKGROUND CHECK: Whenever the State deems it reasonably necessary for security reasons, the State may conduct, at its expense, criminal and driver history background checks of Vendor's and subcontractors officers, employees or agents. Vendor or subcontractor shall reassign immediately any such individual who, in the opinion of the State, does not pass the background checks.

12. APPLICABLE LAW: This contract shall be construed in accordance with and is subject to the laws and rules of the State of Illinois. The Department of Human Rights' Equal Opportunity requirements (44 Ill. Adm. Code 750) are incorporated by reference. Any claim against the State arising out of this contract must be filed exclusively with the Illinois Court of Claims (705 ILCS 505/1). The State shall not enter into binding arbitration to resolve any contract dispute. The State of Illinois does not waive sovereign immunity by entering into this contract. The official text of cited statutes is incorporated by reference (An unofficial version can be viewed at http://www.ilga.gov/legislation/ilcs/ilcs.asp). In compliance with the Illinois and federal Constitutions, the Illinois Human Rights Act, the U. S. Civil Rights Act, and Section 504 of the federal Rehabilitation Act and other applicable laws and rules the State does not unlawfully discriminate in employment, contracts, or any other activity.

13. ANTI-TRUST ASSIGNMENT: If Vendor does not pursue any claim or cause of action it has arising under federal or state antitrust laws relating to the subject matter of the contract, then upon request of the Illinois Attorney General, Vendor shall assign to the State rights, title and interest in and to the claim or cause of action.

14. CONTRACTUAL AUTHORITY: The Agency that signs for the State of Illinois shall be the only State entity responsible for performance and payment under the contract. When the Chief Procurement Officer or authorized designee signs in addition to an Agency, they do so as approving officer and shall have no liability to Vendor. When the Chief Procurement officer or authorized designee signs a master contract on behalf of State agencies, only the Agency that places an order with the Vendor shall have any liability to Vendor for that order.

15. NOTICES: Notices and other communications provided for herein shall be given in writing by registered or certified mail, return receipt requested, by receipted hand delivery, by courier (UPS, Federal Express or other similar and reliable carrier), by e-mail, or by fax showing the date and time of successful receipt. Notices shall be sent to the individuals who signed the contract using the contact information following the signatures. Each such notice shall be deemed to have been provided at the time it is actually received. By giving notice, either Party may change the contact information.

16. MODIFICATIONS AND SURVIVAL: Amendments, modifications and waivers must be in writing and signed by authorized representatives of the Parties. Any provision of this contract officially declared void, unenforceable, or against public policy, shall be ignored and the remaining provisions shall be interpreted, as far as possible, to give effect to the Parties' intent. All provisions that by their nature would be expected to survive, shall survive termination. In the event of a conflict between the State's and the Vendor's terms, conditions and attachments, the State's terms, conditions and attachments shall prevail.

17. PERFORMANCE RECORD / SUSPENSION: Upon request of the State, Vendor shall meet to discuss performance or provide contract performance updates to help ensure proper performance of the contract. The State may consider Vendor's performance under this contract and compliance with law and rule to determine whether to continue the contract, suspend Vendor from doing future business with the State for a specified period of time, or to determine whether Vendor can be considered responsible on specific future contract opportunities.

18. FREEDOM OF INFORMATION ACT: This contract and all related public records maintained by, provided to or required to be provided to the State are subject to the Illinois Freedom of Information Act notwithstanding any provision to the contrary that may be found in this contract.

Signature:_____ Date: _____

Printed Name: _____

Title: _____

Phone Number: _____

Email Address: _____

RETURN WITH BID

FORMS A

Effective July 1, 2014 – BIDDERS HAVE TWO OPTIONS FOR PROVIDING THE REQUIRED CERTIFICATIONS AND DISCLOSURES:

1. FORMS A –THE STANDARD PAPER METHOD OF REQUIRED DOCUMENTS AND INFORMATION.

OR

2. FORMS B AND AN ILLINOIS PROCUREMENT GATEWAY (IPG) REGISTRATION NUMBER WHICH ALLOWS FOR REDUCED DOCUMENTATION WHEN USING AN APPROVED IPG REGISTRATION NUMBER.

The Illinois Procurement Gateway is located at https://ipg.vendorreg.com.

The IPG is a web based system that serves as the primary location for entering, organizing, and reviewing vendor information. The IPG allows vendors to provide disclosures, registrations, and other documentation needed to do business with a State agency or university in advance of any particular procurement, thereby reducing the number of documents needed to be submitted with a bid.

The State reviews information submitted through the IPG to register vendors in advance of submitting bids and offers for contracts. Upon satisfactory registration, vendors receive a registration number that may be used when submitting the required forms. Reviews may exceed two weeks when information submitted is incomplete or inaccurate.

FORMS A

***This Forms A section shall be used if you are not using IPG (Illinois Procurement Gateway) Registration #.**

Document 00 41 09 – Certifications and Disclosures

RETURN WITH BID

A vendor responding to a solicitation by the State of Illinois must return the information requested within this section with their bid or offer if they are not registered in the Illinois Procurement Gateway (IPG). Failure to do so may render their bid or offer non-responsive and result in disqualification.

Please read this entire Forms A and provide the requested information as applicable and per the instructions. All forms and signature areas contained in this Forms A must be completed in full and submitted along with the bid in an Invitation for Bid; and completed in full and submitted along with the technical response and price proposal, which combined will constitute the Offer, in a Request for Proposal.

Vendor Name:	Phone:
Street Address:	Email:
City, State Zip:	Vendor Contact:

RETURN WITH BID

OUTLINE

FORMS A

Complete this section if you are not using an IPG (Illinois Procurement Gateway) Registration #

RETURN WITH BID

STATE OF ILLINOIS

BUSINESS AND DIRECTORY INFORMATION

1.1. Name of Business (official name and DBA)

1.2. Business Headquarters (address, phone and fax)

1.3. If a Division or Subsidiary of another organization provide the name and address of the parent

1.4. Billing Address

1.5. Name of Chief Executive Officer

1.6. Company Web Site Address

1.7. Type of Organization (sole proprietor, corporation, etc.--should be same as on Taxpayer ID form below

1.8. Length of time in business

1.9. Annual Sales for Offeror's most recently completed fiscal year

1.10. Show number of full-time employees, on average, during the most recent fiscal year

1.11. Is your company at least 51% owned and controlled by individuals in one of the following categories? If "Yes," please check the category that applies:

1.11.1. Minority (30 ILCS 575/2(A)(1) & (3))	☐ Yes
1.11.2. Female (30 ILCS 575/2(A)(2) & (4))	☐ Yes
1.11.3. Person with Disability (30 ILCS 575/2(A)(2.05) & (2.1))	☐ Yes
1.11.4. Disadvantaged (49 CFR 26)	☐ Yes
1.11.5. Veteran (30 ILCS 500/45-57)	☐ Yes

RETURN WITH BID

STATE OF ILLINOIS

ILLINOIS DEPARTMENT OF HUMAN RIGHTS PUBLIC CONTRACT NUMBER

2.1. If Offeror employed fifteen or more full-time employees at the time of submission of their response to this solicitation or any time during the previous 365-day period leading up to submission, it must have a current IDHR Public Contract Number or have proof of having submitted a completed application for one **prior** to the solicitation opening date. 775 ILCS 5/2-101. If the Agency/University cannot confirm compliance, it will not be able to consider a Vendor's bid or offer. Please complete the appropriate sections below:

Name of Company (and DBA): .

☐ (check if applicable) The number is not required as the company has not met or exceeded the number of employees that makes registration necessary under the requirements of the Human Rights Act described above.

IDHR Public Contracts Number: Expiration Date: .

2.2. If number has not yet been issued, provide the date a completed application for the number was submitted to IDHR: .

2.3. Upon expiration and until their Contractor Identification Number is renewed, companies will not be eligible to be awarded contracts by the State of Illinois or other jurisdictions that require a current IDHR number as a condition of contract eligibility. 44 ILL. ADM. CODE 750.210(a).

2.4. Numbers issued by the Department of Human Rights (or its predecessor agency, the Illinois Fair Employment Practices Commission) prior to July 1, 1998 are no longer valid. This affects numbers below 89999-00-0. Valid numbers begin with 900000-00-0.

2.5. If Offeror's organization holds an expired number, it must re-register with the Department of Human Rights.

2.6. Offeror may obtain an application form by:

2.6.1. Telephone: Call the IDHR Public Contracts Unit at (312) 814-2431 between Monday and Friday, 8:30 AM - 5:00 PM, CST. (TDD (312) 263-1579).

2.6.2. Internet: You may download the form from the Department of Human Rights' website at (http://www2.illinois.gov/dhr/PublicContracts/Pages/default.aspx).

2.6.3. Mail: Write to the Department of Human Rights, Public Contracts Unit, 100 West Randolph Street, Suite 10-100, Chicago, IL 60601**.**

RETURN WITH BID

STATE OF ILLINOIS

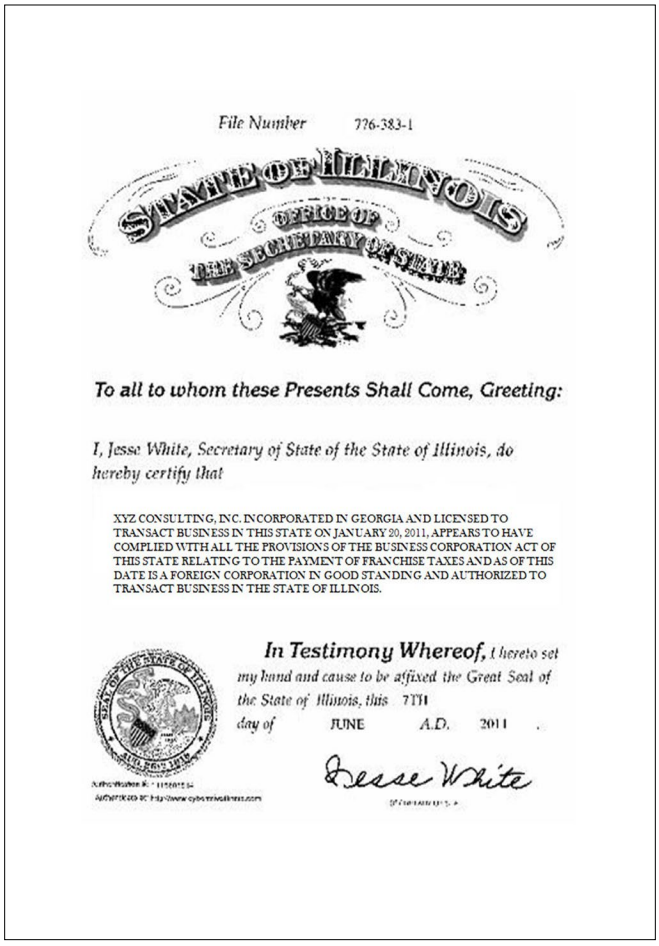
AUTHORIZED TO TRANSACT BUSINESS OR CONDUCT AFFAIRS IN ILLINOIS

3. A person, other than an individual acting as a sole proprietor, must be a duly constituted legal entity and authorized to transact business or conduct affairs in Illinois prior to submitting an offer. 30 ILCS 500/20-43. Offerors must review and complete certification #4.32 in the Standard Certifications found in Forms A, Part 4.

   Certification #4.32 requires Vendor to check one of the two boxes representing its status. The State may request evidence from a vendor that certifies it is authorized to do business in Illinois proving such authorization. Failure to produce evidence in a timely manner may be considered grounds for determining Vendor non-responsive or not responsible.

   For information on registering to transact business or conduct affairs in Illinois, please visit the Illinois Secretary of State's Department of Business Services at their website at (http://cyberdriveillinois.com/departments/business_services/home.html) or your home county clerk.

EVIDENCE OF BEING AUTHORIZED TO TRANSACT BUSINESS OR CONDUCT AFFAIRS IS THE SECRETARY OF STATE'S CERTIFICATE OF GOOD STANDING



File Number 776-383-1

STATE OF ILLINOIS
OFFICE OF
THE SECRETARY OF STATE

To all to whom these Presents Shall Come, Greeting:

I, Jesse White, Secretary of State of the State of Illinois, do hereby certify that

XYZ CONSULTING, INC. INCORPORATED IN GEORGIA AND LICENSED TO TRANSACT BUSINESS IN THIS STATE ON JANUARY 20, 2011, APPEARS TO HAVE COMPLIED WITH ALL THE PROVISIONS OF THE BUSINESS CORPORATION ACT OF THIS STATE RELATING TO THE PAYMENT OF FRANCHISE TAXES AND AS OF THIS DATE IS A FOREIGN CORPORATION IN GOOD STANDING AND AUTHORIZED TO TRANSACT BUSINESS IN THE STATE OF ILLINOIS.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of the State of Illinois, this 7TH *day of* JUNE *A.D.* 2011

Jesse White

RETURN WITH BID
STATE OF ILLINOIS
STANDARD CERTIFICATIONS

Vendor acknowledges and agrees that compliance with this subsection in its entirety for the term of the contract and any renewals is a material requirement and condition of this contract. By executing this contract Vendor certifies compliance with this subsection in its entirety, and is under a continuing obligation to remain in compliance and report any non-compliance.

This subsection, in its entirety, applies to subcontractors used on this contract. Vendor shall include these Standard Certifications in any subcontract used in the performance of the contract using the Standard Certification form provided by the State.

If this contract extends over multiple fiscal years, including the initial term and all renewals, Vendor and its subcontractors shall confirm compliance with this section in the manner and format determined by the State by the date specified by the State and in no event later than July 1 of each year that this contract remains in effect.

If the Parties determine that any certification in this section is not applicable to this contract it may be stricken without affecting the remaining subsections.

4.1. As part of each certification, Vendor acknowledges and agrees that should Vendor or its subcontractors provide false information, or fail to be or remain in compliance with the Standard Certification requirements, one or more of the following sanctions will apply:

- the contract may be void by operation of law,
- the State may void the contract, and
- the Vendor and it subcontractors may be subject to one or more of the following: suspension, debarment, denial of payment, civil fine, or criminal penalty.

Identifying a sanction or failing to identify a sanction in relation to any of the specific certifications does not waive imposition of other sanctions or preclude application of sanctions not specifically identified.

4.2. Vendor certifies it and its employees will comply with applicable provisions of the United States Civil Rights Act, Section 504 of the Federal Rehabilitation Act, the Americans with Disabilities Act, and applicable rules in performance of this contract.

4.3. Vendor, if an individual, sole proprietor, partner or an individual as member of a LLC, certifies he/she is not in default on an educational loan. 5 ILCS 385/3.

4.4. Vendor, if an individual, sole proprietor, partner or an individual as member of a LLC, certifies it he/she has not received (i) an early retirement incentive prior to 1993 under Section 14-108.3 or 16-133.3 of the Illinois Pension Code or (ii) an early retirement incentive on or after 2002 under Section 14-108.3 or 16-133.3 of the Illinois Pension Code. 30 ILCS 105/15a; 40 ILCS 5/14-108.3; 40 ILCS 5/16-133.

RETURN WITH BID

STATE OF ILLINOIS

STANDARD CERTIFICATIONS

4.5. Vendor certifies that it is a legal entity authorized to do business in Illinois prior to submission of a bid, offer, or proposal. 30 ILCS 500/1-15.80, 20-43.

4.6. To the extent there was a current Vendor providing the services covered by this contract and the employees of that Vendor who provided those services are covered by a collective bargaining agreement, Vendor certifies (i) that it will offer to assume the collective bargaining obligations of the prior employer, including any existing collective bargaining agreement with the bargaining representative of any existing collective bargaining unit or units performing substantially similar work to the services covered by the contract subject to its bid or offer; and (ii) that it shall offer employment to all employees currently employed in any existing bargaining unit who perform substantially similar work to the work that will be performed pursuant to this contract. This does not apply to heating, air conditioning, plumbing and electrical service contracts. 30 ILCS 500/25-80.

4.7. Vendor certifies it has neither been convicted of bribing or attempting to bribe an officer or employee of the State of Illinois or any other State, nor made an admission of guilt of such conduct that is a matter of record. 30 ILCS 500/50-5.

4.8. If Vendor has been convicted of a felony, Vendor certifies at least five years have passed after the date of completion of the sentence for such felony, unless no person held responsible by a prosecutor's office for the facts upon which the conviction was based continues to have any involvement with the business. 30 ILCS 500/50-10.

4.9. If Vendor or any officer, director, partner, or other managerial agent of Vendor has been convicted of a felony under the Sarbanes-Oxley Act of 2002, or a Class 3 or Class 2 felony under the Illinois Securities Law of 1953, Vendor certifies at least five years have passed since the date of the conviction. Vendor further certifies that it is not barred from being awarded a contract and acknowledges that the State shall declare the contract void if this certification is false. 30 ILCS 500/50-10.5.

4.10. Vendor certifies it is not barred from having a contract with the State based upon violating the prohibitions related to either submitting/writing specifications or providing assistance to an employee of the State of Illinois by reviewing, drafting, directing, or preparing any invitation for bids, a request for proposal, or request of information, or similar assistance (except as part of a public request for such information). 30 ILCS 500/50-10.5(e), *amended* by Pub. Act No. 97-0895 (August 3, 2012).

4.11. Vendor certifies that it and its affiliates are not delinquent in the payment of any debt to the State (or if delinquent has entered into a deferred payment plan to pay the debt), and Vendor and its affiliates acknowledge the State may declare the contract void if this certification is false or if Vendor or an affiliate later becomes delinquent and has not entered into a deferred payment plan to pay off the debt. 30 ILCS 500/50-11, 50-60.

4.12. Vendor certifies that it and all affiliates shall collect and remit Illinois Use Tax on all sales of tangible personal property into the State of Illinois in accordance with provisions of the Illinois Use Tax Act and acknowledges that failure to comply may result in the contract being declared void. 30 ILCS 500/50-12.

4.13. Vendor certifies that it has not been found by a court or the Pollution Control Board to have committed a willful or knowing violation of the Environmental Protection Act within the last five years, and is therefore not barred from being awarded a contract. 30 ILCS 500/50-14.

4.14. Vendor certifies it has neither paid any money or valuable thing to induce any person to refrain from bidding on a State contract, nor accepted any money or other valuable thing, or acted upon the promise of same, for not bidding on a State contract. 30 ILCS 500/50-25.

4.15. Vendor certifies it is not in violation of the "Revolving Door" provisions of the Illinois Procurement Code. 30 ILCS 500/50-30.

4.16. Vendor certifies that it has not retained a person or entity to attempt to influence the outcome of a procurement decision for compensation contingent in whole or in part upon the decision or procurement. 30 ILCS 500/50-38.

4.17. Vendor certifies that if it has hired a person required to register under the Lobbyist Registration Act to assist in obtaining any State contract, that none of the lobbyist's costs, fees, compensation, reimbursements, or other remuneration were billed to the State. 30 ILCS 500\50-38.

4.18. Vendor certifies it will report to the Illinois Attorney General and the Chief Procurement Officer any suspected collusion or other anti-competitive practice among any bidders, offerors, contractors, proposers, or employees of the State. 30 ILCS 500/50-40, 50-45, 50-50.

4.19. Vendor certifies steel products used or supplied in the performance of a contract for public works shall be manufactured or produced in the United States, unless the executive head of the procuring Agency/University grants an exception. 30 ILCS 565.

4.20. Drug Free Workplace

4.20.1. If Vendor employs 25 or more employees and this contract is worth more than $5,000, Vendor certifies it will provide a drug free workplace pursuant to the Drug Free Workplace Act.

4.20.2. If Vendor is an individual and this contract is worth more than $5000, Vendor certifies it shall not engage in the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance during the performance of the contract. 30 ILCS 580.

4.21. Vendor certifies that neither Vendor nor any substantially owned affiliate is participating or shall participate in an international boycott in violation of the U.S. Export Administration Act of 1979 or the applicable regulations of the United States. Department of Commerce. 30 ILCS 582.

4.22. Vendor certifies it has not been convicted of the offense of bid rigging or bid rotating or any similar offense of any state or of the United States. 720 ILCS 5/33 E-3, E-4.

RETURN WITH BID

STATE OF ILLINOIS

STANDARD CERTIFICATIONS

4.23. Vendor certifies it complies with the Illinois Department of Human Rights Act and rules applicable to public contracts, which include providing equal employment opportunity, refraining from unlawful discrimination, and having written sexual harassment policies. 775 ILCS 5/2-105.

4.24. Vendor certifies it does not pay dues to or reimburse or subsidize payments by its employees for any dues or fees to any "discriminatory club." 775 ILCS 25/2.

4.25. Vendor certifies that no foreign-made equipment, materials, or supplies furnished to the State under the contract have been or will be produced in whole or in part by forced labor or indentured labor under penal sanction. 30 ILCS 583.

4.26. Vendor certifies that no foreign-made equipment, materials, or supplies furnished to the State under the contract have been produced in whole or in part by the labor of any child under the age of 12. 30 ILCS 584.

4.27. Vendor certifies that any violation of the Lead Poisoning Prevention Act, as it applies to owners of residential buildings, has been mitigated. 410 ILCS 45.

4.28. Vendor warrants and certifies that it and, to the best of its knowledge, its subcontractors have and will comply with Executive Order No. 1 (2007). The Order generally prohibits Vendors and subcontractors from hiring the then-serving Governor's family members to lobby procurement activities of the State, or any other unit of government in Illinois including local governments if that procurement may result in a contract valued at over $25,000. This prohibition also applies to hiring for that same purpose any former State employee who had procurement authority at any time during the one-year period preceding the procurement lobbying activity.

4.29. Vendor certifies that information technology, including electronic information, software, systems and equipment, developed or provided under this contract comply with the applicable requirements of the Illinois Information Technology Accessibility Act Standards as published at (www.dhs.state.il.us/iitaa) 30 ILCS 587.

4.30. Vendor certifies that it has read, understands, and is in compliance with the registration requirements of the Elections Code (10 ILCS 5/9-35) and the restrictions on making political contributions and related requirements of the Illinois Procurement Code. 30 ILCS 500/20-160 and 50-37. Vendor will not make a political contribution that will violate these requirements.

In accordance with section 20-160 of the Illinois Procurement Code, Vendor certifies as applicable:

☐ Vendor is not required to register as a business entity with the State Board of Elections.

or

☐ Vendor has registered with the State Board of Elections. As a registered business entity, Vendor acknowledges a continuing duty to update the registration as required by the Act.

RETURN WITH BID

STATE OF ILLINOIS

STANDARD CERTIFICATIONS

4.31. Vendor certifies that if it is awarded a contract through the use of the preference required by the Procurement of Domestic Products Act, then it shall provide products pursuant to the contract or a subcontract that are manufactured in the United States. 30 ILCS 517.

4.32. A person (other than an individual acting as a sole proprietor) must be a duly constituted legal entity and authorized to transact business or conduct affairs in Illinois prior to submitting a bid or offer. 30 ILCS 500/20-43. If you do not meet these criteria, then your bid or offer will be disqualified.

Vendor must make one of the following two certifications by checking the appropriate box.

A. ☐ Vendor certifies it is an individual acting as a sole proprietor and is therefore not subject to the requirements of section 20-43 of the Procurement Code.

B. ☐ Vendor certifies that it is a legal entity, and was authorized to transact business or conduct affairs in Illinois as of the date for submitting this bid or offer. The State may require Vendor to provide evidence of compliance before award.

4.33. Vendor certifies that, for the duration of this contract it will:

- post its employment vacancies in Illinois and border states on the Department of Employment Security's IllinoisJobLink.com website or its successor system; or
- will provide an online link to these employment vacancies so that this link is accessible through the IllinoisJobLink.com website it successor system; or
- is exempt from 20 ILCS 1005/1005-47 because the contract is for construction-related services as that term is defined in section 1-15.20 of the Procurement Code; or the contract is for construction and vendor is a party to a contract with a bona fide labor organization and performs construction. (20 ILCS 1005/1005-47).

RETURN WITH BID

STATE OF ILLINOIS

STATE BOARD OF ELECTIONS

5. Section 50-37 of the Illinois Procurement Code prohibits political contributions of certain vendors, bidders and offerors. Additionally, section 9-35 of the Illinois Election Code governs provisions relating to reporting and making contributions to state officeholders, declared candidates for State offices and covered political organizations that promote the candidacy of an officeholder or declared candidate for office. The State may declare any resultant contract void if these Acts are violated.

Generally, if a vendor, bidder, or offeror is an entity doing business for profit (i.e. sole proprietorship, partnership, corporation, limited liability company or partnership, or otherwise) and has contracts with State agencies that annually total more than $50,000 or whose aggregate pending bids or proposals and current State contracts that total more than $50,000, the vendor, bidder, or offeror is prohibited from making political contributions and must register with the State Board of Elections. 30 ILCS 500/20-160.

EVIDENCE OF REGISTRATION WITH THE STATE BOARD OF ELECTIONS IS THE CERTIFICATE OF REGISTRATION

Certificate of Registration

STATE BOARD OF ELECTIONS

Registration No. 138

ABC Corporation
123 Main Street
Anywhere, IL USA 62707

Information for this business last updated on:
Wednesday, October 13, 2010

Certificate produced on Wednesday, October 13, 2010 at 12:30 PM

RETURN WITH BID

STATE OF ILLINOIS

DISCLOSURE OF BUSINESS OPERATIONS WITH IRAN

6. In accordance with 30 ILCS 500/50-36, each bid, offer, or proposal submitted for a State contract, other than a small purchase defined in Section 20-20 of the Illinois Procurement Code, will include a disclosure of whether or not the bidder, offeror, or proposing entity, or any of its corporate parents or subsidiaries, within the 24 months before submission of the bid, offer, or proposal had business operations that involved contracts with or provision of supplies or services to the Government of Iran, companies in which the Government of Iran has any direct or indirect equity share, consortiums or projects commissioned by the Government of Iran and:

   - more than 10% of the company's revenues produced in or assets located in Iran involve oil-related activities or mineral-extraction activities; less than 75% of the company's revenues produced in or assets located in Iran involve contracts with or provision of oil-related or mineral – extraction products or services to the Government of Iran or a project or consortium created exclusively by that Government; and the company has failed to take substantial action; or

   - the company has, on or after August 5, 1996, made an investment of $20 million or more, or any combination of investments of at least $10 million each that in the aggregate equals or exceeds $20 million in any 12- month period that directly or significantly contributes to the enhancement of Iran's ability to develop petroleum resources of Iran.

   A bid or offer that does not include this disclosure may be given a period after the bid or offer is submitted to cure non-disclosure. A chief procurement officer may consider the disclosure when evaluating the bid or offer or awarding the contract.

   ☐ There are no business operations that must be disclosed to comply with the above cited law.

   ☐ The following business operations are disclosed to comply with the above cited law:

RETURN WITH BID

STATE OF ILLINOIS

FINANCIAL DISCLOSURES AND CONFLICTS OF INTEREST

The Financial Disclosures and Conflicts of Interest form ("form") must be accurately completed and submitted by the vendor, parent entity(ies), and subcontractors. There are **nine** steps to this form and each must be completed as instructed in the step heading and within the step. A bid or offer that does not include this form shall be considered non-responsive. The Agency/University will consider this form when evaluating the bid or offer or awarding the contract.

The requirement of disclosure of financial interests and conflicts of interest is a continuing obligation. If circumstances change and the disclosure is no longer accurate, then disclosing entities must provide an updated form.

Separate forms are required for the vendor, parent entity(ies), and subcontractors.

This disclosure is submitted for:

☐ Vendor

☐ Vendor's Parent Entity(ies) (100% ownership)

☐ Subcontractor(s) >$50,000 (annual value)

☐ Subcontractor's Parent Entity(ies) (100% ownership) > $50,000 (annual value)

Project Name	
Illinois Procurement Bulletin Number	
Contract Number	
Vendor Name	
Doing Business As (DBA)	
Disclosing Entity	
Disclosing Entity's Parent Entity	
Subcontractor	
Instrument of Ownership or Beneficial Interest	Choose an item. ☐ If you selected Other, please describe:

RETURN WITH BID

STATE OF ILLINOIS

FINANCIAL DISCLOSURES AND CONFLICTS OF INTEREST

STEP 1

SUPPORTING DOCUMENTATION SUBMITTAL

(All vendors complete regardless of annual bid, offer, or contract value)
(Subcontractors with subcontract annual value of more than $50,000 must complete)

You must select one of the six options below and select the documentation you are submitting. You must provide the documentation that the applicable section requires with this form.

☐ Option 1 – Publicly Traded Entities

1.A. ☐ Complete Step 2, Option A for each qualifying individual or entity holding any ownership or distributive income share in excess of 5% or an amount greater than 60% ($106,447.20) of the annual salary of the Governor.

OR

1.B. ☐ Attach a copy of the Federal 10-K or provide a web address of an electronic copy of the Federal 10-K, and skip to Step 3.

☐ Option 2 – Privately Held Entities with more than 100 Shareholders

2.A. ☐ Complete Step 2, Option A for each qualifying individual or entity holding any ownership or distributive income share in excess of 5% or an amount greater than 60% ($106,447.20) of the annual salary of the Governor.

OR

2.B. ☐ Complete Step 2, Option A for each qualifying individual or entity holding any ownership share in excess of 5% and attach the information Federal 10-K reporting companies are required to report under 17 CFR 229.401.

☐ Option 3 – All other Privately Held Entities, not including Sole Proprietorships

3.A. ☐ Complete Step 2, Option A for each qualifying individual or entity holding any ownership or distributive income share in excess of 5% or an amount greater than 60% ($106,447.20) of the annual salary of the Governor.

☐ Option 4 – Foreign Entities

4.A. ☐ Complete Step 2, Option A for each qualifying individual or entity holding any ownership or distributive income share in excess of 5% or an amount greater than 60% ($106,447.20) of the annual salary of the Governor.

OR

4.B. ☐ Attach a copy of the Securities Exchange Commission Form 20-F or 40-F and skip to Step 3.

☐ Option 5 – Not-for-Profit Entities

☐ Complete Step 2, Option B.

☐ Option 6 – Sole Proprietorships

☐ Skip to Step 3.

RETURN WITH BID

STATE OF ILLINOIS

FINANCIAL DISCLOSURES AND CONFLICTS OF INTEREST

STEP 2

DISCLOSURE OF FINANCIAL INTEREST OR BOARD OF DIRECTORS

(All vendors, except sole proprietorships, must complete regardless of annual bid, offer, or contract value)
(Subcontractors with subcontract annual value of more than $50,000 must complete)

Complete **either** Option A (for all entities other than not-for-profits) or Option B (for not-for-profits). Additional rows may be inserted into the tables or an attachment may be provided if needed.

OPTION A – Ownership Share and Distributive Income

Ownership Share – If you selected Option 1.A., 2.A., 2.B., 3.A., or 4.A. in Step 1, provide the name and address of each individual or entity and their percentage of ownership if said percentage exceeds 5%, or the dollar value of their ownership if said dollar value exceeds $106,447.20.

☐ Check here if including an attachment with requested information in a format substantially similar to the format below.

TABLE – X			
Name	**Address**	**Percentage of Ownership**	**$ Value of Ownership**

Distributive Income – If you selected Option 1.A., 2.A., 3.A., or 4.A. in Step 1, provide the name and address of each individual or entity and their percentage of the disclosing vendor's total distributive income if said percentage exceeds 5% of the total distributive income of the disclosing entity, or the dollar value of their distributive income if said dollar value exceeds $106,447.20.

☐ Check here if including an attachment with requested information in a format substantially similar to the format below.

TABLE – Y			
Name	**Address**	**% of Distributive Income**	**$ Value of Distributive Income**

RETURN WITH BID

STATE OF ILLINOIS

FINANCIAL DISCLOSURES AND CONFLICTS OF INTEREST

Please certify that the following statements are true.

I have disclosed all individuals or entities that hold an ownership interest of greater than 5% or greater than $106,447.20.

☐ Yes ☐ No

I have disclosed all individuals or entities that were entitled to receive distributive income in an amount greater than $106,447.20 or greater than 5% of the total distributive income of the disclosing entity.

☐ Yes ☐ No

OPTION B – Disclosure of Board of Directors (Not-for-Profits)

If you selected Option 5 in Step 1, list members of your board of directors. Please include an attachment if necessary.

TABLE – Z	
Name	**Address**

STEP 3
DISCLOSURE OF LOBBYIST OR AGENT

(Complete only if bid, offer, or contract has an annual value over $50,000)
(Subcontractors with subcontract annual value of more than $50,000 must complete)

☐ Yes ☐ No. Is your company represented by or do you employ a lobbyist required to register under the Lobbyist Registration Act (lobbyist must be registered pursuant to the Act with the Secretary of State) or other agent who is not identified through Step 2, Option A above and who has communicated, is communicating, or may communicate with any State/Public University officer or employee concerning the bid or offer? If yes, please identify each lobbyist and agent, including the name and address below.

If you have a lobbyist that does not meet the criteria, then you do not have to disclose the lobbyist's information.

Name	**Address**	**Relationship to Disclosing Entity**

Describe all costs/fees/compensation/reimbursements related to the assistance provided by each representative lobbyist or other agent to obtain this Agency/University contract: _____

RETURN WITH BID

STATE OF ILLINOIS

FINANCIAL DISCLOSURES AND CONFLICTS OF INTEREST

STEP 4

PROHIBITED CONFLICTS OF INTEREST

(All vendors must complete regardless of annual bid, offer, or contract value)
(Subcontractors with subcontract annual value of more than $50,000 must complete)

Step 4 must be completed for each person disclosed in Step 2, Option A and for sole proprietors identified in Step 1, Option 6 above. Please provide the name of the person for which responses are provided: _____

1. Do you hold or are you the spouse or minor child who holds an elective office in the State of Illinois or hold a seat in the General Assembly? ☐ Yes ☐ No

2. Have you, your spouse, or minor child been appointed to or employed in any offices or agencies of State government and receive compensation for such employment in excess of 60% ($106,447.20) of the salary of the Governor? ☐ Yes ☐ No

3. Are you or are you the spouse or minor child of an officer or employee of the Capital Development Board or the Illinois Toll Highway Authority? ☐ Yes ☐ No

4. Have you, your spouse, or an immediate family member who lives in your residence currently or who lived in your residence within the last 12 months been appointed as a member of a board, commission, authority, or task force authorized or created by State law or by executive order of the Governor? ☐ Yes ☐ No

5. If you answered yes to any question in 1-4 above, please answer the following: Do you, your spouse, or minor child receive from the vendor more than 7.5% of the vendor's total distributable income or an amount of distributable income in excess of the salary of the Governor ($177,412.00)? ☐ Yes ☐ No

6. If you answered yes to any question in 1-4 above, please answer the following: Is there a combined interest of self with spouse or minor child more than 15% in the aggregate of the vendor's distributable income or an amount of distributable income in excess of two times the salary of the Governor ($354,824.00)? ☐ Yes ☐ No

RETURN WITH BID

STATE OF ILLINOIS

FINANCIAL DISCLOSURES AND CONFLICTS OF INTEREST

STEP 5

POTENTIAL CONFLICTS OF INTEREST RELATING TO PERSONAL RELATIONSHIPS

(Complete only if bid, offer, or contract has an annual value over $50,000)
(Subcontractors with subcontract annual value of more than $50,000 must complete)

Step 5 must be completed for each person disclosed in Step 2, Option A and for sole proprietors identified in Step 1, Option 6 above.

Please provide the name of the person for which responses are provided: _____

1. Do you currently have, or in the previous 3 years have you had State employment, including contractual employment of services? ☐ Yes ☐ No

2. Has your spouse, father, mother, son, or daughter, had State employment, including contractual employment for services, in the previous 2 years? ☐ Yes ☐ No

3. Do you hold currently or have you held in the previous 3 years elective office of the State of Illinois, the government of the United States, or any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois? ☐ Yes ☐ No

4. Do you have a relationship to anyone (spouse, father, mother, son, or daughter) holding elective office currently or in the previous 2 years? ☐ Yes ☐ No

5. Do you hold or have you held in the previous 3 years any appointive government office of the State of Illinois, the United States of America, or any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois, which office entitles the holder to compensation in excess of expenses incurred in the discharge of that office? ☐ Yes ☐ No

6. Do you have a relationship to anyone (spouse, father, mother, son, or daughter) holding appointive office currently or in the previous 2 years? ☐ Yes ☐ No

7. Do you currently have or in the previous 3 years had employment as or by any registered lobbyist of the State government? ☐ Yes ☐ No

8. Do you currently have or in the previous 2 years had a relationship to anyone (spouse, father, mother, son, or daughter) that is or was a registered lobbyist? ☐ Yes ☐ No

9. Do you currently have or in the previous 3 years had compensated employment by any registered election or re-election committee registered with the Secretary of State or any county clerk in the State of Illinois, or any political action committee registered with either ☐ Yes ☐ No

the Secretary of State or the Federal Board of Elections?

10. Do you currently have or in the previous 2 years had a relationship to anyone (spouse, father, mother, son, or daughter) who is or was a compensated employee of any registered election or reelection committee registered with the Secretary of State or any county clerk in the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections? ☐ Yes ☐ No

STEP 6
EXPLANATION OF AFFIRMATIVE RESPONSES

(All vendors must complete regardless of annual bid, offer, or contract value)
(Subcontractors with subcontract annual value of more than $50,000 must complete)

If you answered "Yes" in Step 4 or Step 5, please provide on an additional page a detailed explanation that includes, but is not limited to the name, salary, State agency or university, and position title of each individual.

STEP 7
POTENTIAL CONFLICTS OF INTEREST
RELATING TO DEBARMENT & LEGAL PROCEEDINGS

(Complete only if bid, offer, or contract has an annual value over $50,000)
(Subcontractors with subcontract annual value of more than $50,000 must complete)

This step must be completed for each person disclosed in Step 2, Option A, Step 3, and for each entity and sole proprietor disclosed in Step 1.

Please provide the name of the person or entity for which responses are provided: _____

1. Within the previous ten years, have you had debarment from contracting with any governmental entity? ☐ Yes ☐ No

2. Within the previous ten years, have you had any professional licensure discipline? ☐ Yes ☐ No

3. Within the previous ten years, have you had any bankruptcies? ☐ Yes ☐ No

4. Within the previous ten years, have you had any adverse civil judgments and administrative findings? ☐ Yes ☐ No

RETURN WITH BID

STATE OF ILLINOIS

FINANCIAL DISCLOSURES AND CONFLICTS OF INTEREST

5. Within the previous ten years, have you had any criminal felony convictions? ☐ Yes ☐ No

If you answered "Yes", please provide a detailed explanation that includes, but is not limited to the name, State agency or university, and position title of each individual. _____

STEP 8
DISCLOSURE OF CURRENT AND PENDING CONTRACTS

(Complete only if bid, offer, or contract has an annual value over $50,000)
(Subcontractors with subcontract annual value of more than $50,000 must complete)

If you selected Option 1, 2, 3, 4, or 6 in Step 1, do you have any contracts, pending contracts, bids, proposals, subcontracts, leases or other ongoing procurement relationships with units of State of Illinois government?

☐ Yes ☐ No.

If "Yes", please specify below. Additional rows may be inserted into the table or an attachment may be provided if needed.

Agency/University	Project Title	Status	Value	Contract Reference/P.O./Illinois Procurement Bulletin #

Please explain the procurement relationship: _____

STEP 9
SIGN THE DISCLOSURE

(All vendors must complete regardless of annual bid, offer, or contract value)
(Subcontractors with subcontract annual value of more than $50,000 must complete)

This disclosure is signed, and made under penalty of perjury for all for-profit entities, by an authorized officer or employee on behalf of the bidder or offeror pursuant to Sections 50-13 and 50-35 of the Illinois Procurement Code. This disclosure information is submitted on behalf of:

Name of Disclosing Entity:

Signature:_____ Date:

Printed Name:

Title:

Phone Number:

Email Address:

RETURN WITH BID

STATE OF ILLINOIS
CERTIFICATIONS AND DISCLOSURES

I certify that:

The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and

I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and

I am a U.S. person (including a U.S. resident alien).

- If you are an individual, enter your name and SSN as it appears on your Social Security Card.
- If you are a sole proprietor, enter the owner's name on the name line followed by the name of the business and the owner's SSN or EIN.
- If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's name on the name line and the D/B/A on the business name line and enter the owner's SSN or EIN.
- If the LLC is a corporation or partnership, enter the entity's business name and EIN and for corporations, attach IRS acceptance letter (CP261 or CP277).
- For all other entities, enter the name of the entity as used to apply for the entity's EIN and the EIN.

Name:

Business Name:

Taxpayer Identification Number:
Social Security Number:
or
Employer Identification Number:

Legal Status (check one):

☐ Individual	☐ Governmental
☐ Sole Proprietor	☐ Nonresident alien
☐ Partnership	☐ Estate or trust
☐ Legal Services Corporation	☐ Pharmacy (Non-Corp.)
☐ Tax-exempt	☐ Pharmacy/Funeral Home/Cemetery (Corp.)
☐ Corporation providing or billing medical and/or health care services	☐ Limited Liability Company (select applicable tax classification)
☐ Corporation NOT providing or billing medical and/or health care services	☐ D = disregarded entity ☐ C = corporation ☐ P = partnership

Signature of Authorized Representative: _____

Date:

RETURN WITH BID

STATE OF ILLINOIS

CERTIFICATIONS AND DISCLOSURES

FORMS B

***This Forms B section may be used when responding to an Invitation for Bid (IFB) or a Request for Proposal (RFP) using a current registration in the Illinois Procurement Gateway (IPG).**
If the bidder does not use Forms B, then Forms A shall be submitted with bid.

RETURN WITH BID

STATE OF ILLINOIS
CERTIFICATIONS AND DISCLOSURES

This Forms B may be used when responding to an Invitation for Bid (IFB) or a Request for Proposal (RFP) if the vendor is registered in the Illinois Procurement Gateway (IPG) and has a valid IPG Registration Number.

If a vendor does not have a valid IPG registration number, then the vendor must complete and submit Forms A with their response. Failure to do so may render the submission non-responsive and result in disqualification.

Please read this entire section and provide the requested information as applicable. All parts in Forms B must be completed in full and submitted along with the vendor's response.

1. Certification of Illinois Procurement Gateway Registration

My business has a valid Illinois Procurement Gateway (IPG) registration. The State of Illinois Chief Procurement Office approved the registration and provided the IPG registration number and expiration date disclosed in this Forms B.

To ensure that you have a valid registration in the IPG, search for your business name in the IPG Registered Vendor Directory. If your company does not appear in the search results, then you do not have a valid IPG registration.

IPG Registration #: _____ IPG Expiration Date: _____

2. Certification Timely to this Solicitation or Contract

Vendor certifies it is not barred from having a contract with the State based upon violating the prohibitions related to either submitting/writing specifications or providing assistance to an employee of the State of Illinois by reviewing, drafting, directing, or preparing any invitation for bids, a request for proposal, or request of information, or similar assistance (except as part of a public request for such information). 30 ILCS 500/50-10.5(e), amended by Public Act No. 97-0895 (August 3, 2012). ☐ Yes ☐ No

3. Replacement Certification to IPG Certification #6 (supersedes response in IPG)

If Vendor has been convicted of a felony, Vendor certifies at least five years have passed since the date of completion of the sentence for such felony, unless no person held responsible by a prosecutor's office for the facts upon which the conviction was based continues to have any involvement with the business. Vendor further certifies that it is not barred from being awarded a contract. 30 ILCS 500/50-10. ☐ Yes ☐ No

4. Disclosure of Lobbyist or Agent (Complete only if bid, offer, or contract has an annual value over $50,000)

Is your company or parent entity(ies) represented by or do you or your parent entity(ies) employ a lobbyist required to register under the Lobbyist Registration Act (lobbyist must be registered pursuant to the Act with the Secretary of State) or an agent who has communicated, is communicating, or may communicate with any State/Public University officer or employee concerning the bid or offer? If yes, please identify each lobbyist and agent, including the name and address below. ☐ Yes ☐ No

If yes, please identify each lobbyist and agent, including the name and address below. If you have a lobbyist that does not meet the criteria, then you do not have to disclose the lobbyist's information. Additional rows may be inserted into the table or an attachment may be provided if needed.

RETURN WITH BID

STATE OF ILLINOIS

CERTIFICATIONS AND DISCLOSURES

Name	Address	Relationship to Disclosing Entity

Describe all costs/fees/compensation/reimbursements related to the assistance provided by each representative lobbyist or other agent to obtain this Agency/University contract: _____

5. Disclosure of Current and Pending Contracts

Complete only if: (a) your business is for-profit and (b) the bid, offer, or contract has an annual value over $50,000. Do not complete if you are a not-for-profit entity.

☐ Yes ☐ No. Do you have any contracts, pending contracts, bids, proposals, subcontracts, leases or other ongoing procurement relationships with units of State of Illinois government?

If "Yes", please specify below. Additional rows may be inserted into the table or an attachment in the same format may be provided if needed.

Agency/University	Project Title	Status	Value	Contract Reference/P.O./Illinois Procurement Bulletin #

6. Signature

As of the date signed below, I certify that:

- My business' information and the certifications made in the Illinois Procurement Gateway are truthful and accurate.
- The certifications and disclosures made in this Forms B are truthful and accurate.

This Forms B is signed by an authorized officer or employee on behalf of the bidder, offeror, or vendor pursuant to Sections 50-13 and 50-35 of the Illinois Procurement Code, and the affirmation of the accuracy of the financial disclosures is made under penalty of perjury.

This disclosure information is submitted on behalf of:

Vendor Name: Phone:

Street Address: Email:

City, State, Zip: Vendor Contact:

Signature:_____ Date:

Printed Name:

Title:

RETURN WITH BID

STATE OF ILLINOIS
CERTIFICATIONS AND DISCLOSURES

I certify that:

The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and

I am a U.S. person (including a U.S. resident alien).

- If you are an individual, enter your name and SSN as it appears on your Social Security Card.
- If you are a sole proprietor, enter the owner's name on the name line followed by the name of the business and the owner's SSN or EIN.
- If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's name on the name line and the D/B/A on the business name line and enter the owner's SSN or EIN.
- If the LLC is a corporation or partnership, enter the entity's business name and EIN and for corporations, attach IRS acceptance letter (CP261 or CP277).
- For all other entities, enter the name of the entity as used to apply for the entity's EIN and the EIN.

Name:

Business Name:

Taxpayer Identification Number:

Social Security Number:

or

Employer Identification Number:

Legal Status (check one):

☐ Individual	☐ Governmental
☐ Sole Proprietor	☐ Nonresident alien
☐ Partnership	☐ Estate or trust
☐ Legal Services Corporation	☐ Pharmacy (Non-Corp.)
☐ Tax-exempt	☐ Pharmacy/Funeral Home/Cemetery (Corp.)
☐ Corporation providing or billing medical and/or health care services	☐ Limited Liability Company (select applicable tax classification)
☐ Corporation NOT providing or billing medical and/or health care services	☐ D = disregarded entity ☐ C = corporation ☐ P = partnership

Signature of Authorized Representative: _____

Date:

END 00 41 09

1. PREVAILING WAGE ACT

Contractor shall not pay less than the prevailing rates of wages to all laborers, workmen, and mechanics performing work under this contract, and shall comply with the requirements of the Illinois Wages of Employees on Public Works Act(820 ILCS 130/1-12).

Washington County Prevailing Wage Rates posted on 3/15/2021

						Overtime								
Trade Title	**Rg**	**Type**	**C**	**Base**	**Foreman**	**M-F**	**Sa**	**Su**	**Hol**	**H/W**	**Pension**	**Vac**	**Trng**	**Other Ins**
ASBESTOS ABT-GEN	All	ALL		30.48	30.98	1.5	1.5	2.0	2.0	7.63	19.01	0.00	0.80	
ASBESTOS ABT-MEC	All	BLD		32.00	33.00	1.5	1.5	2.0	2.0	9.00	6.25	0.00	0.50	
BOILERMAKER	All	BLD		39.00	41.50	1.5	1.5	2.0	2.0	7.07	24.52	1.50	1.05	
BRICK MASON	All	BLD		34.38	36.44	1.5	1.5	2.0	2.0	9.50	14.35	0.00	0.88	
CARPENTER	All	ALL		40.37	41.87	1.5	1.5	2.0	2.0	7.72	10.05	0.00	0.65	
CEMENT MASON	All	BLD		30.83	32.33	1.5	1.5	2.0	2.0	9.85	9.16	0.00	0.50	
CEMENT MASON	All	HWY		37.30	38.30	1.5	1.5	2.0	2.0	9.85	13.15	0.00	0.70	
CERAMIC TILE FINISHER	All	BLD		26.99		1.5	1.5	2.0	2.0	8.00	6.98	0.00	0.81	
ELECTRIC PWR EQMT OP	All	ALL	1	45.43		1.5	1.5	2.0	2.0	8.00	12.72	0.00	0.45	
ELECTRIC PWR EQMT OP	All	ALL	2	40.51		1.5	1.5	2.0	2.0	8.00	11.35	0.00	0.40	
ELECTRIC PWR GRNDMAN	All	ALL		33.27		1.5	1.5	2.0	2.0	8.00	9.32	0.00	0.33	
ELECTRIC PWR LINEMAN	All	ALL		57.09	60.98	1.5	1.5	2.0	2.0	8.00	15.98	0.00	0.57	
ELECTRICIAN	NW	ALL		43.04	45.62	1.5	1.5	2.0	2.0	7.99	12.94	0.00	1.19	2.58
ELECTRICIAN	SE	ALL		46.02	48.27	1.5	1.5	2.0	2.0	8.90	14.50	0.00	0.92	
ELECTRONIC SYSTEM TECH	All	BLD		36.43	38.43	1.5	1.5	2.0	2.0	7.98	6.55	0.00	0.40	
ELEVATOR CONSTRUCTOR	All	BLD		51.73	58.20	2.0	2.0	2.0	2.0	15.72	18.41	4.14	0.63	
FLOOR LAYER	All	BLD		35.06	35.81	1.5	1.5	2.0	2.0	7.72	10.05	0.00	0.65	
GLAZIER	All	BLD		36.51	38.51	1.5	1.5	2.0	2.0	6.45	11.45	0.00	0.68	
HEAT/FROST INSULATOR	All	BLD		39.38	40.38	1.5	1.5	2.0	2.0	10.79	13.10	0.00	0.80	
IRON WORKER	All	ALL		34.50	36.50	1.5	1.5	2.0	2.0	10.46	17.00	0.00	0.42	
LABORER	All	ALL		29.98	30.48	1.5	1.5	2.0	2.0	7.63	19.01	0.00	0.80	
MACHINIST	All	BLD		49.68	52.18	1.5	1.5	2.0	2.0	7.93	8.95	1.85	1.47	

MARBLE FINISHER	All	BLD		26.99		1.5	1.5	2.0	2.0	8.00	6.98	0.00	0.81	
MARBLE MASON	All	BLD		32.47	33.97	1.5	1.5	2.0	2.0	8.00	8.00	0.00	0.90	
MILLWRIGHT	All	ALL		40.37	41.87	1.5	1.5	2.0	2.0	7.72	10.05	0.00	0.65	
OPERATING ENGINEER	All	BLD	1	39.85	42.85	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	
OPERATING ENGINEER	All	BLD	2	38.72	42.85	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	
OPERATING ENGINEER	All	BLD	3	34.24	42.85	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	
OPERATING ENGINEER	All	BLD	4	34.30	42.85	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	
OPERATING ENGINEER	All	BLD	5	33.97	42.85	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	
OPERATING ENGINEER	All	BLD	6	42.40	42.85	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	
OPERATING ENGINEER	All	BLD	7	42.70	42.85	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	
OPERATING ENGINEER	All	BLD	8	42.98	42.85	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	
OPERATING ENGINEER	All	BLD	9	40.85	42.85	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	
OPERATING ENGINEER	All	HWY	1	38.35	41.35	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	
OPERATING ENGINEER	All	HWY	2	37.22	41.35	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	
OPERATING ENGINEER	All	HWY	3	32.74	41.35	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	
OPERATING ENGINEER	All	HWY	4	32.80	41.35	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	
OPERATING ENGINEER	All	HWY	5	32.47	41.35	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	
OPERATING ENGINEER	All	HWY	6	40.90	41.35	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	
OPERATING ENGINEER	All	HWY	7	41.20	41.35	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	
OPERATING ENGINEER	All	HWY	8	41.48	41.35	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	
OPERATING ENGINEER	All	HWY	9	39.35	41.35	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	
PAINTER	All	BLD		31.95	33.45	1.5	1.5	2.0	2.0	6.45	12.42	0.00	0.70	
PAINTER	All	HWY		33.15	34.65	1.5	1.5	2.0	2.0	6.45	12.42	0.00	0.70	
PAINTER OVER 30 FT.	All	BLD		32.95	34.45	1.5	1.5	2.0	2.0	6.45	12.42	0.00	0.70	
PAINTER PWR EQMT	All	BLD		32.95	34.45	1.5	1.5	2.0	2.0	6.45	12.42	0.00	0.70	
PAINTER PWR EQMT	All	HWY		34.15	35.65	1.5	1.5	2.0	2.0	6.45	12.42	0.00	0.70	
PILEDRIVER	All	ALL		40.37	41.87	1.5	1.5	2.0	2.0	7.72	10.05	0.00	0.65	
PIPEFITTER	E	BLD		38.50	42.35	1.5	1.5	2.0	2.0	9.57	7.65	0.00	1.00	

PIPEFITTER	W	BLD		40.55	43.05	1.5	1.5	2.0	2.0	10.20	6.30	0.00	1.25	
PLASTERER	All	BLD		30.83	32.33	1.5	1.5	2.0	2.0	9.85	9.16	0.00	0.50	
PLUMBER	E	BLD		38.50	42.35	1.5	1.5	2.0	2.0	9.57	7.65	0.00	1.00	
PLUMBER	W	BLD		40.55	43.05	1.5	1.5	2.0	2.0	10.20	6.30	0.00	1.25	
ROOFER	All	BLD		34.65	36.65	1.5	1.5	2.0	2.0	9.25	9.55	0.00	0.46	
SHEETMETAL WORKER	All	ALL		36.57	38.07	1.5	1.5	2.0	2.0	10.65	9.29	2.19	0.71	1.76
SPRINKLER FITTER	All	BLD		44.80	48.30	2.0	2.0	2.0	2.0	9.63	14.30	0.00	1.10	
TERRAZZO FINISHER	All	BLD		26.99		1.5	1.5	2.0	2.0	8.00	6.98	0.00	0.81	
TERRAZZO MASON	All	BLD		32.47	33.97	1.5	1.5	2.0	2.0	8.00	8.00	0.00	0.90	
TRUCK DRIVER	All	ALL	1	39.04	43.28	1.5	1.5	2.0	2.0	13.52	6.86	0.00	0.25	
TRUCK DRIVER	All	ALL	2	39.60	43.28	1.5	1.5	2.0	2.0	13.52	6.86	0.00	0.25	
TRUCK DRIVER	All	ALL	3	39.91	43.28	1.5	1.5	2.0	2.0	13.52	6.86	0.00	0.25	
TRUCK DRIVER	All	ALL	4	40.25	43.28	1.5	1.5	2.0	2.0	13.52	6.86	0.00	0.25	
TRUCK DRIVER	All	ALL	5	41.33	43.28	1.5	1.5	2.0	2.0	13.52	6.86	0.00	0.25	
TRUCK DRIVER	All	O&C	1	31.23	34.62	1.5	1.5	2.0	2.0	13.52	6.86	0.00	0.25	
TRUCK DRIVER	All	O&C	2	31.68	34.62	1.5	1.5	2.0	2.0	13.52	6.86	0.00	0.25	
TRUCK DRIVER	All	O&C	3	31.93	34.62	1.5	1.5	2.0	2.0	13.52	6.86	0.00	0.25	
TRUCK DRIVER	All	O&C	4	32.20	34.62	1.5	1.5	2.0	2.0	13.52	6.86	0.00	0.25	
OPERATING ENGINEER	All	BLD	7	42.70	42.85	1.5	1.5	2.0	2.0	13.55	18.65	0.00	1.25	

Legend

Rg Region

Type Trade Type - All,Highway,Building,Floating,Oil & Chip,Rivers

C Class

Base Base Wage Rate

OT M-F Unless otherwise noted, OT pay is required for any hour greater than 8 worked each day, Mon through Fri. The number listed is the multiple of the base wage.

OT Sa Overtime pay required for every hour worked on Saturdays

OT Su Overtime pay required for every hour worked on Sundays

OT Hol Overtime pay required for every hour worked on Holidays

H/W Health/Welfare benefit

Vac Vacation

Trng Training

Other Ins Employer hourly cost for any other type(s) of insurance provided for benefit of worker.

Explanations WASHINGTON COUNTY

ELECTRICIANS (NORTHWEST) - Township of Venedy.

PLUMBERS & PIPEFITTERS (WEST) - That part of the county West of a line 2.5 miles East of Rt. 127 including the towns of Posin, Beacoup and New Minden.

PLUMBERS & PIPEFITTERS (EAST) - That part of the county East of a North-South line 2.5 miles East of Rt. 127.

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day and Veterans Day in some classifications/counties. Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration. If in doubt, please check with IDOL.

Oil and chip resealing (O&C) means the application of road oils and liquid asphalt to coat an existing road surface, followed by application of aggregate chips or gravel to coated surface, and subsequent rolling of material to seal the surface.

EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date.

ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

CERAMIC TILE FINISHER AND MARBLE FINISHER

The handling, at the building site, of all sand, cement, tile, marble or stone and all other materials that may be used and installed by [a] tile layer or marble mason. In addition, the grouting, cleaning, sealing, and mixing on the job site, and all other work as required in assisting the setter. The term "Ceramic" is used for naming the classification only and is in no way a limitation of the product handled. Ceramic takes into consideration most hard tiles.

ELECTRONIC SYSTEMS TECHNICIAN

Installation, service and maintenance of low-voltage systems which utilizes the transmission and/or transference of voice, sound, vision, or digital for commercial, education, security and entertainment purposes for the following: TV monitoring and surveillance, background/foreground music, intercom and telephone interconnect, field programming, inventory control systems, microwave transmission, multi-media, multiplex, radio page, school, intercom and sound burglar alarms and low voltage master clock systems.

Excluded from this classification are energy management systems, life safety systems, supervisory controls and data acquisition systems not intrinsic with the above listed systems, fire alarm systems, nurse call systems and raceways exceeding fifteen feet in length.

OPERATING ENGINEER - BUILDING

GROUP I. Cranes, Dragline, Shovels, Skimmer Scoops, Clamshells or Derrick Boats, Pile Drivers, Crane-Type Backhoes, Asphalt Plant Operators, Concrete Plant Operators, Dredges, Asphalt Spreading Machines, All Locomotives, Cable Ways or Tower Machines, Hoists, Hydraulic Backhoes, Ditching Machines or Backfiller, Cherrypickers, Overhead Cranes, Roller - Steam or Gas, Concrete Pavers, Excavators, Concrete Breakers, Concrete Pumps, Bulk Cement Plants, Cement Pumps, Derrick-Type Drills, Boat Operators, Motor Graders or Pushcats, Scoops or Tournapulls, Bulldozers, Endloaders or Fork Lifts, Power Blade or Elevating Graders, Winch Cats, Boom or Winch Trucks or Boom Tractors, Pipe Wrapping or Painting Machines, Asphalt Plant Engineer, Journeyman Lubricating Engineer, Drills (other than Derrick Type), Mud Jacks, or Well Drilling Machines, Boring Machines or Track Jacks, Mixers, Conveyors (Two), Air Compressors (Two), Water Pumps regardless of size (Two), Welding Machines (Two), Siphons or Jets (Two), Winch Heads or Apparatuses (Two), Light Plants (Two), All Tractors regardless of size (straight tractor only), Fireman on Stationary Boilers, Automatic Elevators, Form Grading Machines, Finishing Machines, Power Sub-Grader or Ribbon Machines, Longitudinal Floats, Distributor Operators on Trucks, Winch Heads or Apparatuses (One), Mobil Track air and heaters (two to five), Heavy Equipment Greaser, Relief Operator, Assistant Master Mechanic and Heavy Duty Mechanic, self-propelled concrete saws of all types and sizes with their attachments, gob-hoppers, excavators all sizes, the repair and greasing of all diesel hammers, the operation and set-up of bidwells, water blasters of all sizes and their clutches, hydraulic jacks where used for hoisting, operation of log skidders, iceolators used on and off of pipeline, condor cranes, bow boats, survey boats, bobcats and all their attachments, skid steer loaders and all their attachments, creter cranes, batch plants, operator (all sizes), self propelled roto mills, operation of conveyor systems of any size and any configuration, operation, repair and service of all vibratory hammers, all power pacs and their controls regardless of location, curtains or brush burning machines, stump cutter machines, Nail launchers when mounted on a machine or self-propelled, operation of con-cover machines, and all Operators except those listed below).

GROUP II. Assistant Operators.

GROUP III. Air Compressors (One), Water Pumps, regardless of Size (One), Waterblasters (one), Welding Machine (One), Mixers (One Bag), Conveyor (One), Siphon or Jet (One), Light Plant (One), Heater (One), Immobile Track Air (One), and Self Propelled Walk-Behind Rollers.

GROUP IV. Asphalt Spreader Oilers, Fireman on Whirlies and Heavy Equipment Oilers, Truck Cranes, Dredges, Monigans, Large Cranes - (Over 65-ton rated capacity) Concrete Plant Oiler, Blacktop Plant Oiler, and Creter Crane Oiler (when required).

GROUP V. Oiler.

GROUP VI. Operators on equipment with Booms,including jibs, 100 feet and over, and less than 150 feet long.

GROUP VII. Operators on equipment with Booms, including jibs, 150 feet and over, and less than 200 feet long.

GROUP VIII. Operators on Equipment with Booms, including jibs, 200 feet and over; Tower Cranes; and Whirlie Cranes.

GROUP IX. Master Mechanic

OPERATING ENGINEERS - Highway

GROUP I. Cranes, Dragline, Shovels, Skimmer Scoops, Clamshells or Derrick Boats, Pile Drivers, Crane-Type Backhoes, Asphalt Plant Operators, Concrete Plant Operators, Dredges, Asphalt Spreading Machines, All Locomotives, Cable Ways or Tower Machines, Hoists, Hydraulic Backhoes, Ditching Machines or Backfiller, Cherrypickers, Overhead Cranes, Roller - Steam or Gas, Concrete Pavers, Excavators, Concrete Breakers, Concrete Pumps, Bulk Cement Plants, Cement Pumps, Derrick-Type Drills, Boat Operators, Motor Graders or Pushcats,

Scoops or Tournapulls, Bulldozers, Endloaders or Fork Lifts, Power Blade or Elevating Graders, Winch Cats, Boom or Winch Trucks or Boom Tractors, Pipe Wrapping or Painting Machines, Asphalt Plant Engineer, Journeyman Lubricating Engineer, Drills (other than Derrick Type), Mud Jacks, Well Drilling Machines, Boring Machines, Track Jacks, Mixers, Conveyors (Two), Air Compressors (Two), Water Pumps regardless of size (Two), Welding Machines (Two), Siphons or Jets (Two), Winch Heads or Apparatuses (Two), Light Plants (Two), All Tractors regardless of size (straight tractor only), Fireman on Stationary Boilers, Automatic Elevators, Form Grading Machines, Finishing Machines, Power Sub-Grader or Ribbon Machines, Longitudinal Floats, Distributor Operators on Trucks, Winch Heads or Apparatuses (One), Mobil Track air and heaters (two to five), Heavy Equipment Greaser, Relief Operator, Assistant Master Mechanic and Heavy Duty Mechanic, self-propelled concrete saws of all types and sizes with their attachments, gob-hoppers, excavators all sizes, the repair and greasing of all diesel hammers, the operation and set-up of bidwells, water blasters of all sizes and their clutches, hydraulic jacks where used for hoisting, operation of log skidders, iceolators used on and off of pipeline, condor cranes, bow boats, survey boats, bobcats and all their attachments, skid steer loaders and all their attachments, creter cranes, batch plants, operator (all sizes), self propelled roto mills, operation of conveyor systems of any size and any configuration, operation, repair and service of all vibratory hammers, all power pacs and their controls regardless of location, curtains or brush burning machines, stump cutter machines, Nail launchers when mounted on a machine or self-propelled, operation of con-cover machines, and all Operators (except those listed below).

GROUP II. Assistant Operators.

GROUP III. Air Compressors (One), Water Pumps, regardless of Size (One), Waterblasters (one), Welding Machine (One), Mixers (One Bag), Conveyor (One), Siphon or Jet (One), Light Plant (One), Heater (One), Immobile Track Air (One), and Self Propelled Walk-Behind Rollers.

GROUP IV. Asphalt Spreader Oilers, Fireman on Whirlies and Heavy Equipment Oilers, Truck Cranes, Dredges, Monigans, Large Cranes - (Over 65-ton rated capacity) Concrete Plant Oiler, Blacktop Plant Oiler, and Creter Crane Oiler (when required).

GROUP V. Oiler.

GROUP VI. Operators on equipment with Booms, including jibs, 100 feet and over, and less than 150 feet long.

GROUP VII. Operators on equipment with Booms, including jibs, 150 feet and over, and less than 200 feet long.

GROUP VIII. Operators on Equipment with Booms, including jibs, 200 feet and over; Tower Cranes; and Whirlie Cranes.

GROUP IX. Mechanic

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION Class 1. Drivers on 2 axle trucks hauling less than 9 ton. Air compressor and welding machines and brooms, including those pulled by separate units, truck driver helpers, warehouse employees, mechanic helpers, greasers and tiremen, pickup trucks when hauling materials, tools, or workers to and from and onthe-job site, and fork lifts up to 6,000 lb. capacity.

Class 2. Two or three axle trucks hauling more than 9 ton but hauling less than 16 ton. A-frame winch trucks, hydrolift trucks, vactor trucks or similar equipment when used for transportation purposes. Fork lifts over 6,000 lb. capacity, winch trucks, four axle combination units, and ticket writers.

Class 3. Two, three or four axle trucks hauling 16 ton or more. Drivers on water pulls, articulated dump trucks, mechanics and working forepersons, and dispatchers. Five axle or more combination units.

Class 4. Low Boy and Oil Distributors.

Class 5. Drivers who require special protective clothing while employed on hazardous waste work.
Jurisdiction in Bond, Calhoun, Clinton, Fayette, Greene, Jefferson, Jersey, Macoupin, Madison, Marion, Monroe, Montgomery, Perry, Randolph, St. Clair, and Washington.

TRUCK DRIVER - OIL AND CHIP RESEALING ONLY.

This shall encompass laborers, workers and mechanics who drive contractor or subcontractor owned, leased, or hired pickup, dump, service, or oil distributor trucks. The work includes transporting materials and equipment (including but not limited to, oils, aggregate supplies, parts, machinery and tools) to or from the job site; distributing oil or liquid asphalt and aggregate; stock piling material when in connection with the actual oil and chip contract. The Truck Driver (Oil & Chip Resealing) wage classification does not include supplier delivered materials.

TERRAZZO FINISHER

The handling of all materials used for Mosaic and Terrazzo work including preparing, mixing by hand, by mixing machine or transporting of pre-mixed materials and distributing with shovel, rake, hoe, or pail, all kinds of concrete foundations necessary for Mosaic and Terrazzo work, all cement terrazzo, magnesite terrazzo, Do-O-Tex terrazzo, epoxy matrix ter-razzo, exposed aggregate, rustic or rough washed for exterior or interior of buildings placed either by machine or by hand, and any other kind of mixture of plastics composed of chips or granules when mixed with cement, rubber, neoprene, vinyl, magnesium chloride or any other resinous or chemical substances used for seamless flooring systems, and all other building materials, all similar materials and all precast terrazzo work on jobs, all scratch coat used for Mosaic and Terrazzo work and sub-bed, tar paper and wire mesh (2x2 etc.) or lath. The rubbing, grinding, cleaning and finishing of same either by hand or by machine or by terrazzo resurfacing equipment on new or existing floors. When necessary finishers shall be allowed to assist the mechanics to spread sand bed, lay tarpaper and wire mesh (2x2 etc.) or lath. The finishing of cement floors where additional aggregate of stone is added by spreading or sprinkling on top of the finished base, and troweled or rolled into the finish and then the surface is ground by grinding machines.

Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 217-782-1710 for wage rates or clarifications.

LANDSCAPING

Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape plantsman and landscape laborer is covered by the existing classification of laborer. The work performed by landscape operators (regardless of equipment used or its size) is covered by the classifications of operating engineer. The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the classifications of truck driver.

- On August 7, 2018, IDOL published changes to the HT/Frost Insulator classification in Alexander County, the Sheetmetal Worker classification in Alexander, Bond, Clay, Clinton, Crawford, Edwards, Effingham, Fayette,

Franklin, Gallatin, Greene, Hamilton, Hardin, Jackson, Jasper, Jefferson, Jersey, Johnson, Lawrence, Macoupin, Madison, Marion, Massac, Monroe, Montgomery, Perry, Pope, Pulaski, Randolph, Saline, St. Clair, Union, Wabash, Washington, Wayne, White, and Williamson Counties, and the Iron Worker trade in Richland County.

2. PROJECT LABOR AGREEMENT

Because of the size, duration, and important public purpose to be served by the Project, it is in the public interest to have the Project completed in the most timely, efficient, and orderly manner possible and without labor disputes or disruptions of any kind which might interfere with or delay the Project. Accordingly, the Contractor is required to enter into a Project Labor Agreement with the trade unions which have traditionally performed and have trade and geographic jurisdiction over such work. The Project Labor Agreement will be provided by CDB and executed by each Contractor, known Subcontractor and Trade Union within 10 days following the Notice of Award (NOA) with a copy provided to CDB. The agreement shall provide for, at a minimum, the following:

a. Contracting or subcontracting work to only those firms, persons, companies or entities that have, or agree to be bound by and operate under, for the life of the Project, current collective bargaining agreements with applicable trade unions.
b. No lockout, strikes, picketing or other work stoppage of any nature.
c. Trade unions agree to use their best efforts to prevent any acts described in paragraph 2, or those of a similar nature of effect, or, in the event such an act takes place, to cause an immediate cessation thereof.
d. The right to discharge or discipline an employee who violates the provisions of the agreement.
e. Coverage for the life of the Project.
f. Incorporation of the agreement into subcontracts.
g. Procedures for resolving disputes related to the agreement.

Submission of the executed Project Labor Agreement shall be a post-Award requirement.

END 00 43 43.

Illinois Capital Development Board

PROJECT LABOR AGREEMENT

This Project Labor Agreement ("PLA" or "Agreement") is entered into this 27th day of May, 2020, by and between the Illinois Capital Development Board ("CDB" or "Board") in its proprietary capacity, and each relevant Illinois AFL-CIO Building Trades signatory hereto as determined by the Illinois AFL-CIO Statewide Project Labor Agreement Committee on behalf of each of its affiliated members (individually and collectively, the "Unions"). This PLA shall apply to Construction Work (as defined herein) to be performed by CDB's Prime Contractor(s) and all Subcontractors of whatever tier ("Subcontractor" or "Subcontractors") on Project No. 102-615-016, Department of Natural Resources, Washington County Conservation Area, Replace Sewage Treatment Plant, Washington County, Illinois (hereinafter, the "Project").

ARTICLE 1 - INTENT AND PURPOSES

1.1 This PLA is entered into in accordance with the Project Labor Agreement Act ("Act", 30 ILCS 571). It is mutually understood and agreed that the terms and conditions of this PLA are intended to promote the public interest in obtaining timely and economical completion of the Project by encouraging productive and efficient construction operations; by establishing a spirit of harmony and cooperation among the parties; and by providing for peaceful and prompt settlement of any and all labor grievances or jurisdictional disputes of any kind without strikes, lockouts, slowdowns, delays, or other disruptions to the prosecution of the work. The parties acknowledge the obligations of the Contractors and Subcontractors to comply with the provisions of the Act. The parties will work with the Contractors and Subcontractors within the parameters of other statutory and regulatory requirements to implement the Act's goals and objectives.

1.2 As a condition of the award of the contract for performance of work on the Project, CDB's Prime Contractor(s) and all its Subcontractors shall execute a "Contractor Letter of Assent", in the form attached hereto as Exhibit A, prior to commencing Construction Work on the Project. The Prime Contractor(s) shall submit their Subcontractor's Contractor Letter of Assent to the Board prior to the Subcontractor's performance of Construction Work on the Project. Upon request copies of the applicable collective bargaining agreements will be provided by the appropriate signatory labor organization consistent with this Agreement and at the pre-job conference referenced in Article III, Section 3.1.

1.3 Each Union affiliate and separate local representing workers engaged in Construction Work on the Project in accordance with this PLA are bound to this agreement by the Illinois AFL-CIO Statewide Project Labor Agreement Committee which is the central committee established with full authority to negotiate and sign PLAs with the State on behalf of all respective crafts. Upon their signing the Contractor Letter of Assent, the Prime Contractor(s), each Subcontractor, and the individual Unions shall thereafter be deemed a party to this PLA. No party signatory to this PLA shall contract or subcontract, nor permit any other person, firm, company, or entity to contract or subcontract for the performance of Construction Work for the Project to any person, firm, company, or entity that does not agree in writing to become bound for the term of this Project by the terms of this PLA prior to commencing such work and to the applicable area-wide collective bargaining agreement(s) with the Union(s) signatory hereto.

1.4 It is understood that the Prime Contractor(s) and each Subcontractor will be considered and accepted by the Unions as separate employers for the purposes of collective bargaining, and it is further agreed that the employees working under this PLA shall constitute a bargaining unit separate and distinct from all others. The parties hereto also agree that this PLA shall be applicable solely

with respect to this Project, and shall have no bearing on the interpretation of any other collective bargaining agreement or as to the recognition of any bargaining unit other than for the specific purposes of this Project.

1.5 In the event of a variance or conflict, whether explicit or implicit, between the terms and conditions of this PLA and the provisions of any other applicable national, area, or local collective bargaining agreement, the terms and conditions of this PLA shall supersede and control. For any work performed under the NTL Articles of Agreement, the National Stack/Chimney Agreement, the National Cooling Tower Agreement, the National Agreement of the International Union of Elevator Constructors, and for any instrument calibration work and loop checking performed under the UA/IBEW Joint National Agreement for Instrument and Control Systems Technicians, the preceding sentence shall apply only with respect to Articles I, II, V, VI, and VII.

1.6 Subject to the provisions of paragraph 1.5 of this Article, it is the parties' intent to respect the provisions of any other collective bargaining agreements that may now or hereafter pertain, whether between the Prime Contractor and one or more of the Unions or between a Subcontractor and one or more of the Unions. Accordingly, except and to the extent of any contrary provision set forth in this PLA, the Prime Contractor(s) and all Subcontractors agrees to be bound and abide by the terms of the following in order of precedence: (a) the applicable collective bargaining agreement between the Prime Contractor and one or more of the Unions made signatory hereto; (b) the applicable collective bargaining agreement between a Subcontractor and one or more of the Unions made signatory hereto; or (c) the current applicable area collective bargaining agreement for the relevant Union that is the agreement certified by the Illinois Department of Labor for purposes of establishing the Prevailing Wage applicable to the Project. The Union will provide copies of the applicable collective bargaining agreements pursuant to part (c) of the preceding sentence to the Prime Contractor. Assignments by the Contractors or Subcontractors amongst the trades shall be consistent with area practices; in the event of unresolved disagreements as to the propriety of such assignments, the provisions of Article VI shall apply.

1.7 Subject to the limitations of paragraphs 1.4 to 1.6 of this Article, the terms of each applicable collective bargaining agreement as determined in accordance with paragraph 1.6 are incorporated herein by reference, and the terms of this PLA shall be deemed incorporated into such other applicable collective bargaining agreements only for purposes of their application to the Project.

1.8 To the extent necessary to comply with the requirements of any fringe benefit fund to which the Prime Contractor or Subcontractor is required to contribute under the terms of an applicable collective bargaining agreement pursuant to the preceding paragraph, the Prime Contractor or Subcontractor shall execute all "Participation Agreements" as may be reasonably required by the Union to accomplish such purpose; provided, however, that such Participation Agreements shall, when applicable to the Prime Contractor or Subcontractor solely as a result of this PLA, be amended as reasonably necessary to reflect such fact. Upon written notice in the form of a lien of a Contractor's or Subcontractor's delinquency from any applicable fringe benefit fund, CDB will withhold from the Contractor's periodic pay request an amount sufficient to extinguish any delinquency obligation of the Contractor or Subcontractor arising out of the Project.

1.9 In the event that the applicable collective bargaining agreement between a Prime Contractor and the Union or between the Subcontractor and the Union expires prior to the completion of this Project, the expired applicable contract's terms will be maintained until a new applicable collective bargaining agreement is ratified. The wages and fringe benefits included in any new applicable collective bargaining agreement will apply on and after the effective date of the newly negotiated collective bargaining agreement, except to the extent wage and fringe benefit retroactivity is specifically agreed upon by the relevant bargaining parties.

ARTICLE II — APPLICABILITY, RECOGNITION, AND COMMITMENTS

2.1 The term Construction Work as used herein shall include all "construction, demolition, rehabilitation, renovation, or repair" work performed by a "laborer or mechanic" at the "site of the work" for the purpose of "building" the specific structures and improvements that constitute the Project. Terms appearing within quotation marks in the preceding sentence shall have the meaning ascribed to them pursuant to 29 CFR Part 5 and Illinois labor laws.

2.2 By executing the Letters of Assent, Prime Contractor(s) and all its Subcontractors recognizes the Unions signatory to this PLA as the sole and exclusive bargaining representatives for their craft employees employed on the job-site for this Project. Unions who are signatory to this PLA will have recognition on the Project for their craft.

2.3 The Prime Contractor and all its Subcontractors retains and shall be permitted to exercise full and exclusive authority and responsibility for the management of its operations, except as expressly limited by the terms of this PLA or by the terms and conditions of the applicable collective bargaining agreement.

2.4 Except to the extent contrary to an express provision of the relevant collective bargaining agreement, equipment or materials used in the Project may be pre-assembled or prefabricated, and there shall be no refusal by the Union to handle, transport, install, or connect such equipment or materials. Equipment or materials delivered to the job-site will be unloaded and handled promptly without regard to potential jurisdictional disputes; any such disputes shall be handled in accordance with the provisions of this PLA.

2.5 The parties are mutually committed to promoting a safe working environment for all personnel at the job-site. It shall be the responsibility of each employer to which this PLA applies to provide and maintain safe working conditions for its employees, and to comply with all applicable federal, state, and local health and safety laws and regulations.

2.6 The use or furnishing of alcohol or drugs and the conduct of any other illegal activity at the job-site is strictly prohibited. The parties shall take every practical measure consistent with the terms of applicable collective bargaining agreements to ensure that the job-site is free of alcohol and drugs.

2.7 All parties to this PLA agree that they will not discriminate against any employee based on race, creed, religion, color, national origin, Union activity, age, gender or sexual orientation and shall comply with all applicable federal, state, and local laws.

2.8 In accordance with the Act and to promote diversity in employment, CDB will establish, in cooperation with other parties, the apprenticeship hours which are to be performed by minorities and females on the Project. CDB shall consider the total hours to be performed by these underrepresented groups, as a percentage of the workforce, and create aspirational goals for each Project, based on the level of underutilization for the service area of the Project**.** Pursuant to the Project Labor Agreement Act (30 ILCS 571) CDB shall provide a quarterly report to the Illinois Department of Labor regarding the racial and gender composition of the workforce on the Project.

Consistent with the Project Labor Agreement Act (30 ILCS 571) and the aspirational apprenticeship goals in the Illinois Works Jobs Program Act (30 ILCS 559), the parties agree that all Prime Contractors and Subcontractors working on the Project shall be encouraged to utilize the maximum number of apprentices as permitted under the terms of the applicable collective bargaining

agreements.

The Unions shall assist the Prime Contractors and each Subcontractor in efforts to satisfy the aspirational goals. The application of this section shall be consistent with all local Union collective bargaining agreements, and the hiring hall rules and regulations established for the hiring of personnel, as well as the apprenticeship standards set forth by each individual Union.

2.9 The parties hereto agree that engineering/architectural/surveying consultants' materials testing employees are subject to the terms of this PLA for Construction Work performed for a Contractor or Subcontractor on this Project. These workers shall be fully expected to objectively and responsibly perform their duties and obligations owed to the Board without regard to the potential Union affiliation of such employees or of other employees on the Project.

ARTICLE III - ADMINISTRATION OF AGREEMENT

3.1 In order to assure that all parties have a clear understanding of the PLA, and to promote harmony, at the request of the Unions a post-award pre-job conference will be held among the Prime Contractor(s), all Subcontractors and Union representatives prior to the start of any Construction Work on the Project. No later than the conclusion of such pre-job conference, the parties shall, among other matters, provide to one another contact information for their respective representatives (including name, address, phone number, facsimile number, e- mail). Nothing herein shall be construed to limit the right of the Board to discuss or explain the purpose and intent of this PLA with prospective bidders or other interested parties prior to or following its award of the job.

3.2 Representatives of the Prime Contractor and the Unions shall meet as often as reasonably necessary following award until completion of the Project to assure the effective implementation of this PLA.

3.3 Any notice contemplated under Article VI and VII of this Agreement to a signatory labor organization shall be made in writing to the Local Union with copies to the local Union's International Representative.

ARTICLE IV - HOURS OF WORK AND GENERAL CONDITIONS

4.1 The standard work day and work week for Construction Work on the Project shall be consistent with the respective collective bargaining agreements. In the event Project site or other job conditions dictate a change in the established starting time and/or a staggered lunch period for portions of the Project or for specific crafts, the CDB**,** the Prime Contractor, relevant Subcontractors and business managers of the specific crafts involved shall confer and mutually agree to such changes as appropriate. If proposed work schedule changes cannot be mutually agreed upon between the parties, the hours fixed at the time of the pre-job meeting shall prevail.

4.2 Shift work may be established and directed by the Prime Contractor or relevant Subcontractor as reasonably necessary or appropriate to fulfill the terms of its contract with the Board. If used, shift hours, rates and conditions shall be as provided in the applicable collective bargaining agreement.

4.3 The parties agree that chronic and/or unexcused absenteeism is undesirable and must be controlled in accordance with procedures established by the applicable collective bargaining agreement. Any employee disciplined for absenteeism in accordance with such procedures shall be suspended from all work on the Project for not less than the maximum period permitted under the applicable collective bargaining agreement.

4.4 Except as may be otherwise expressly provided by the applicable collective bargaining agreement, employment begins and ends at the Project site; employees shall be at their place of work at the starting time; and employees shall remain at their place of work until quitting time.

4.5 Except as may be otherwise expressly provided by the applicable collective bargaining agreement, there shall be no limit on production by workmen, no restrictions on the full use of tools or equipment, and no restrictions on efficient use of manpower or techniques of construction other than as may be required by safety regulations.

4.6 The parties recognize that specialized or unusual equipment may be installed on the Project. In such cases, the Union recognizes the right of the Prime Contractor or Subcontractor to involve the equipment supplier or vendor's personnel in supervising the setting up of the equipment, making modifications and final alignment, and performing similar activities that may be reasonably necessary prior to and during the start-up procedure in order to protect factory warranties. The Prime Contractor or Subcontractor shall notify the Union representatives in advance of any work at the job-site by such vendor personnel in order to promote a harmonious relationship between the equipment vendor's personnel and other Project employees.

4.7 For the purpose of promoting full and effective implementation of this PLA, authorized Union representatives shall have access to the Project job-site during scheduled work hours. Such access shall be conditioned upon adherence to all reasonable visitor and security rules of general applicability that may be established for the Project site at the pre-job conference or from time to time thereafter.

ARTICLE V — GRIEVANCE PROCEDURES FOR DISPUTES ARISING UNDER A PARTICULAR COLLECTIVE BARGAINING AGREEMENT

5.1 In the event a dispute arises under a particular collective bargaining agreement specifically not including jurisdictional disputes referenced in Article VI below, said dispute shall be resolved by the Grievance/Arbitration procedure of the applicable collective bargaining agreement. The resulting determination from this process shall be final and binding on all parties bound to its process.

5.2 Employers covered under this Agreement shall have the right to discharge or discipline any employee who violates the provisions of this Agreement. Such discharge or discipline by a contractor or subcontractor shall be subject to Grievance/Arbitration procedure of the applicable collective bargaining agreement only as to the fact of such violation of this agreement. If such fact is established, the penalty imposed shall not be disturbed. Work at the Project site shall continue without disruption or hindrance of any kind as a result of a Grievance/Arbitration procedure under this Article.

5.3 In the event there is a deadlock in the foregoing procedure, the parties agree that the matter shall be submitted to arbitration for the selection and decision of an Arbitrator governed under paragraph 6.8.

ARTICLE VI —DISPUTES: GENERAL PRINCIPLES

6.1 This Agreement is entered into to prevent strikes, lost time, lockouts and to facilitate the peaceful adjustment of jurisdictional disputes in the building and construction industry and to prevent waste and unnecessary avoidable delays and expense, and for the further purpose of at all times securing for the employer sufficient skilled workers.

6.2 A panel of Permanent Arbitrators are attached as Exhibit (B) to this agreement. By mutual agreement between CDB and the Unions, the parties can open this section of the agreement as needed to make changes to the list of permanent arbitrators.

6.3 The PLA Jurisdictional Dispute Resolution Process ("Process") sets forth the procedures below to resolve jurisdictional disputes between and among Contractors, Subcontractors, and Unions engaged in the building and construction industry. Further, the Process will be followed for any grievance or dispute arising out of the interpretation or application of this PLA by the parties except for the prohibition on attorneys contained in 6.11. All decisions made through the Process are final and binding upon all parties.

DISPUTE PROCESS

6.4 Administrative functions under the Process shall be performed through the offices of the President and/or Secretary-Treasurer of the Illinois AFL-CIO, or their designated representative, called the Administrator. In no event shall any officer, employee, agent, attorney, or other representative of the Illinois AFL-CIO be subject to any subpoena to appear or testify at any jurisdictional dispute hearing.

6.5 There shall be no abandonment of work during any case participating in this Process or in violation of the arbitration decision. All parties to this Process release the Illinois AFL-CIO from any liability arising from its action or inaction and covenant not to sue the Illinois AFL-CIO, nor its officers, employees, agents or attorneys.

6.6 In the event of a dispute relating to trade or work jurisdiction, all parties, including the employers, Contractors or Subcontractors, agree that a final and binding resolution of the dispute shall be resolved as follows:

(a) Representatives of the affected trades and the Contractor or Subcontractor shall meet on the job-site within two (2) business days after receiving written notice in an effort to resolve the dispute. (In the event there is a dispute between local Unions affiliated with the same International Union, the decision of the General President, or his/her designee, as the internal jurisdictional authority of that International Union, shall constitute a final and binding decision and determination as to the jurisdiction of work.)

(b) If no settlement is achieved subsequent to the preceding Paragraph, the matter shall be referred to the local area Building & Construction Trades Council, which shall meet with the affected trades within two (2) business days subsequent to receiving written notice. In the event the parties do not wish to avail themselves of the local Building & Construction Trades Council, the parties may elect to invoke the services of their respective International Representatives with no extension of the time limitations. An agreement reached at this Step shall be final and binding upon all parties.

(c) If no settlement agreement is reached during the proceedings contemplated by Paragraphs "a" or "b" above, the matter shall be immediately referred to the Illinois Jurisdictional Dispute Process for final and binding resolution of said dispute. Said referral submission shall be in writing and served upon the Illinois AFL-CIO, or the Administrator, pursuant to paragraph 6.4 of this agreement. The Administrator shall, within three (3) days, provide for the selection of an available Arbitrator to hear said dispute within this time period. Upon good cause shown and determined by the Administrator, an additional three (3) day extension for said hearing shall be

granted at the sole discretion of the Administrator. Only upon mutual agreement of all parties may the Administrator extend the hearing for a period in excess of the time frames contemplated under this Paragraph. Business days are defined as Monday through Friday, excluding contract holidays.

6.7 The primary concern of the Process shall be the adjustment of jurisdictional disputes arising out of the Project. A sufficient number of Arbitrators shall be selected from list of approved Arbitrators as referenced Sec. 6.2 and shall be assigned per Sec. 6.8. Decisions shall be only for the Project and shall become effective immediately upon issuance and complied with by all parties. The authority of the Arbitrator shall be restricted and limited specifically to the terms and provisions of Article VI and generally to this Agreement as a whole.

6.8 The Arbitrator chosen shall be randomly selected based on the list of Arbitrators in Sec.6.2 and geographical location of the jurisdictional dispute and upon his/her availability, and ability to conduct a Hearing within two (2) business days of said notice. The Arbitrator may issue a "bench" decision immediately following the Hearing or he/she may elect to only issue a written decision, said decision must be issued within two (2) business days subsequent to the completion of the Hearing. Copies of all notices, pleadings, supporting memoranda, decisions, etc. shall be provided to all disputing parties and the Illinois State Federation of Labor.

Any written decision shall be in accordance with this Process and shall be final and binding upon all parties to the dispute and may be a "short form" decision. Fees and costs of the arbitrator shall be divided evenly between the contesting parties except that any party wishing a full opinion and decision beyond the short form decision shall bear the reasonable fees and costs of such full opinion. The decision of the Arbitrator shall be final and binding upon the parties hereto, their members, and affiliates.

In cases of jurisdictional disputes or other disputes between a signatory labor organization and another labor organization, both of which is an affiliate or member of the same International Union, the matter or dispute shall be settled in the manner set forth by their International Constitution and/or as determined by the International Union's General President whose decision shall be final and binding upon all parties. In no event shall there be an abandonment of work.

6.9 In rendering a decision, the Arbitrator shall determine:

(a) First, whether a previous agreement of record or applicable agreement, including a disclaimer agreement, between National or International Unions to the dispute or agreements between local Unions involved in the dispute, governs;

(b) Only if the Arbitrator finds that the dispute is not covered by an appropriate or applicable agreement of record or agreement between the crafts to the dispute, he shall then consider the established trade practice in the industry and prevailing practice in the locality. Where there is a previous decision of record governing the case, the Arbitrator shall give equal weight to such decision of record, unless the prevailing practice in the locality in the past ten years favors one craft. In that case, the Arbitrator shall base his decision on the prevailing practice in the locality. Except, that if the Arbitrator finds that a craft has improperly obtained the prevailing practice in the locality through raiding, the undercutting of wages or by the use of vertical agreements, the Arbitrator shall rely on the decision of record and established trade practice in the industry rather than the prevailing practice in the locality; and,

(c) Only if none of the above criteria is found to exist, the Arbitrator shall then consider that because efficiency, cost or continuity and good management are essential to the well being of the

industry, the interests of the consumer or the past practices of the employer shall not be ignored.

6.10 The Arbitrator shall set forth the basis for his/her decision and shall explain his/her findings regarding the applicability of the above criteria. If lower ranked criteria are relied upon, the Arbitrator shall explain why the higher-ranked criteria were not deemed applicable. The Arbitrator's decision shall only apply to the Project. Agreements of Record, for other PLA projects, are applicable only to those parties signatory to such agreements. Decisions of Record are those that were either attested to by the former Impartial Jurisdictional Disputes Board or adopted by the National Arbitration Panel.

6.11 All interested parties, as determined by the Arbitrator, shall be entitled to make presentations to the Arbitrator. Any interested labor organization affiliated to the PLA Committee and party present at the Hearing, whether making a presentation or not, by such presence shall be deemed to accept the jurisdiction of the Arbitrator and to agree to be bound by its decision. In addition to the representative of the local labor organization, a representative of the labor organization's International Union may appear on behalf of the parties. Each party is responsible for arranging for its witnesses. In the event an Arbitrator's subpoena is required, the party requiring said subpoena shall prepare the subpoena for the Arbitrator to execute. Service of the subpoena upon any witness shall be the responsibility of the issuing party. Attorneys shall not be permitted to attend or participate in any portion of a Hearing. The parties are encouraged to determine, prior to Hearing, documentary evidence which may be presented to the Arbitrator on a joint basis.

6.12 The Order of Presentation in all Hearings before an Arbitrator shall be

I. Identification and Stipulation of the Parties
II. Unions(s) claiming the disputed work presents its case
III. Union(s) assigned the disputed work presents its case
IV. Employer assigning the disputed work presents its case
V. Evidence from other interested parties (i.e., general contractor, project manager, owner)
VI. Rebuttal by Union(s) claiming the disputed work
VII. Additional submissions permitted and requested by Arbitrator
VIII. Closing arguments by the parties

6.13 All parties bound to the provisions of this Process hereby release the Illinois AFL-CIO and CDB, their respective officers, agents, employees or designated representatives, specifically including any Arbitrator participating in said Process, from any and all liability or claim, of whatsoever nature, and specifically incorporating the protections provided in the Illinois Arbitration Act, as amended from time to time.

6.14 Neither the Process, as an arbitration panel, nor its Administrator, shall have any authority to undertake any action to enforce its decision(s). Rather, it shall be the responsibility of the prevailing party to seek appropriate enforcement of a decision, including findings, orders or awards of the Arbitrator or Administrator determining non-compliance with a prior award or decision.

6.15 If at any time there is a question as to the jurisdiction of the Illinois Jurisdictional Dispute Resolution Process, the primary responsibility for any determination of the arbitrability of a dispute and the jurisdiction of the Arbitrator shall be borne by the party requesting the Arbitrator to hear the underlying jurisdictional dispute. The affected party or parties may proceed before the Arbitrator even in the absence or one or more stipulated parties with the issue of jurisdiction as an additional item to be decided by the Arbitrator. The Administrator may participate in proceedings seeking a declaration or determination that the underlying dispute is subject to the jurisdiction and process of the Illinois Jurisdictional Dispute Resolution Process. In any such proceedings, the non-prevailing

party and/or the party challenging the jurisdiction of the Illinois Jurisdictional Dispute Resolution Process shall bear all the costs, expenses and attorneys' fees incurred by the Illinois Jurisdictional Dispute Resolution Process and/or its Administrator in establishing its jurisdiction.

ARTICLE VII - WORK STOPPAGES AND LOCKOUTS

7.1 During the term of this PLA, no Union or any of its members, officers, stewards, employees, agents or representatives shall instigate, support, sanction, maintain, or participate in any strike, picketing, walkout, work stoppage, slow down or other activity that interferes with the routine and timely prosecution of work at the Project site or at any other contractor's or supplier's facility that is necessary to performance of work at the Project site. Hand billing at the Project site during the designated lunch period and before commencement or following conclusion of the established standard workday shall not, in itself, be deemed an activity that interferes with the routine and timely prosecution of work on the Project.

7.2 Should any activity prohibited by paragraph 7.1 of this Article occur, the Union shall undertake all steps reasonably necessary to promptly end such prohibited activities.

(a) No Union complying with its obligations under this Article shall be liable for acts of employees for which it has no responsibility or for the unauthorized acts of employees it represents. Any employee who participates or encourages any activity prohibited by paragraph 7.1 shall be immediately suspended from all work on the Project for a period equal to the greater of (a) 60 days; or (b) the maximum disciplinary period allowed under the applicable collective bargaining agreement for engaging in comparable unauthorized or prohibited activity.

(b) Neither the PLA Committee nor its affiliates shall be liable for acts of employees for which it has no responsibility. The principal officer or officers of the PLA Committee will immediately instruct, order and use the best efforts of his office to cause the affiliated Union or Unions to cease any violations of this Article. The PLA Committee in its compliance with this obligation shall not liable for acts of its affiliates. The principal officer or officers of any involved affiliate will immediately instruct, order or use the best effort of his office to cause the employees the Union represents to cease any violations of this Article. A Union complying with this obligation shall not be liable for unauthorized acts of employees it represents. The failure of the Contractor to exercise its rights in any instance shall not be deemed a waiver of its rights in any other instance. During the term of this PLA, the Prime Contractor and its Subcontractors shall not engage in any lockout at the Project site of employees covered by this Agreement.

7.3 Upon notification of violations of this Article, the principal officer or officers of the local area Building and Construction Trades Council, and the Illinois AFL-CIO Statewide Project Labor Agreement Committee as appropriate, will immediately instruct, order and use their best efforts to cause the affiliated Union or Unions to cease any violations of this Article. A Trades Council and the Committee otherwise in compliance with the obligations under this paragraph shall not be liable for unauthorized acts of its affiliates.

7.4 In the event that activities in violation of this Article are not immediately halted through the efforts of the parties, any aggrieved party may invoke the special arbitration provisions set forth in paragraph 7.5 of this Article.

7.5 Upon written notice to the other involved parties by the most expeditious means available, any aggrieved party may institute the following special arbitration procedure when a breech of this Article is alleged:

(a) The party invoking this procedure shall notify the individual designated as the Permanent Arbitrator pursuant to paragraph 6.8 of the nature of the alleged violation; such notice shall be by the most expeditious means possible. The initiating party may also furnish such additional factual information as may be reasonably necessary for the Permanent Arbitrator to understand the relevant circumstances. Copies of any written materials provided to the arbitrator shall also be contemporaneously provided by the most expeditious means possible to the party alleged to be in violation and to all other involved parties.

(b) Upon receipt of said notice the Permanent Arbitrator shall set and hold a hearing within twenty-four (24) hours if it is contended the violation is ongoing, but not before twenty-four (24) hours after the written notice to all parties involved as required above.

(c) The Permanent Arbitrator shall notify the parties by facsimile or any other effective written means, of the place and time chosen by the Permanent Arbitrator for this hearing. Said hearing shall be completed in one session. A failure of any party or parties to attend said hearing shall not delay the hearing of evidence or issuance of an Award by the Permanent Arbitrator.

(d) The sole issue at the hearing shall be whether a violation of this Article has, in fact, occurred. An Award shall be issued in writing within three (3) hours after the close of the hearing, and may be issued without a written opinion. If any party desires a written opinion, one shall be issued within fifteen (15) days, but its issuance shall not delay compliance with, or enforcement of, the Award. The Permanent Arbitrator may order cessation of the violation of this Article, and such Award shall be served on all parties by hand or registered mail upon issuance.

(e) Such Award may be enforced by any court of competent jurisdiction upon the filing of the Award and such other relevant documents as may be required. Facsimile or other hardcopy written notice of the filing of such enforcement proceedings shall be given to the other relevant parties. In a proceeding to obtain a temporary order enforcing the Permanent Arbitrator's Award as issued under this Article, all parties waive the right to a hearing and agree that such proceedings may be ex parte. Such agreement does not waive any party's right to participate in a hearing for a final order of enforcement. The Court's order or orders enforcing the Permanent Arbitrator's Award shall be served on all parties by hand or by delivery to their last known address or by registered mail.

7.6 Individuals found to have violated the provisions of this Article are subject to immediate termination. In addition, CDB reserves the right to terminate this PLA as to any party found to have violated the provisions of this Article.

7.7 Any rights created by statue or law governing arbitration proceedings inconsistent with the above procedure or which interfere with compliance therewith are hereby waived by parties to whom they accrue.

7.8 The fees and expenses of the Permanent Arbitrator shall be borne by the party or parties found in violation, or in the event no violation is found, such fees and expenses shall be borne by the moving party.

ARTICLE VIII — TERMS OF AGREEMENT

8.1 If any Article or provision of this Agreement shall be declared invalid, inoperative or unenforceable by operation of law or by any of the above mentioned tribunals of competent jurisdiction, the remainder of this Agreement or the application of such Article or provision to persons or

circumstances other than those as to which it has been held invalid, inoperative or unenforceable shall not be affected thereby.

8.2 This Agreement shall be in full force as of and from the date of the Authorization to Proceed until the Project contract is closed.

8.3 This PLA may not be changed or modified except by the subsequent written agreement of the parties. All parties represent that they have the full legal authority to enter into this PLA. This PLA may be executed by the parties in one or more counterparts.

8.4 Any liability arising out of this PLA shall be severable and not joint. CDB shall not be liable to any person or other party for any violation of this PLA by any other party, and no Contractor or Union shall be liable for any violation of this PLA by any other Contractor or Union.

8.5 The failure or refusal of a party to exercise its rights hereunder in one or more instances shall not be deemed a waiver of any such rights in respect of a separate instance of the same or similar nature.

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Execution Page

Illinois Capital Development Board

Jim Underwood, Executive Director

Illinois AFL-CIO Statewide Project Labor Agreement Committee, representing the Unions listed below:

List Unions:

Jim Allen
Bricklayers

William P. Meyers Jr.
United Association

*
Ed Christensen
Elevator Constructors

Ryan Anderson
IUPAT

Pat Gleason
Teamsters

Terrence Healy
LIUNA

David Beard
Iron Workers

Patrick J. LaCassa
OPCMIA

William Mangin
Heat & Frost Insulators & Allied Workers

Richard Mathis
Roofers

Paul Noble
IBEW

Marshall Douglas
IUOE

Gary Perinar Jr.
Carpenters

Daniel M. Ahern
Sheet Metal Workers

Eric S. Davis
Boilermakers

*Elevator Constructors master agreement language must be attached to PLA

Exhibit A - Contractor Letter of Assent

(Date)_____

To All Parties:

In accordance with the terms and conditions of the contract(s) for Construction Work on Project No. 102-615-016, this Letter of Assent hereby confirms that the undersigned Prime Contractor or Subcontractor agrees to be bound by the terms and conditions of the Project Labor Agreement established and entered into by the Illinois Capital Development Board in connection with said Project.

It is the understanding and intent of the undersigned party that this Project Labor Agreement shall pertain only to the identified Project. In the event it is necessary for the undersigned party to become signatory to a collective bargaining agreement to which it is not otherwise a party in order that it may lawfully make certain required contributions to applicable fringe benefit funds, the undersigned party hereby expressly conditions its acceptance of and limits its participation in such collective bargaining agreement to its work on the Project.

_____
(Authorized Company Officer)

_____
(Company)

1. ILLINOIS WORKS APPRENTICESHIP INITIATIVE

The Contractor shall comply with the requirements of the Apprenticeship Initiative in the Illinois Works Jobs Program Act (30 ILCS 559/20-20).

2. REQUIREMENTS

The Illinois Works Jobs Program Act requires that apprentices perform either 10% of the actual total labor hours worked in each prevailing wage classification or 10% of the estimated labor hours in each prevailing wage classification, whichever is less.

CDB has determined that the following option is applicable to this project:

☒ The project has received $500,000 or more of appropriated capital funds:

☒ The State's contribution to the project amount is 50% or more of the total estimated cost for the public works project, and therefore the 10% apprenticeship goal applies to all prevailing wage eligible work performed by the contractors and subcontractors on the public works project.

☐ The State's contribution to the project is less than 50% of the total estimated cost for the public works project, and therefore the 10% apprenticeship goal applies only to prevailing wage eligible work being funded by state funds.

☐ The project has received less than $500,000 of appropriated capital funds, but the estimated total project cost is $500,000 or more:

☐ The State's contribution represents 50% or more of the total cost, therefore the 10% apprenticeship goal applies to all prevailing wage eligible work performed by the contractors and subcontractors on the project.

☐ The State's contribution represents less than 50% of the total cost, therefore the 10% apprenticeship goal does not apply.

☐ The estimated total project cost is less than $500,000:

☐ The 10% apprenticeship goal does not apply.

3. BUDGET SUPPLEMENT

Completion of the Illinois Works Jobs Program Act Apprenticeship Initiative Budget Supplement shall be a post-award requirement. Special consideration should be made by the contractor to provide a complete and thorough estimate of all the project labor hours for the project. Total labor hours should be listed by prevailing wage category.

4. REQUEST FOR WAIVER

   If the Contractor learns that the required number of apprentice hours for a prevailing wage category cannot be fulfilled, a request for a reduction or waiver of the goal shall be completed and submitted. This request can be made at any time during the duration of the project. Supporting documentation verifying the situation may be required.

5. ONGOING PROJECT REPORTING

   The Contractor shall submit monthly reports of its hourly workforce utilization including all apprenticeship hours to CDB's Office of Fair Employment Practices on Illinois Works Apprenticeship Initiative Reporting Form.

6. CERTIFICATION OF COMPLIANCE

   Upon completion of the work set forth in the contract, the Contractor must submit a certification demonstrating that it has met the 10% apprenticeship goal or received a reduction or waiver of the 10% apprenticeship goal for each prevailing wage classification.

Forms related to compliance with the Illinois Works Apprenticeship Initiative are available in the reference library located on CDB's website.

END 00 43 44

1. **STANDARD DOCUMENTS FOR CONSTRUCTION**: CDB's 2009 edition of the Standard Documents for Construction (SDC) and the Supplement to Standard Documents for Construction (Section 01 11 01) shall apply to this project.

2. **GENERAL PROJECT INFORMATION**:

   A. **DESCRIPTION: The project consists of construction of a wastewater treatment plant, installation of low pressure seepage field and demolition of the existing wastewater treatment plant.**

   B. **EXISTING CONDITIONS: The existing wastewater treatment plant will be out of service prior to construction.**

   C. **RELATED WORK**

      1. **WORK BY OTHERS: N/A**

      2. **FUTURE WORK: N/A**

3. **CONTRACT TIME**: Refer to Articles 00 72 10 and 01 32 00 of the Standard Documents for Construction.

   SPECIAL NOTICE - DEADLINE FOR COMPLETION. Due to the active nearby campground, the Contractor will not be allowed to begin construction on-site any earlier than November 1, 2021 unless prior written approval is granted from the Using Agency. Contractor shall complete all work through Substantial Completion in accord with the contract no later than March 31, 2022. The contractor shall complete all work in accordance with the contract (Final Acceptance) within 30 consecutive calendar days from the date of Substantial Completion.

4. **CONTRACT(S)**. Construct project under single general contract. All work shown on the bidding documents is the responsibility of the contractor, regardless of the trade or specialty involved.

5. **PRE-BID CONFERENCE**. The pre-bid meeting will be as indicated in 00 11 13. Bidders are strongly urged to attend this meeting. See SDC 00 21 10 and 00 25 00.

6. **CONSTRUCTION ADMINISTRATION FEE**: A construction administration fee (CAF) is applicable to each contract in accordance with Article 00 21 40 of the Standard Documents for Construction:

   Each trade will be assessed three percent (3%) of their awarded contract (base bid plus any awarded alternates). The assessed amount will be included in the Notice of Award Letter. Bidders shall include an allowance for the CAF assessment in their bid.

7. **BID SECURITY**: Bid security must be submitted with each bid equal to 10% of the base bid and must be in the form of a CDB bid bond, certified check, cashier's check or bank draft. Refer to Article 00 43 13 of the Standard Documents for Construction.

8. **BUILDERS RISK INSURANCE, DESIGNATED PURCHASER**. General contractor shall purchase and maintain builder's risk insurance in accord with Article 00 73 19 of the Standard Documents for Construction.

9. **PROCUREMENT OF DOMESTIC PRODUCTS ACT.**

A. The Procurement of Domestic Products Act, 30 ILCS 517/30, requires each purchasing agency making purchases of procured products to promote the purchase of and give preference to manufactured articles, materials, and supplies that have been manufactured in the United States.

B. “Manufactured in the United States" means, in the case of assembled articles, materials, or supplies, that design, final assembly, processing, packaging, testing, or other process that adds value, quality, or reliability occurs in the United States.

C. As the A/E of Record, our determination is the promotion and preferences required are being applied to this project. Bidder may request preference on document 00 41 00 – Bid Form.

10. **VALUE MANAGEMENT.** The value management program is applicable to this project.

END 01 11 00.

The Standard Documents for Construction and Standard Documents for Construction for Projects with a Construction Manager are hereby changed. The following articles replace those in the 2006 and 2009 editions. All other articles remain applicable. **General revision: any reference to "MBE/FBE" shall mean "MBE/WBE/PBE/VBE."**

00 21 05 PREQUALIFICATON

1. **Single Prime Delivery Method Projects.** The protected subcontractors, as identified on Document 00 41 00 bid form, shall be prequalified with CDB under the same requirements listed in 00 21 05 .1 -.6 for the bidder.

00 21 50 WORK WITH OWN STAFF

1. **General.** For Single Prime Delivery Method Projects: The Prime Bidding Contractor and the designated protected subcontractors shall perform the work at the site employing not less than the following amount of its own forces. For purposes of this Article, the work includes direct labor and supervision, as well as material purchases where the material is installed by the Prime Bidding Contractor/Protected Subcontractors.

   A. When General Trade is the Prime Bidding Trade: The General trade shall perform 20% of the following amount: total value of awarded amount less total value of designated protected trade work identified on the bid form, and less the cost of CAF, insurance and bonds.
   Each designated protected trade work: 40% of the value of the respective designated protected trade work identified on the bid form.

   B. When a trade other than the General is the Prime Bidding Trade: the Prime Bidding Trade shall do 40% of the following amount: total value of awarded amount less total value of designated protected trade work identified on the bid form, and less the cost of CAF, insurance and bonds. Each designated protected trade work: 20% of the value of the General Trade work, and 40% of the value of the remaining respective designated protected trade work identified on the bid form.

2. **Subcontractors and Suppliers**

   A. **Subcontract/Supplier Disclosure.** The Contractor shall submit with his/her bid the names and CDB issued identification (ID) numbers (prequalification ID number or registration ID number), if known, of all first tier subcontractors and suppliers with a subcontract value greater than $50,000 to be utilized by the Contractor in the performance of this contract and any lower tier subcontractor/supplier with a subcontract value greater than $50,000 and where the subcontractor/supplier is either named in the specifications or is one over whom the Contractor retains the right to approve and/or make payments for work. The subcontract shall include reference for compliance with

Illinois Procurement Code 30 ILCS 500/20-120. Financial and Conflict of Interest disclosures and standard certifications for each subcontractor over $50,000 must be submitted to CDB by the contractor within 20 days of the execution of a contract with CDB or 20 days of the execution of the subcontract, whichever is later. The Contractor shall promptly notify the State in writing of any additional or substitute subcontractors meeting the above criteria hired during the term of this contract (names, addresses, expected contract amount and CDB ID nos.). Upon request by the CPO, the Contractor shall provide CDB a copy of each subcontractor's subcontract. No work can be performed by these subcontractors until the Certifications and Disclosures have been reviewed and approved by the State Purchasing Officer.

00 21 55 USE OF ILLINOIS LABOR

1. The Employment of Illinois Workers on Public Works Act mandates that during a period of excessive unemployment at least 90% of the total labor hours on State construction projects must be performed by persons who have resided in Illinois for at least thirty (30) days and intend to become or remain Illinois residents. (30 ILCS 570/3). 'A period of excessive unemployment' means any month immediately following two (2) consecutive calendar months during which the level of unemployment in the State of Illinois has exceeded 5% as measured by the United States Bureau of Labor Statistics in its monthly publication of employment and unemployment figures. (30 ILCS 570/1).

2. Contractors are required to incorporate the above provisions into all subcontracts for subcontractors who will have workers at the project site.

3. To verify that this requirement is being met, contractors must submit Certified Payroll forms for themselves and their subcontractors each month for the duration of the contract/subcontract.

    A. The Certified Payroll form(s) must include the name and address of each worker on the project site during the time period covered by the form.

    B. For subcontractors, the contractor will include the beginning and ending dates of the subcontract on the Certified Payroll form.

    C. If Certified Payroll forms are not submitted timely, payment may be reduced or withheld until Certified Payroll submittals are brought up to date.

00 43 30 BUY ILLINOIS PROGRAM

1. **General.** The Buy Illinois Program encourages contractors to incorporate products manufactured, fabricated or assembled in the State of Illinois. It is a voluntary program; there is no incentive provision affecting the award of the contract nor is there a required percent of the contract that must be Illinois products.

2. Illinois products will be indicated in the project manual with (IL) preceding the item in the specification paragraph. Typically, only specifications that are prescriptive, those listing three or more manufacturers, will be in the program. Contractors should consider these

products when procuring the materials and equipment for the project. If the contractor is aware of an Illinois product not listed, the contractor is encouraged to advise the A/E prior to bidding or offer a product substitution with the bid. CDB will verify that the product meets the definition of an Illinois product and add it to CDB's Buy Illinois product directory.

3. Contractors should provide the total value of Illinois products on the Contractor's Schedule of Values (CSV) in the space provided. The individual items included in the total should be identified by putting "IL" in front of their descriptions on the CSV.

4. Where material is specified by standards and/or codes and not by a list of acceptable manufacturers, contractors are still encouraged to purchase Illinois products. However, the contractor should not include these materials in the computation of the total dollars for Illinois products on the CSV.

00 43 39 MINORITY, WOMEN, PERSONS WITH DISABILITIES, AND VETERAN BUSINESS ENTERPRISE PARTICIPATION

1. **Certification.** CDB will only accept Minority, Women, Persons with Disabilities, and Veteran Business Enterprise (MBE/WBE/PBE/VBE) firms certified by the Illinois Department of Central Management Services (CMS). The MBE/WBE/PBE/VBE's certification with CMS shall be in good standing prior to the bid opening date.

2. **Designated Projects.** CDB may designate projects with "MBE/WBE/PBE/VBE participation goals." See the bid form, Section 00 41 05 of the project manual, for applicable goals for first and second tier (level) subcontractors and supplier MBE/WBE/PBE/VBE participation. For Single Prime Delivery Method Projects: participation of certified MBE/WBE/PBE/VBE second level subcontractors and suppliers is permissible for meeting applicable goals.

3. **Bid Form.** Each bidder shall name, on the bid form, Section 00 41 05, the minority, women, persons with disabilities, and veteran owned businesses it intends to use to meet the specified goals. If no eligible participation is listed on the 00 41 05 Form, then the bidder must submit documentation of its good faith efforts to achieve the goals with its bid. If eligible participation is included on the 00 41 05 Form, but the specified goals are not met, within ten (10) calendar days from the date of notification the bidder shall: (1) cure the deficiency in the bid by adding participation to meet the goals, or (2) request a waiver of the specified goals including documentation of its good faith efforts to achieve the goals.

4. **MBE/WBE/PBE/VBE Bidder.** If the bidder is a minority, woman, person with disability or veteran owned business then the bidder shall indicate the work proposed to be done with own forces on the 00 41 05 Form. CDB encourages MBE/WBE/PBE/VBE prime bidders to use MBE/WBE/PBE/VBE subcontractors/suppliers.

5. **Joint Venture.** If the bidder is a joint venture, the MBE/WBE/PBE/VBE joint venturer may be used to meet the MBE/WBE/PBE/VBE goal for the contract, consistent with the provisions of subsection .11(g).

6. **Subcontracts.** Subcontracting of work to a lower tier non-MBE/WBE/PBE/VBE firm which would reduce the proceeds received by the subcontracting MBE/WBE/PBE/VBE firm below the specified goal is prohibited. CDB may, in such cases, reject the bid or terminate the contract.

7. **Request for Assistance.** If the bidder needs assistance in locating subcontractors or suppliers to meet the goals, bidder shall contact CDB's Fair Employment Practices Unit (FEP) both prior to the submittal of the bid, and, if applicable, during the 10-day cure period.

8. **Submittal of Good Faith Effort documentation for a waiver request. Good Faith Effort documentation must include the following:**

   A. All information indicating why the specified goal cannot be met.

   B. A list of all MBE/WBE/PBE/VBE firms the bidder has used in the current and prior fiscal years, if available. The fiscal year is from July 1 until June 30.

   C. A list of all certified MBE/WBE/PBE/VBE firms eligible to perform the work, if available. To be eligible to perform the work, a firm must be certified by CMS.

   D. A clear determination that the number of certified MBE/WBE/PBE/VBE firms eligible to perform the work is insufficient to ensure adequate competition, if available.

   E. Demonstrated proof that the MBE/WBE/PBE/VBE firms' prices were unreasonable, if available.

   F. A list of all MBE/WBE/PBE/VBE firms contacted and the dates they were contacted, including documentation from those firms. Documentation shall include, when applicable:

      1. A log of telephone contacts including date and time of call, telephone number, name of person called, and the outcome of the call;
      2. Copies of written or electronic email correspondence showing the date, postal or email address, name of person contacted, and subsequent correspondence that reflects the outcome.

   G. Copies of all bid solicitation letters or electronic email correspondence to MBE/WBE/PBE/VBE firms. Letters shall contain, at a minimum:

      1. project title and location;
      2. classification of work items for which quotations are requested;
      3. date, time, and place quotations are due; and
      4. returnable acknowledgment of the solicitation.

   H. All other evidence of good faith efforts made by the bidder to secure eligible MBE/WBE/PBE/VBE firms to meet the specified goal including documentation that demonstrates the following:

1. A reasonable number of MBE/WBE/PBE/VBE firms were contacted.
2. The work selected by the bidder for allocation to MBE/WBE/PBE/VBE firms was selected in order to increase the likelihood of achieving the specified goal.
3. The bidder negotiated, in good faith, with the potential MBE/WBE/PBE/VBE firms by not imposing any conditions which are not similarly imposed on all other subcontractors and suppliers, or by denying benefits ordinarily conferred on subcontractors or suppliers for the type of work for which bids were solicited.
4. The bidder engaged with FEP for assistance in its efforts to achieve the specified participation.
5. The bidder attended the CDB pre-bid meeting for the project.

I. All actions taken to solicit MBE/WBE/PBE/VBE firms both pre-bid opening date and post-bid opening date.

J. A revised 00 41 05 Form, if MBE/WBE/PBE/VBE participation increases during the 10-day cure period but goals are not met.

K. Other relevant information in support of the waiver request.

2. **Replacement of MBE/WBE/PBE/VBE Subcontractor or Supplier.** If it can be demonstrated that the MBE/WBE/PBE/VBE subcontractor or supplier cannot perform the work, or if a MBE/WBE/PBE/VBE loses its CMS certification after the bid opening, then the Contractor shall make a good faith effort to replace, in-kind, the MBE/WBE/PBE/VBE. The contractor shall identify the replacement MBE/WBE/PBE/VBE or provide evidence of good faith effort to find a replacement on the Contractor's letterhead and submit with documented evidence of cause to CDB's FEP Unit. CDB will review the submittal and may authorize the replacement or approve the good faith effort.

3. **Calculation of MBE/WBE/PBE/VBE Participation as a Material Supplier or Subcontractor**

A. MBE/WBE/PBE/VBE as a material supplier: A 100 percent goal credit is allowed for the cost of materials or purchases from a MBE/WBE/PBE/VBE manufacturer or supplier.

B. MBE/WBE/PBE/VBE as a subcontractor: A 100 percent goal credit is allowed for the work of the subcontract performed by the MBE/WBE/PBE/VBE's own forces (performing, managing and supervising the work), including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the MBE/WBE/PBE/VBE subcontractor from the prime Contractor or its affiliates. Work that a MBE/WBE/PBE/VBE subcontractor in turn subcontracts to a non-MBE/WBE/PBE/VBE does not count toward the MBE/WBE/PBE/VBE goal.

4. **Work to be Completed by Certified Firms.** To be credited towards goals for Minority Business Enterprise (MBE), Women Business Enterprise (WBE), Persons with Disabilities Business Enterprise (PBE) and Veteran Business Enterprise (VBE) participation, work must be performed by an entity certified by CMS pursuant to the Business Enterprise for Minorities,

Women, and Persons with Disabilities Act (30 ILCS 575/5) and the Illinois Procurement Code (30 ILCS 500/45-57).

A. The entire amount of contractual work performed by a MBE, WBE, PBE, or VBE's own forces will be credited towards MBE/WBE/PBE/VBE goals, including the cost of supplies, materials, and equipment obtained by the MBE, WBE, PBE, or VBE for this work (except supplies and equipment the MBE/WBE/PBE/VBE obtains from the prime contractor or its affiliate).

B. The entire amount of fees or commissions charged by a MBE/WBE/PBE/VBE firm for providing a bona fide service, such as professional, technical, consultant, or managerial services will be credited towards MBE/WBE/PBE/VBE goals provided such fees are reasonable and not excessive as compared to fees customarily allowed for similar services. Services for materials and supplies are defined in Section 00 43 39.14 and are not considered to be professional, technical, consultant, or managerial services.

C. Work subcontracted by a MBE/WBE/PBE/VBE to another firm will not be credited towards goals unless the subcontractor performing the work is also certified by CMS as a MBE/WBE/PBE/VBE. Work that a MBE/WBE/PBE/VBE subcontracts to a firm not certified as a MBE/WBE/PBE/VBE does not count toward the goal. For example, if a MBE firm has a subcontract to perform $100,000 worth of work and subcontracts $10,000 of that work to a non-MBE firm, only the $90,000 worth of work performed by the MBE firm will be credited toward the goal.

D. If a firm is not certified as a MBE/WBE/PBE/VBE at the time of the bid opening, the firm's participation will not be counted toward any goals.

E. The dollar value of work performed under a contract with a firm after it has ceased to be certified will not be counted toward the overall goal.

F. The participation of a MBE/WBE/PBE/VBE subcontractor will not be counted toward a Contractor's final compliance with its MBE/WBE/PBE/VBE obligations on a contract until the amount being counted has actually been paid to the MBE/WBE/PBE/VBE.

G. When a MBE/WBE/PBE/VBE performs as a participant in a joint venture, a portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work of the contract that the MBE/WBE/PBE/VBE performs with its own forces may be counted toward MBE/WBE/PBE/VBE goals.

5. **Commercially Useful Function.** Expenditures to a MBE/WBE/PBE/VBE will only be credited towards MBE/WBE/PBE/VBE goals if the MBE/WBE/PBE/VBE performs a commercially useful function on that contract. A MBE/WBE/PBE/VBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the MBE/WBE/PBE/VBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining

quality and quantity, ordering material, and installing (where applicable) and paying for the material itself.

A. Factors to be used in determining whether a MBE/WBE/PBE/VBE is performing a commercially useful function include, but are not limited to, the amount of the work subcontracted, industry practices, and whether the amount the firm is paid is commensurate with the work it is performing and the MBE/WBE/PBE/VBE credit claimed for its performance of the work.

B. A MBE/WBE/PBE/VBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of MBE/WBE/PBE/VBE participation. In determining whether a MBE/WBE/PBE/VBE is such an extra participant, similar transactions, particularly those in which MBE/WBE/PBE/VBEs do not participate, will be examined.

C. If a MBE/WBE/PBE/VBE does not perform at least 30 percent of the total cost of its contract with its own work force, or the MBE/WBE/PBE/VBE subcontracts a greater portion of the work than would be expected on the basis of normal industry practice for the type of work involved, a presumption will arise that the MBE/WBE/PBE/VBE is not performing a commercially useful function. A MBE/WBE/PBE/VBE firm may present evidence to CDB to rebut this presumption. The MBE/WBE/PBE/VBE must provide such evidence to rebut the presumption within 7 business days of being notified that the presumption will be applied.

D. A prime contractor that is a MBE/WBE/PBE/VBE will still be required to meet the goals required on the contract. In determining whether the MBE/WBE/PBE/VBE prime contractor has met the goal, the work the MBE/WFBE/PBE/VBE prime contractor actually performs with its own forces will be credited, as well as work performed by MBE/WBE/PBE/VBE subcontractors or suppliers, consistent with the terms of Section 00 43 39. The presumption in .12(c) above will not attach if the MBE/WBE/PBE/VBE is the prime contractor and satisfies the “Work With Own Staff” requirement in Section 00 21 50.

E. A bidder’s efforts to exercise Good Faith Efforts by providing assistance in advance of the bid to a MBE/WBE/PBE/VBE firm in making purchases, obtaining bonding, obtaining credit, or providing equipment will not invalidate the commercially useful function of a MBE/WBE/PBE/VBE, provided that the MBE/WBE/PBE/VBE has otherwise performed a commercially useful function consistent with the terms of Section 00 43 39. Credit will only be given for work performed by, purchases made by, and equipment obtained by the MBE/WBE/PBE/VBE, consistent with the terms of Section 00 43 39. A bidder’s efforts to assist the MBE/WBE/PBE/VBE will not be credited.

6. **Trucking Company.** To be credited towards MBE/WBE/PBE/VBE goals, a trucking company or major construction equipment rental (MCER) must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract,

and there cannot be a contrived arrangement for the purpose of meeting MBE/WBE/PBE/VBE goals.

A. The MBE/WBE/PBE/VBE must itself own and operate at least one fully licensed, insured, and operational truck or major construction equipment unit (MCEU) used on the contract.

B. The entire value of transportation services a MBE/WBE/PBE/VBE provides on the contract using trucks or MCEUs it owns, insures, and operates using drivers it employs will be credited towards MBE/WBE/PBE/VBE goals.

C. If a MBE/WBE/PBE/VBE leases trucks or MCEUs from another MBE/WBE/PBE/VBE, the entire value of the services provided by the lessee will be credited.

D. If a MBE/WBE/PBE/VBE leases trucks or MCEUs from a company that is not a MBE/WBE/PBE/VBE, the total value of transportation services provided by the lessee is not to exceed the value of transportation services provided by MBE/WBE/PBE/VBE owned trucks or MCEUs on the contract.

E. For purposes of this section, a lease must indicate that the MBE/WBE/PBE/VBE has exclusive use of and control over the truck(s) or MCEU(s). This does not preclude the leased truck from working for others during the term of the lease with the consent of the MBE/WBE/PBE/VBE, so long as the lease gives the MBE/WBE/PBE/VBE absolute priority for the leased truck(s) or MCEU(s). Leased trucks and MCEUs must display the name and identification number of the MBE/WBE/PBE/VBE.

F. The MBE/WBE/PBE/VBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there cannot be a contrived arrangement for the purpose of meeting MBE/WBE/PBE/VBE goals.

7. **Materials and Supplies**

A. Credit towards goals will be given for materials purchased from a MBE/WBE/PBE/VBE supplier or manufacturer that is certified by CMS.

B. For purposes of this section, a manufacturer is a firm that operates and maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described in the specifications.

C. For the purposes of this section, a supplier is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business.

1. A supplier must be an established, regular business that engages as its principal business and under its own name, in the purchase and sale or lease of the products in question.
2. A person may be a supplier in such bulk items as steel, cement, gravel, stone, petroleum products, or asphalt without owning, operating, or maintaining a place of business as provided in this paragraph c if the person both owns and operated distribution equipment for the products. Any supplementing of a supplier's own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis.
3. Brokers, packagers, manufacturers' representatives, or other persons who arrange or expedite transactions are not suppliers within the meaning of this section.

00 43 44 ILLINOIS WORKS APPRENTICESHIP INITIATIVE

1. **Apprenticeship Goal.** The goal of the Illinois Works Apprenticeship Initiative is that, for projects estimated to cost $500,000 or more, apprentices will perform either 10% of the total labor hours actually worked in each prevailing wage classification or 10% of the estimated labor hours in each prevailing wage classification, whichever is less. See Section 00 43 44 of the project manual for applicable apprenticeship goals.

2. **Illinois Works Budget Supplement.** Submission of the Illinois Works Jobs Program Act Apprenticeship Initiative Budget Supplement shall be a post-award requirement. The Budget Supplement shall contain a complete and thorough estimate of all the labor hours to be performed by the Contractor and all of its subcontractors for the project, broken down by prevailing wage category. The Budget Supplement shall be used in determining the appropriate number of hours to be performed by apprentices.

3. **Reporting Requirements**. The Contractor shall submit monthly reports of its hourly workforce utilization including all apprenticeship hours to CDB's Fair Employment Practices Unit on Illinois Works Apprenticeship Initiative Reporting Forms.

4. **Reduction or Waiver of Goal.** If, at any point during the project, the Contractor determines that it may not meet the apprenticeship goal for any prevailing wage classification, the Contractor shall submit a request for a reduction or waiver of that particular goal, indicating why the goal may not be met. The Contractor shall include all documentation supporting the request. The request for a reduction or waiver of the goal shall be reviewed pursuant to 30 ILCS 559/20-20(b).

5. **Certification of Completion.** Upon completion of the work set forth in the contract, the Contractor shall submit a certification demonstrating that it has met the 10% apprenticeship goal or received a reduction or waiver of the 10% apprenticeship goal for each prevailing wage classification.

00 45 00 CERTIFICATIONS OF COMPLIANCE WITH APPLICABLE LAWS

1. **Recertification**. If the contract extends over multiple years, vendor (A/E or Contractor) and its subcontractors shall certify, by January 1 of each fiscal year covered by the contract after the initial fiscal year, of any changes that affect its ability to meet the requirements for being awarded a contract under Article 50 of the Illinois Procurement Code. Failure to do so may result in voiding the contract by operation of law or rendering the contract voidable at the option of the State without additional compensation. Violations of certain provisions may also be deemed a civil or criminal offense. If a vendor or subcontractor continues to meet all the requirements of the Illinois Procurement Code, it shall not be required to submit any certification.

2. **Illinois Works Apprenticeship Initiative.** The Contractor will comply with the Illinois Works Jobs Program Act Apprenticeship Initiative (30 ILCS 559/20-20(a)(2)).

00 51 20 ACCEPTANCE AND REJECTION OF BIDS

1. **CDB's Rights.** When, in its opinion, it is in the best interest of the State, CDB reserves the right to:

   A. Accept any bid
   B. Reject any or all bids
   C. Waive technical deficiencies and irregularities
   D. Allow bidder to remedy technical deficiencies or irregularities within a stated time
   E. Rescind any notice of award if CDB determines the notice of award was issued in error
   F. Rescind any notice of award when it is in the best interest of the State
   G. Rebid any contract

2. **Bid Rejection.**

   A. Bids will be rejected for the following material deficiencies:

      1. Failure to be prequalified with CDB no later than the close of business the day before the bid opening (Article 00 21 05) or being determined non-responsible after bid opening.
      2. Submission of a bid late (Paragraph 00 51 10.1).
      3. Failure to submit bid and/or bid modifications to appropriate bid opening office.
      4. Submission of a bid in a manner that reveals the bid price prior to the bid opening (example: by fax). (Paragraph 00 41 10.4).
      5. Use of a bid envelope, which is received by CDB unsealed, or marked in a manner that does not reasonably identify the project and/or contract for which it is intended (Paragraph 00 41 10.3).
      6. Omission of a base bid price, alternate bid price or unit price (Paragraph 00 41 10.1).
      7. Submission of a bid price that cannot be determined.
      8. Deletion of original signatures to the extent that an intent to be bound by the bid is not apparent.
      9. When CDB does not accept the unit price(s), when those prices are an integral part of

the base bid, the bidder shall be rejected.

10. Failure to attend a mandatory pre-bid meeting.
11. Bids not in substantial conformance with the bidding documents and whose non-conformance is determined to be material and unresponsive.
12. Failure to submit Bidder Disclosure(s) form and Certifications with bid, when the bidder is not registered with the Illinois Procurement Gateway (IPG).
13. Failure to be registered with the State Board of Elections, prior to bid opening date, when applicable.
14. Failure to submit documentation of the bidder's good faith efforts to meet applicable MBE/WBE/PBE/VBE goals at time of bid when no eligible participation is listed on the 00 41 05 Form.
15. Any other material deficiency specifically identified in the project bid documents.
16. For Single Prime Contract Bids (as defined by 30 ILCS 500/30-30(a)): failure to provide names and bid proposal costs for required protected subcontractor trades or providing more than one protected subcontractor for each trade.
17. For Single Prime Contract Bids: failure of identified protected subcontractor to be properly prequalified with CDB, licensed and certified, at the time of bidding, to perform the identified trade.

B. Failure to remedy the following technical deficiencies with seven (7) calendar days after the bid opening shall result in rejection of the bid. These technical deficiencies are:

1. Failure to use a revised bid form when bid forms have been changed by addenda.
2. Failure to acknowledge an addendum, however adjustment of the bid amount will not be allowed.
3. Failure to provide USDOL Apprenticeship and Training Certification for bidder and all known subcontractors.
4. Failure to submit bidder's Certificate of Registration in an approved apprenticeship and training program.
5. Failure to supply subcontractor and/or supplier names and Taxpayer Identification Numbers as required on Document 00 41 01.
6. Submission of a bid bond not on CDB's form (Paragraphs 00 43 13.1 and 00 43 13.2).
7. Submission of a bid security in a form other than a bid bond, certified check, cashier's check or bank draft (Paragraph 00 43 13.1).
8. Omission of the signature of the officer of the surety or any other required signatures except the signature in Paragraph 00 51 20.2.A.8, submission of those signatures in pencil or submission of a non-original signature.
9. Replacement of a bid security from an unacceptable surety with one from a surety acceptable to CDB (Paragraph 00 43 13.4).
10. Failure to furnish and/or complete the 00 41 04 Form (Illinois Department of Human Rights (DHR) Form PC-2)).
11. Failure to submit a signed affidavit stating that the bidder will maintain an Illinois office as the primary place of employment for persons employed in the construction authorized by the contract.
12. Failure to submit Certificate of Registration with State Board of Elections in accord

with 30 ILCS 500/20-160.

13. Failure to submit Disclosure of Business Operations with Government of Iran form in accord with 30 ILCS 500/50-36.
14. Any other technical deficiency specifically identified in the project bid documents.

C. MBE/WBE/PBE/VBE goal compliance deficiencies. Failure to remedy the following deficiencies within ten (10) calendar days after the date of notification shall result in rejection of the bid. These deficiencies are:

1. When applicable, failure to submit a revised 00 41 05 Form, documenting achievement of goals.
2. When applicable, failure to submit documentation acceptable by CDB of good faith efforts to meet MBE/WBE/PBE/VBE goals.

D. CDB at its sole discretion and without conferring any rights on any bidder may waive bid technical deficiencies or irregularities that are not in conformance with the bidding documents but whose non-conformance is non-material or minor.

E. Submittal of conditions or qualifying statements contrary to CDB's contract terms is not acceptable and, unless rescinded, the bid shall be rejected.

00 51 28 MBE/WBE/PBE/VBE BUSINESS CERTIFICATION, POST AWARD REQUIREMENTS

1. **Post Award Submittal.** See Article 00 51 40. The contract awardee shall submit CDB's MBE/WBE/PBE/VBE Subcontractor Supplier Certification Form, Document 00665 (available in the Reference Library on CDB's website), for each of the MBE/WBE/PBE/VBE subcontractor(s) and/or supplier(s) being utilized to meet the designated participation goals as specified on the bid form and in Section 01 11 00 of the project manual. The form must be signed by the MBE/WBE/PBE/VBE subcontractor or supplier and shall be submitted to CDB's FEP Unit.

   Completion of the 00665 form is not required if the Contractor is an MBE, WBE, PBE, or VBE firm. MBE/WBE/PBE/VBE prime contractors are encouraged to utilize MBE/WBE/PBE/VBE subcontractors/suppliers. If goals are split (separate MBE, WBE, PBE, and VBE goals), then an MBE, WBE, PBE, or VBE firm must supply 00665 forms for the subcontractor firm(s) utilized to meet the MBE, WBE, PBE, or VBE goal, respectively.

2. **Listed Firms.** The 00665 certification form shall be completed and submitted for each MBE/WBE/PBE/VBE firm listed on the 00 41 05 bid form.

3. **Compliance.** The MBE/WBE/PBE/VBE participation goal dollar value is based upon the total contract sum (including awarded alternates). The participation goal percentage amount(s) shall meet or exceed the goal(s) as specified on the bid form (and in Section 01 11 00 of the project manual), or in an approved change/waiver request (refer to Article 00 43 39 herein).

4. **Voluntary Participation.** Contractors are encouraged to utilize MBE/WBE/PBE/VBE subcontractors/suppliers for those projects that are not designated for MBE/WBE/PBE/VBE participation and complete the 00665 certification form for each MBE/WBE/PBE/VBE firm. MBE/WBE/PBE/VBE subcontractors/suppliers may be added at any time during the project.

5. **Subcontracts/Supplier Agreements.** Copies of subcontracts or supplier agreements (to correspond with each 00665 form) are required to be submitted within ten (10) calendar days of the Notice of Award.

00 51 40 POST AWARD REQUIREMENTS

1. **Contractor's Duty to Comply.** The Contractor may not proceed with the work until the following post award requirements are met. These requirements are part of the contract and failure to comply with these requirements shall constitute a breach of the contract. CDB shall issue Authorization to Proceed upon successful completion of these post award requirements.

2. **Submittals.** Within ten (10) calendar days from the date of the notice of award letter, the Contractor shall furnish, on CDB forms, the following:

   A. Contract executed by the Contractor;
   B. Performance Bond;
   C. Labor and Material Payment Bond;
   D. Certificates of Insurance;
   E. Builder's Risk Insurance Policy (if applicable);
   F. MBE/WBE/PBE/VBE Subcontractor Supplier Certifications, Form 00665 and MBE/WBE/PBE/VBE Subcontractor/Supplier agreements (if applicable);
   G. Completed Substance Abuse Prevention Certification form and Contractor's substance abuse plan (if applicable);
   H. DHR PC-2 accepted by FEP Technician;
   I. Project Labor Agreement signature sheets for the Contractor and known Subcontractors (if applicable); and
   J. Illinois Works Jobs Program Act Apprenticeship Initiative Budget Supplement.

3. **Cancellation of Award.** All post award requirements are mandatory. Noncompliance shall be cause for CDB to cancel the notice of award and make a claim against the bid security.

4. **Post Award Extensions.** CDB may extend the time limitations for good cause. No extension shall operate as a waiver of post award requirements, nor shall it extend the contract completion date.

5. **Delays.** Any delays to the commencement of the work due to the Contractor's failure to meet the post award requirements shall be the responsibility of the Contractor and its surety. Contractor and its surety shall be responsible for the costs of any such delays.

00 71 00 DEFINITIONS

1. **Protected Subcontractors.** For a Single Prime Delivery Method Project, a subcontractor identified for a protected trade on the 00 41 00 Bid Form. The subcontractor shall be prequalified with CDB, be properly licensed and certified (if applicable), and perform the minimum amount of the identified trade with its own forces by furnishing and installing the work on-site.

2. **Prime Bidding Contractor (Trade)**: For a Single Prime Delivery Method Project, one of the identified protected trades that submits the bid with the intent of entering into the prime construction contract with CDB as the Contractor.

00 72 10 TIME

1. **Approval Authority**. Changes in contract time are subject to approval at or above the CDB Regional Manager level.

00 72 25 CDB - RIGHTS AND RESPONSIBILITIES

1. **Right to Terminate the Contract for Cause.**

   A. CDB may terminate the Contractor's right to proceed with the work if the Contractor fails or refuses to perform the work with such diligence as to allow timely completion of performance in accordance with the current progress schedule or fails to complete the work in accordance with the documents or commits a breach of any other provision of the contract documents.
   B. In such case, CDB will give the Contractor and its surety written notice of intention to terminate and the reason therefore, and, unless within ten calendar days the delay or violation shall cease or satisfactory arrangement of correction made, CDB may issue a written termination notice to the Contractor and its surety.
   C. The Contractor shall stop work and vacate the construction site immediately upon receipt of notice of termination. However, the Contractor shall not remove tools, appliances, construction equipment and machinery, or materials or equipment for which CDB has paid, wherever stored, without the written consent of CDB. Any material stored off-site, and which have been paid for by CDB, shall be immediately delivered to CDB or its designated representative upon request. CDB reserves the right either to have the material delivered to the site and deduct the cost of the delivery from contract balance or to abandon the material and deduct the cost of the materials from the contract balance.
   D. The surety shall complete the work upon demand by CDB in accordance with the contract documents. Such completion may include, but not be limited to, the use of a completing contractor selected by CDB pursuant to a written takeover agreement with the surety, or payment of a sum of money required to allow CDB to complete the work, or other arrangements agreed to by the CDB and surety.
   E. If within ten calendar days the surety fails to act on CDB's demand, CDB may take over the work and take possession of all of the Contractor's tools, appliances, construction equipment, and machinery at the site and use the same to the full extent they could have been used by the Contractor (without liability for trespass or conversion), incorporate into the work all materials and equipment stored at the site or for which CDB has paid the Contractor but which are stored elsewhere, and finish the work by selecting the most advantageous method

identified in the Illinois Procurement Code or in other relevant procurement laws and administrative rules. In such case the Contractor shall not be entitled to receive any further payment until the work is finished. If CDB's expenses in completing the work exceed the unpaid balance of the contract sum, the Contractor and/or the surety shall pay the difference to CDB.

2. **Availability of Appropriation; Sufficiency of Funds.** The contract is contingent upon and subject to the availability of sufficient funds. CDB may terminate or suspend the contract, in whole or in part, without penalty or further payment being required, if (i) sufficient funds for the contract have not been appropriated or otherwise made available to CDB by the State or the Federal funding source, (ii) the Governor or CDB reserves funds, or (iii) the Governor or CDB determines that funds will not or may not be available for payment. CDB shall provide notice, in writing, to the Contractor of any such funding failure and its election to terminate or suspend the contract as soon as practicable. Any suspension or termination pursuant to this Section will be effective upon the date of the written notice, unless otherwise indicated.

3. **Right to Suspend the Contract Without Cause.** CDB may, without cause, order the Contractor in writing to suspend, delay or interrupt the work in whole or in part for such a period of time as CDB may determine, not to exceed 90 days. At the expiration of 90 days, the contract may continue upon written agreement of the parties or may be terminated in writing by either party. The contract may remain suspended at the expiration of 90 days until the parties either agree in writing to continue the contract or until either party terminates the contract in writing. If the parties enter into a written agreement to continue the contract, the contract may remain suspended after the expiration of 90 days.

   A. The contract time will be adjusted for increases in time caused by the suspension, delay or interruption as described in Article 00 72 10.
   B. CDB may decide to terminate the contract under Article 00 72 25 at any time during the period of suspension, delay or interruption.

00 73 17 BONDS, GENERAL

1. **Requirements.** The Contractor shall furnish a performance bond and a labor and material payment bond covering the faithful performance of the contract and the payment of all obligations arising thereunder, in accordance with the Public Construction Bond Act (30 ILCS 550). Each bond shall be in the full amount of the contract on forms provided by CDB and executed by a surety acceptable to CDB.

2. **Acceptability**. Bonds that meet the requirements of Paragraph 00 73 17.1 shall be acceptable to CDB when issued by a surety that meets all of the following standards:

   A. Has a current financial strength of at least “A-” as rated by A.M. Best Company, Inc., Moody’s Investor Service, Standard & Poor’s Corporation, or similar rating agency (30 ILCS 550/1); and a current Best's financial class of at least “V”.
   B. Is duly licensed in the state of Illinois by the Department of Insurance (30 ILCS 550/1) and does not have an unacceptable record of improper conduct or financial problems with the Illinois Department of Insurance.

00 73 40 LICENSING

1. For Single Prime Delivery Method Projects: When licensure and/or certification is required for an identified trade, the identified protected subcontractors or the Prime Bidder, if self-performing the work, shall be properly licensed and certified at the time of bid to perform the work for the identified trade.

01 29 73.1 SCHEDULE OF VALUES

1. Provide CDB prequalification/registration ID numbers on the CSV form for subcontractors/suppliers described in 00 21 50.2C.

2. Identify work performed by MBE/WBE/PBE/VBE subcontractors and suppliers on the CSV form.

3. Revise and resubmit CSV for approval if any substitution or replacement of subcontractors or suppliers occurs.

4. Revise and resubmit CSV for approval if any change in the contract amount of subcontractors or suppliers other than a change resulting from a change order occurs.

01 29 76 PROGRESS PAYMENT PROCEDURES

1. **Payments to Subcontractors and Suppliers**.

   A. Subcontractors (as described in 00 21 50.2C.) who have not obtained a CDB ID number and/or have not submitted the required Disclosures and Certifications may have their payment amounts withheld by CDB in addition to any other remedy provided by this contract or by law. No work can be performed by these subcontractors until the Certifications and Disclosure documents have been reviewed and approved by the State Purchasing Officer.

01 77 19.2 FINAL COMPLETION

1. Certification of Compliance with the Illinois Works Jobs Program Act Apprenticeship Initiative.

1. General

1.1 REQUIREMENTS INCLUDE:

A. The contractor shall prepare and maintain a detailed project schedule as described below.

B. The project schedule shall be the contractor's working schedule; used to execute the work and record and report actual progress. It shall show how the contractor plans to complete the work within the contract time and meet any contractually specified intermediate milestone dates.

1.2 RELATED REQUIREMENTS

A. Specified Elsewhere:

1. 01 11 00 - Project Summary
2. 01 33 23 - Shop Drawings, Product Data and Samples

1.3 FORM OF SCHEDULE

A. The project schedule shall be in the form of a standard horizontal bar chart or Gantt chart.

B. The schedule shall provide sufficient detail and clarity so that the contractor can plan and control the work and CDB and the A/E can readily monitor and follow the progress of all portions of the work. The critical activities must be clearly shown. The degree of detail must be satisfactory to the A/E and CDB.

1.4 CONTENTS OF SCHEDULE

A. The schedule must be inclusive of all installation tasks of the work.

B. Submittal and approval of shop drawings and material samples as well as delivery dates of major equipment shall be included in the project schedule.

C. Activity duration shall be in whole working days.

D. There should be at least one activity for each specification section.

1.5 UPDATING

A. The project schedule shall be updated monthly.

B. Actual activity completion dates shall be reported and recorded on the schedule.

C. Progress on uncompleted activities shall be reported.

D. Projected completion dates and activities shall be reviewed and revised if necessary.

1.6 REPORTS AND SUBMITTALS

A. Within 30 days of the Authorization to Proceed, the contractor shall submit the project schedule to the A/E and CDB.

B. Five (5) days prior to the pay/progress meeting, the contractor shall submit the current updated schedule to the A/E and CDB.

C. The schedule shall be presented on a minimum of 8.5" by 11" sheets. Each sheet shall be clearly titled. Intermediate milestones shall be clearly indicated.

D. A management narrative report indicating the progress of the work, any revisions since last reporting period, any lost time required to be made up and the contractors' plan to maintain the schedule and meet the milestone dates and contract completion will accompany the updated schedule. The report will identify any potential delays and problem areas and their impact on project completion.

1.7 REVIEWS

A. The A/E and CDB shall review and may comment on the schedule at the pay/progress meeting. They may also attend the update meetings. The contractor(s) shall revise the schedule as directed by the A/E for compliance with the requirements herein.

B. Payment and reduction of retainage may be denied by CDB for failure to submit a proper schedule and maintaining work progress according to the project schedule.

C. Neither the A/E's nor CDB's review and/or comments shall indicate approval/disapproval of the schedule. Since the schedule is dependent on the contractors' proprietary information and commitments, the A/E and CDB can not and will not warrant the schedule to be correct and sufficient to meet the required contract dates.

END 01 32 00.

1. GENERAL

1.1 REQUIREMENTS INCLUDE:

A. Each Contractor lay out the work under their contract.

1.2 RELATED REQUIREMENTS:

A. Specified Elsewhere:

1. 00 31 32 - Geotechnical Data.
2. 01 11 00 - Project Summary.

B. By Others:

1. Architect/Engineer will provide:

a. Locations, dimensions and data pertaining to the existing:

1.) Buildings.
2.) Underground Obstructions.
3.) Trees and Landscaping.
4.) Utilities.
5.) Pavements.

b. Information regarding available public and private service and utility lines.

c. Setting of survey baseline control points for horizontal and vertical control.

d. Benchmark and temporary benchmark location, reference, and elevation of each.

1.3 QUALITY ASSURANCE:

1. Qualifications of Surveyor or Person Responsible:

1. Five years of experience in layout of similar or more difficult complexity.

1.4 SUBMITTALS:

1. Submit resume of surveyor or person responsible for documentation purposes only.

2. CDB or the A/E may at any time require written verification of grades, lines, and levels by a licensed surveyor as work progresses.

END 01 32 23.

1. GENERAL

1.1 REQUIREMENTS INCLUDE

A. Each Contractor make submittals to Architect/Engineer. Architect/Engineer shall maintain a master list of submittals.

1.2 RELATED REQUIREMENTS

A. Specified elsewhere:

1. See individual specifications sections for specific requirements on the various shop drawings, product data, samples, etc. to be submitted.

1.3 DEFINITIONS

A. Shop drawings: Shop drawings are original drawings prepared by Contractor, subcontractor, sub-subcontractor, supplier or distributor, which illustrate some portion of the work, showing fabrication, layout, setting or erection details.

1. Prepared by qualified detailer.
2. Identify details by reference to sheet and detail numbers shown on contract drawings.
3. Maximum sheet size: 36" x 24".
4. Reproductions for submittals: Reproducible transparency, full size reproducible transparencies which do not require any special equipment for reproduction and copying are to specified in lieu of reproducible transparency, with one blueprint.
5. Submit 4 copies and 1 electronic copy.

B. Product data:

1. Manufacturer's standard schematic drawings, edited to fit this project.
2. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive data.

a. Clearly mark each copy to identify pertinent materials, products or models.
b. Show dimensions and clearances.
c. Show wiring diagrams and controls.

C. Samples: Physical samples to illustrate materials, equipment or workmanship. Approved samples establish standards by which complete work is judged. Maintain at site as directed. Protect until no longer needed.

1. Office samples: Of sufficient size to clearly illustrate:

a. Functional characteristics of product or material.
b. Full range of color samples.

c. After review, samples may be used on construction of project.

2. Field samples and mock-ups:

a. Erect at project site at location approved by Architect/Engineer.
b. Construct each sample or mock-up complete, including work of all crafts required in finished work.
c. Remove as directed.

1.4 SCHEDULE SUBMITTAL

A. Submit schedule of all exhibits to Architect/Engineer within 10 business days after preconstruction meeting.

1. Prepare schedule in bar chart format. Include:

a. Exhibit identification.
b. Specification section and page number.
c. Date of submittal to Architect/Engineer.
d. Latest date for final approval.
e. Fabrication time.
f. Date of installation.

2. Architect/Engineer will review and comment on exhibit schedule and will advise the contractor as to which submittals require longer review durations.

Submit number of copies of shop drawings, product data and samples which contractor requires for distribution plus 2 copies which will be retained by Architect/Engineer.

B. Accompany submittals with transmittal letter, in duplicate, containing:

1. Date.
2. Project title and number.
3. Contractor's name and address.
4. The number of shop drawings, product data and samples submitted.
5. Notification of deviations from Contract.
6. Other pertinent data.

C. Submittals shall include:

1. Date and revision dates.
2. Project title and number.
3. Names of:

a. Architect/Engineer.
b. Subcontractor.
c. Sub-subcontractor.
d. Supplier.
e. Manufacturer.
f. Separate detailer when pertinent.

4. Identification of product or material.

5. Relation to adjacent structure or material.
6. Field dimensions, clearly identified as such.
7. Specification section and page number.
8. Specified standards, such as ASTM number or ANSI.
9. A blank space, 3" x 3", for Architect/Engineer's stamp.
10. Identification of previously approved deviation(s) from contract documents.
11. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of field measurements and compliance with Contract.
12. Space for Contractor's approval stamp.

1.5 RESUBMISSION REQUIREMENTS

A. Resubmit all shop drawings, product data, and samples as requested by the contractor and/or A/E.

1.6 RESPONSIBILITIES

A. Review shop drawings, product data and samples prior to submission to the next level of authority.

B. Verify:

1. Field dimensions.
2. Field construction criteria.
3. Catalog numbers and similar data.

C. Coordinate each submittal with requirements of:

1. The work.
2. The contract documents.

D. Contractor's responsibility for errors, omissions or deviation from contract documents in submittals is not relieved by Architect/Engineer's review of submittals.

E. Prior to submission, notify Architect/Engineer and CDB in writing of all proposed deviations in submittals from contract requirements. Substitution of materials or equipment may only be approved by change order.

F. Do not begin any work which requires submittals without Architect/Engineer's approval.

G. After Architect/Engineer's review, make response required by A/E's stamp and distribute copies. Indicate by transmittal that copy of approved data has been delivered to installer.

1.7 ARCHITECT/ENGINEER'S DUTIES

A. Review submittals within 14 calendar days.

1. Review for:

a. Design concept of project.

b. Compliance with contract documents.

2. Review all requests for proposed deviations. Obtain CDB's concurrence and respond to Contractor's request.

3. Affix stamp, date and initials or signature certifying to review of submittal, and with instructions for contractor response.

4. Return submittals to sender for response or distribution.

B. Schedule 01 33 23:

1. 02 41 16 – Structure Demolition
   a. Detailed work plan
   b. Documentation of acceptance of waste materials
   c. Letters of acceptance from permitted facility and hauler
   d. Documentation of weight of demolished materials

2. 03 30 00 – Cast-in-Place Concrete
   a. Mix design
   b. Product data

3. 26 05 19 – Low-Voltage Electrical Power Conductors and Cables
   a. Product data

4. 26 05 26 – Grounding and Bonding for Electrical Systems
   a. Product data

5. 26 05 29 – Hangers and Supports for Electrical Systems
   a. Product data
   b. Shop drawings

6. 26 05 33 – Raceway and Boxes for Electrical Systems
   a. Product data
   b. Shop drawings
   c. Samples
   d. Coordination drawings

7. 26 05 53 – Identification for Electrical Systems
   a. Product data
   b. Samples
   c. Identification schedule

8. 26 24 16 – Panelboards
   a. Product data
   b. Shop drawings

9. 26 28 16 – Enclosure Switches
   a. Product data
   b. Manufacturer’s instructions

10. 31 25 00 – Erosion and Sedimentation Controls
    a. Product data
    b. Shop drawings

11. 32 31 00 – Fences and Gates
    a. Shop drawings

12. 32 92 19 – Seeding
    a. Product data

13. 33 31 13 – Site Sanitary Sewerage Piping and Appurtenances
    a. Shop drawings

14. 33 32 00 – Sanitary Sewerage Equipment
    a. Shop drawings
    b. Product Data

15. 33 34 13 – Septic Tanks
    a. Shop drawings
    b. Product Data

16. 33 34 23 – Onsite Aerobic Equipment
    a. Shop drawings
    b. Product Data
    c. Experience

17. 33 34 23 – Drainage Field System
    a. Shop drawings
    b. Product Data

END 01 33 23

1. GENERAL

1.1 REQUIREMENTS INCLUDE

A. Each Contractor comply with all laws, rules and regulations governing the work.

1. When Contractor observes that contract documents are at variance with specified codes, notify Architect/Engineer in writing immediately. Architect/Engineer will process changes in accord with General Conditions.
2. When Contractor performs any work knowing or having reason to know that the work is contrary to such laws, rules and regulations and fails to so notify the Architect/Engineer, Contractor shall pay all costs arising therefrom. However, it will not be the Contractor's primary responsibility to make certain that the contract documents are in accord with such laws, rules and regulations.

1.2 DEFINITIONS & ABBREVIATIONS

A. Definitions:

1. Dates: Reference Codes, Regulations and Standards are the issue current at date of bidding documents unless otherwise specified.
2. Codes: Codes are rules, regulations or statutory requirements of government agencies.
3. Standards: Standards are requirements set by authorities, custom or general consent and established as accepted criteria.

B. Abbreviations:

1. ADA Americans with Disabilities Act.
2. AGCI Associated General Contractors in Illinois.
3. ANSI American National Standards Institute.
4. ASTM American Society for Testing and Materials.
5. AWWA American Waterworks Association.
6. CDB Capital Development Board.
7. FED Federal Agencies.
8. IDOL Illinois Department of Labor.
9. IDOT Illinois Department of Transportation.
10. IDPH Illinois Department of Public Health.
11. IEPA Illinois Environmental Protection Agency.
12. IDPR Illinois Department of Professional Regulation.
13. ISPE Illinois Society of Professional Engineers.
14. NFPA National Fire Protection Association.
15. OSFM Office of State Fire Marshal.
16. SOS Secretary of State.
17. UBC Uniform Building Code
18. UL Underwriters Laboratories, Inc.

1.3 QUALITY ASSURANCE

A. Architect/Engineer has designed the project with full knowledge of code requirements and has copies of all specified codes available for Contractor's inspection.

B. Contractor:

1. Ensure that copies of specified codes and standards are readily available to Contractor's personnel. Copies are available at Contractor's expense from source or publisher.
2. Ensure that Contractor's personnel are familiar with workmanship and installation requirements of specified codes and standards.

1.4 REGULATORY REQUIREMENTS

A. Source and requirements:

1. CDB:

a. Illinois Accessibility Code – 2018
b. Illinois Energy Conservation Code - 2018

2. FED:

a. ADA 2010

3. State of Illinois:

a. Illinois Steel Products Procurement Act, as amended (30 ILCS 565/1 et seq.).
b. Illinois Procurement Code, as amended (30 ILCS 500/1 et. seq.)
c. Illinois Domestic Products Act, as amended (30 ILCS 517 et seq).

4. IDOT:

a. Standard Specifications for Road and Bridge Construction, including all supplements, April 1, 2016, except where otherwise specified and as revised below.
   1) Change all references to "Engineer" to "Architect/Engineer".
   2) References to "Method of Measurement" and "Basis of Payment" do not apply.

5. IDPH:

a. Illinois State Plumbing Code - April 2014
b. Private Sewage Disposal Licensing Act and Code.
c. Rules and Regulations for Recreation Areas.

6. IEPA

a. Air Pollution Standards.
b. Noise Pollution Standards.
c. Water Pollution Standards.

d. Public Water Supplies.
e. Solid Waste Standards.
f. Illinois Recommended Standards for Sewage Work.
g. Hazardous Waste Crane and Hoisting Equipment Operators Licensing Act, 225 ILCS 220/1 et. seq.
h. Hazardous Waste Laborers Licensing Act, 225 ILCS 221/1 et. seq. Toxic Substance Control Act.

7. OSFM:

   a. Illinois Rules and Regulations for Fire Prevention and Safety, NFPA 101-2015 (new construction), NFPA 101-2015 (existing construction).

8. STANDARDS:

   a. AGCI/ISPE: Standard Specifications for Water and Sewer Main Construction in Illinois, Revised 2020.
   b. NSF Standard 61
   c. ANSI No. C-2, National Electrical Safety Code - 2017
   d. AWWA: Water and Sewer Main Construction – 2017

9. NFPA: National Fire Codes

   a. 70-2020, National Electrical Code
   b. 101-2015, Life Safety Code

10. Local Codes

    a. 2018 International Building Code (IBC)

B. The Architect/Engineer or CDB may reference other codes or standards throughout the Project Manual when deemed appropriate for proper compliance with regulatory requirements.

END 01 41 00.

1. GENERAL

1.1 SCOPE

A. Base Bid:

1. General Contractor:

a. Verify data and existing conditions.

b. The intent of this section is to furnish bidders with the known list of required permits for the Work under the Contract Documents. Bidders should note that the list is not necessarily complete and that additional requirements may exist or arise.

1.2 RELATED WORK

A. Work by Others:

1. The A/E has prepared and submitted the following permits: Illinois Department of Public Health.

2. PERMIT

See attached permit.

END 01 41 26.

01 45 29 - Testing Laboratory Services

1. GENERAL

1.1 REQUIREMENTS INCLUDE

A. Contractor employ and pay for an independent testing laboratory to perform specified services.

1.2 RELATED REQUIREMENTS

A. Specified elsewhere:

1. 03 30 00 – Cast-in-Place Concrete
2. 31 23 00 – Excavation and Fill

1.1 QUALIFICATION OF LABORATORY

A. Meet "Recommended Requirements for Independent Laboratory Qualification", latest edition, published by American Council of Independent Laboratories.

B. Meet basic requirements of ASTM E329, "Standards of Recommended Practice for Inspection and Testing Agencies for Concrete and Steel Used in Construction".

1.2 LABORATORY DUTIES - LIMITS OF AUTHORITY

A. Cooperate with Architect/Engineer and Contractor; provide qualified personnel promptly on notice.

B. Acquaint Architect/Engineer's personnel with testing procedures and with all special conditions encountered at the site.

C. Perform specified inspections, sampling and testing of materials and construction methods:

1. Comply with specified standards, ASTM, other recognized authorities.
2. Ascertain compliance with contract requirements.
3. Obtain written acknowledgement of each inspection, sampling and test made from contractor whose work is being tested or from his superintendent.

D. Promptly notify Architect/Engineer and contractor, of irregularities or deficiencies of work which are observed during performance of services.

E. Promptly submit 1 printed and 1 electronic copy of reports of inspections and tests to Architect/Engineer including:

1. Date issued.
2. Project title and number.
3. Testing laboratory name and address.
4. Name and signature of inspector.
5. Date of inspection and sampling.

6. Record of temperature and weather.
7. Date of test.
8. Identification of product and specification section.
9. Location of project.
10. Type of inspection or test.
11. Observations regarding compliance with contract documents.

F. Perform additional services ordered by Architect/Engineer.

G. Laboratory is not authorized to:

1. Release, revoke, alter or enlarge on, contract requirements.
2. Approve or accept any portion of work.
3. Perform any duties of the Contractor.

END 01 45 29.

1. GENERAL

1.1 REQUIREMENTS INCLUDE. Designated contractor provide and maintain specified temporary utilities during construction period.

A. General Contractor Provide:

1. Toilets.
2. Temporary power in excess of existing service provided by the utility company available to the Using Agency at the site, if required, including service hookup and connection charges.

B. Each Contractor:

1. All utilities required in excess of those specified, or exceed capacity of existing or permanent system(s).
2. Drinking water for own forces.

1.2 RELATED REQUIREMENTS

A. Specified elsewhere:

1. 01 11 00 - Project Summary.

B. Furnished by others:

1. Contractor requiring Using Agency furnished services provide and pay for extension or modification of services to perform the work, and for restoration of services at completion of work.

1.3 DESCRIPTION OF TEMPORARY UTILITY SYSTEMS

A. Electrical system:

1. If in excess of available power:

a. Provide required power by means of portable power plants.

B. Lighting:

1. Provide temporary lighting for:

a. Construction needs.
b. Safety lighting.

A. Toilets:

1. Provide temporary toilet facilities for use of all workmen and authorized parties throughout construction period.

2. Provide a minimum number of enclosed combination toilet and urinal units for construction personnel:

a. One for every 20 employees, or fraction thereof.

1.4 REQUIREMENTS OF REGULATORY AGENCIES

A. Only on CDB's prior written authorization, obtain:

1. Permits and inspections required by IDPH, IEPA.
2. Temporary easements required across property other than that of CDB or Using Agency. (At Contractor's expense.)

2. PRODUCTS

2.1 MATERIALS. May be new or used, but shall be adequate for purposes used, shall not create unsafe or unsanitary conditions, nor violate applicable codes.

3. EXECUTION

3.1 INSTALLATION

A. Toilets:
1. Service regularly.

3.2 REMOVAL

A. Upon CDB's prior written authorization, completely remove temporary materials and equipment.

B. Repair all damage caused by temporary utilities' installation. Restore to original conditions.

3.3 MAINTENANCE

A. Maintenance of permanent system when used for construction purposes:

1. Permanent systems shall be maintained by installing contractor so as to prevent any damage thereto.

END 01 51 00.

1. GENERAL

1.1 The project will be constructed at an occupied facility. These requirements supplement the Standard Documents for Construction and other sections of the Project Manual.

1.2 The Using Agency will occupy area(s) for purpose of daily operations.

1.3 REQUIREMENTS INCLUDE General Contractor provide:

A. Scheduling
B. Security and site regulations
C. Entrances
D. Temporary enclosures and barriers
E. Fences
F. Temporary utilities
G. Access roads & parking areas
H. Traffic regulation
I. Construction Cleaning
J. Storage
K. Close-out

2. EXECUTION

2.1 SCHEDULING

A. Schedule the work to allow the User Agency to continue operation. Submit separate detailed subschedule showing:

1. Each stage of work; occupancy dates of areas.
2. Date of Substantial Completion for each area of work.

B. Schedule early completion of designated area(s) for Using Agency's usage prior to substantial completion of entire project.

C. Schedule noisy or hazardous work to avoid problems with Using Agency's operations.

2.2 SECURITY AND SITE REGULATIONS

A. Confer with the Using Agency's representative and obtain full knowledge of all site rules and regulations affecting work.

B. Provide control of all persons and vehicles entering and leaving project site. (Reasonable proof of identification and signature to the visitor's log shall be required of the visitors by the contractor's site superintendent.)

C. Do not take photographs of any kind except with prior written authorization from CDB and Using Agency.

2.3 ENTRANCES Access to the site is depicted on the construction drawings and shall be coordinated with the Using Agency.

2.4 TEMPORARY UTILITIES

A. Using Agency will authorize use of existing facilities or services:

1. Electrical power service within the limits of the existing service provided by the utility company (Tri-County Electric).

2. Water service.

a. The Contractor shall make all arrangements and pay all costs for necessary quantities of water for purposes of filling, flushing, disinfecting and placing the system into service for the Using Agency's use. The Contractor may obtain this water from the Using Agency at $5.00 per thousand gallons used for the purposes of filling, flushing, disinfecting and placing the system into service for all normal and reasonable quantities of water necessary.

B. Make written arrangements with Using Agency's representative.

C. Prevent interference with Using Agency's normal use of system.

D. Modify, supplement and extend systems to meet temporary utility requirements for project, subject to approval of Architect/Engineer and Using Agency. Modifications shall be at contractor's expense.

E. Contractor requiring facilities or services beyond those available from the User shall provide and pay for extension or modification of services to perform the work, and for restoration of services at completion of work.

2.5 ACCESS ROADS & PARKING AREAS

A. Designated existing on-site streets and driveways may be used for construction traffic. Maintain existing condition.

B. Designated areas of existing parking facilities may be used for parking of construction personnel's private vehicles and of contractor's lightweight (not exceeding a B plate) vehicles.

C. Maintain roads, walks and parking areas in a sound, clean condition. Restore to original condition upon work completion prior to Final Acceptance.

D. Control vehicular parking to preclude interference with public traffic or parking, access by emergency vehicles, Using Agency's operations or construction operations.

2.6 TRAFFIC REGULATION Each Contractor provide traffic control and directional signs, mounted on barricades or standard posts:

A. At each change of direction of a roadway and at parking areas.

B. Provide qualified and suitably equipped flaggers when construction operations encroach on traffic lanes, as required for traffic regulation.

2.7 CONSTRUCTION CLEANING

A. Each Contractor provide cleaning and disposal of waste materials, debris and rubbish during construction.

B. Each Contractor provide covered containers for deposit of waste materials, debris and rubbish.

C. Clean User occupied areas daily.

2.8 FIELD OFFICES

A. Make arrangements with User Agency Representative for use of Conference Room for project meetings.

3. EXECUTION

3.1 STORAGE Make arrangements with Using Agency's Representative for any on-site storage of materials and equipment to be installed in project. Protection and security for stored materials and equipment is solely contractor's responsibility.

3.2 CLOSEOUT

A. Upon completion of need to use existing user-provided facilities, or when directed by Architect/Engineer, restore each to original or specified condition.

B. At completion of work in each area, provide final cleaning and return space to a condition suitable for use of User.

END 01 51 50

1. GENERAL

1.1 REQUIREMENTS INCLUDE

A. General Contractor: Provide and maintain for his own forces all other construction aids required to complete his work.

1.2 RELATED REQUIREMENTS

A. Specified elsewhere:

1. 01 56 00 - Barriers.

2. PRODUCTS

2.1 MATERIALS. Materials may be new or used. Comply with specified codes and standards.

3. EXECUTION

3.1 PREPARATION. Consult with Architect/Engineer, review site conditions and factors which affect construction procedures and construction aids, including adjacent properties and public facilities which may be affected by execution of the work.

3.2 REMOVAL

A. Remove temporary materials, equipment and services.

1. When construction needs can be met by authorized use of permanent construction or when authorized by the A/E.

B. Clean and repair damage caused by installation or use of temporary facilities.

C. Restore facilities used for temporary purposes to original condition.

END 01 54 00.

1. GENERAL

1.1 Work Includes:

A. Base Bid:

1. General Contractor:

a. Provide temporary, open mesh fencing to indicate construction area.

b. Maintain fences and barriers during entire construction period. Relocate as construction progresses.

End 01 56 00

1. GENERAL

1.1 REQUIREMENTS INCLUDE

A. General Contractor: Provide final cleaning:

1. At completion of work, or at such other times as directed by the Architect/Engineer or CDB, remove all waste, debris, rubbish, tools, equipment, machinery and surplus materials. Clean all sight exposed surfaces; leave work clean and ready for occupancy.

2. PRODUCTS

2.1 N/A

1. EXECUTION

1.1 FINAL CLEANING

A. Employ experienced workmen for final cleaning.

1. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces to ensure performance.

B. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.

C. General Contractor soft broom clean all exposed concrete surfaces clean; other paved areas with soft or stiff broom as directed. Rake clean other surfaces on grounds.

D. General Contractor remove snow and ice from access to building(s).

E. General Contractor maintain finally cleaned areas until project, or designated portion thereof, is accepted by CDB.

END 01 74 23.

1. GENERAL

1.1 REQUIREMENTS INCLUDE

A. Each Contractor provide Operating and Maintenance Data in accordance with Article 01 78 23 of the Standard Documents for Construction and the Project Manual.

2. REQUIRED SUBMITTALS

2.1 General Contractor

A. General Contractor provide Operating and Maintenance Data per the following Specification Sections:

1. Section 26 24 16 - Panelboards
   a. Operation and Maintenance Data
2. Section 33 32 00 - Sanitary Sewerage Equipment
   a. Maintenance Data
3. Section 33 34 23 - Onsite Aerobic Equipment
   a. Maintenance Data
4. Section 33 34 51 - Drainage Field System
   a. Maintenance Data

END 01 78 23.

1. GENERAL

1.1 REQUIREMENTS INCLUDE

A. Each Contractor shall warrant their work in accordance with the Standard Documents for Construction. In addition, the following extended Warranties and Bonds shall be provided as specified.

2. EXTENDED WARRANTIES AND BONDS

2.1 General Contractor shall reference the follow sections for information on required extended warranties.

A. Section: 32 90 00 Planting

B. Section: 32 92 19 Seeding

C. Section: 33 34 23 Onsite Aerobic Equipment

END 01 78 36.

1. GENERAL

1.1 REQUIREMENTS INCLUDE

A. Each Contractor:

1. At project site, maintain one record copy of:

a. Contract drawings, including separate volume(s) of details.
b. Project Manual.
c. Interpretations and supplemental instructions.
d. Addenda.
e. Reviewed, approved shop drawings and product data.
f. Other modifications to contract.
g. Field test records.
h. All schedules.
i. Correspondence file.

2. Store documents in apart from documents used for field construction.
3. Provide files and racks for document storage.
4. File documents in format in accord with Project Manual Table of Contents.
5. Maintain documents in clean, dry, legible condition.
6. Do not use record documents for field construction purposes.
7. Make documents available at all times for inspection by Architect/Engineer and CDB.

1.2 RELATED REQUIREMENTS

A. Specified elsewhere:

1. 01 33 23 - Shop Drawings, Product Data & Samples.
2. 01 78 23 - Operating & Maintenance Data.
3. 01 78 36 - Warranties & Bonds.

1.3 RECORDING

A. Label each document "PROJECT RECORD DOCUMENTS" in 2" high printed letters.

B. Keep record documents current.

C. Do not permanently conceal any work until specified information has been recorded.

D. Contract drawings: Legibly mark to record actual construction:

1. Depths of various elements of foundation in relation to survey data.
2. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
3. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.

4. Field changes of dimension and detail.
5. Changes made by change order.
6. Details not on original contract drawings.

E. Specifications and addenda: Legibly mark up each section to record:

1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
2. Changes made by change order or field order.
3. Other matters not originally specified.

F. Shop drawings: Maintain as record documents; legibly annotate drawings to record changes made after review.

G. A/E will periodically review documents to confirm they are up-to-date. Contractor payment may be withheld or reduced if record documents are not current.

1.4 SUBMITTAL

A. At completion of project, deliver record documents to A/E.

B. Accompany submittal with transmittal letter, in duplicate, containing:

1. Date.
2. Project title and number.
3. Contractor's name and address.
4. Title and number of each record document.
5. Certification that each document submitted is complete and accurate.
6. Signature of contractor, or his authorized representative.

END 01 78 39.

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid:

1. General Contractor:

a. The work to be performed under this section of the specifications shall include all labor, materials, equipment and transportation necessary for demolishing, removing, and disposing of the existing wastewater treatment plant and foundation, including disconnecting and capping of all piping. This work shall also include all soil removal or remediation required at the demolition site.

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 31 23 00 - Excavation and Fill

2. Section 32 92 19 – Seeding

3. Section 33 32 00 - Sanitary Sewerage Equipment

1.3 SUBMITTALS

A. Detailed Work Plan – This plan shall be submitted within 15 days after the issuance of the Notice to Proceed and shall detail all proposed methods and sequences of operation including, but not limited to:

1. Treatment plant appurtenance removal

2. Removal and disposal of industrial waste
   a. Provide name and license number for licensed Illinois private sewage disposal pumping contractor.

3. Dismantling procedures

4. Transportation and disposal of water tank and contents

5. Protection of existing structures and utilities

6. Site safety plan

B. Documentation of acceptance of waste materials by a permitted facility capable to dispose of said waste materials. Documentation must be provided within 7 days of delivery to permitted facility.

C. Letters of acceptance from permitted facilities and haulers. Letters shall be provided at least 14 days prior to transportation of any wastes.

D. Documentation of weight of demolished materials that were recycled.

2. PRODUCTS - NOT USED

3. EXECUTION

3.1 SEQUENCING/SCHEDULING

A. Demolition of the wastewater treatment plant shall occur before construction of the proposed wastewater treatment plant.

B. General construction sequencing shall conform to the following:

1. Site clearing and demolition
2. New wastewater treatment plant and drainage field
3. Site cleanup
4. New fencing
5. Tree replacement and site restoration

3.2 REMOVAL OF EXISTING CONSTRUCTION

A. The procedures to remove the existing wastewater treatment plant shall include, but not be limited to, the following:

1. Remove all electrical conduit and appurtenances prior to dismantling.

2. Remove and dispose all water out of the tank by a licensed Illinois private sewerage disposal pumping contractor.

3. Drain or flush all water from piping.

4. Disconnect and cap all piping.

5. Remove treatment plant in accordance with approved work plan.

6. Remove all fencing and posts down to a depth of one (1) foot below grade.

B. The foundation of the treatment plant structures shall be removed down to a depth of two (2) feet below grade or one (1) foot below any new excavation. Contractor shall be responsible for backfill of foundations abandoned in place.

C. Sand filter beds shall be removed down to a depth of six (6) inches below perforated pipe and liner. Contractor shall be responsible for backfill of removal area.

D. Blasting shall not be permitted as a method of demolition.

E. Contractor shall be responsible for repairing any damage to properties outside the limits of work caused form the construction.

3.3 DISPOSAL OF DEMOLISHED MATERIALS

A. All removed materials shall be loaded and trucked away from the site in such a manner as to not cause any hazard for passerby or damage to any existing structures or facilities. Any damage shall be repaired or replaced by the Contractor at no additional cost to the Using Agency.

B. All waste material shall be disposed of in accordance with all federal, state, and local regulations.

C. All waste materials shall become the responsibility of the Contract and the Contactor shall be responsible for the safe and proper removal and disposal of all waste materials.

D. Storage of waste materials at the site is not permitted.

E. All fees and transportation costs are the responsibility of the Contractor. The Contractor shall bear full responsibility for any and all fines against the project resulting from improper handling and disposal of the water and waste materials.

3.4 BACKFILL

A. Backfill of removal areas shall be in accordance with requirements of Section 31 23 00 Excavation and Fill.

B. Final backfill shall have positive drainage within the removal area and surrounding grade to prevent ponding.

END 02 41 16.

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid:

1. General Contractor:

a. The work to be performed under this section of the specifications shall include all labor, materials, equipment and transportation necessary for installing a concrete, concrete foundation, and concrete bases for fence post/gates.

2. Mix design must be approved by A/E.

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 01 45 29 – Testing Laboratory Services

1.3 SUBMITTALS

A. Mix design

B. Product data:

1. Portland Cement
2. Aggregates
3. Reinforcement

2. PRODUCTS

2.1 PORTLAND CEMENT

A. Portland cement shall comply with the Standard Specification for Portland Cement, ASTM C150, or Standard Specification for Air-Entraining Portland Cement, ASTM C175 and shall be Type I or IA.

2.2 CONCRETE AGGREGATES

A. Concrete aggregates shall conform to specifications for Concrete Aggregates, ASTM C33, except that aggregates failing to meet these specifications but which have been shown by special test or actual service to produce concrete of the required quality, may be used under section 2.2.C of this section where authorized by the A/E

B. Strength of Concrete

1. The determination of the proportions of cement, aggregate and water to attain the required strength, shall be made by one of the following methods.

   a. Method I: When no preliminary tests of the materials to be used are made, the water content per sack of cement shall not exceed the values in the following table. Method II shall be employed when artificial aggregates or admixtures are used.

Assumed Strength of Concrete Mixtures

Water Content in U.S. Gals Per Sack of Cement	Assumed Compressive Strength at 28-day psi
7-3/4	2500
6-3/4	3000
6	3500
5-1/2	3750
5-1/4	4000

   NOTE: In interpreting this table, surface water contained in the aggregate must be included as part of the mixing water in computing the water content.

   b. Method II: Proportions of the materials and water content, other than those shown in the above table, may be used provided that the strength quality of the concrete proposed for use, shall be established by tests, which shall be made in advance of the beginning of operations, using the consistencies suitable for the work and in accordance with Standard Method of Making Concrete Compression and Flexure Test Specimens in the Laboratory, ASTM-C-192, and with Standard Method of Test for Compressive Strength of Molded Concrete Cylinders, ASTM-C-39.

2. A curve representing the relation between the water content and the average 28 day compressive strength, or earlier strength at which the concrete is to receive its full working load shall be established for a range or earlier strength at which the concrete is to receive its full working load shall be established for range of values including all the compressive strengths called for on the drawings. The curve shall be established by at least 3 points, each point representing average values from at least 4 test specimens. Amount of water used in the concrete, as determined for a curve, shall correspond to a strength which is 15 percent greater than that called for on the drawings. No substitutions shall be made in the materials used on the work without additional tests in accordance, herewith, to show that the quality of the concrete is satisfactory.

C. Concrete Proportions and Consistency

1. The proportions of aggregate to cement for any concrete shall be such as to produce a mixture which will work readily into the corners and angles of the forms and around reinforcement with the methods of placing

employed on the work but without permitting the material to segregate or excess free water to collect on the surface.

2. The combined aggregates shall be of such composition of size that when separated on the No. 4 sieve (fine aggregate) shall not be less than 30 percent or more than 50 percent of the total unless otherwise required by the A/E.

3. The method of measuring concrete materials shall be such that the proper proportions can be accurately controlled and easily checked at anytime during the work. The received measurement shall be width rather than volume. Measurements of materials for ready-mixed concrete shall conform to the Tentative Specifications for Ready-Mixed Concrete, ASTM-C.

D. Concrete Quality

1. The allowable stresses for design are based on the specified minimum 28 day compressive strength of the concrete or on the specified minimum compressive strength at the earlier age at which the concrete may be expected to receive its full load. The strength of concrete, at specified ages for which all parts of the structure were designed, are shown on the drawings. Where not specified in the drawings, minimum 28 day compressive strength of the concrete shall be 3500 psi.

2.3 WATER

A. Water used in mixing concrete shall be clean and free from deleterious amounts of acids, alkalis, or organic materials.

2.4 REINFORCMENT (METAL)

A. Reinforcing bars shall conform to the requirements of tentative specifications for minimum requirements for the Deformations of Deformed Steel Bars for Concrete Reinforcement, ASTM- A-615/615M, and of tentative specifications for Billet-Steel Bars for Concrete Reinforcement, ASTM-A-615/615M, or tentative specifications for Rail-Steel Bars for Concrete Reinforcement, ASTM-A-616, or tentative specification for Axle-Steel Bars for Concrete Reinforcement, ASTM-A-617/617M.

1. Cleaning and Bending Reinforcement

a. Metal reinforcement, at the time concrete is placed, shall be free from all rust, scale or other coatings that will destroy or reduce the bond.

b. Bends for stirrups and ties shall be made around a pin having a diameter not less than two (2) times the minimum thickness of the bar. Bends for other bars shall be made around a pin having a diameter not less than six (6) times the minimum thickness of the bar, except that for bars larger than one (1) inch, the pin shall be not less than eight (8) times the minimum thickness of the bar. All bars shall be bent cold.

B. Welded wire fabric or cold-drawn wire for concrete reinforcement shall conform to the requirements of standard specifications for Cold-Drawn Steel Wire for Concrete Reinforcement, ASTM-A, or standard specifications for Welded Steel Wire Fabric for Concrete Reinforcement, ASTM-A-185.

2.5 PRODUCT STORAGE

A. Cement, aggregates and reinforcement shall be stored at the batch plant or work site in such a manner as to prevent deterioration or intrusion of foreign matter. Any material which has deteriorated or which has been damaged shall not be used for concrete.

3. EXECUTION

3.1 ENVIRONMENTAL CONDITIONS

A. Cold Weather Requirements

1. Adequate equipment shall be provided for heating the concrete materials and protecting the concrete during freezing or near-freezing weather. No frozen materials containing ice shall be used.

2. All concrete material and all reinforcement, forms, fillers, and ground with which the concrete is to come in contact shall be free from frost. Whenever the temperature of the surrounding air is below 40 degrees F all concrete placed in the forms shall have a temperature of between 50 degrees F and 70 degrees F, and adequate means shall be provided for maintaining a temperature of not less than 70 degrees F for 3 days or 50 degrees F for 5 days. The housing, covering or other protection used in connection with the curing shall remain in place and intact at least 24 hours after the artificial heating is discontinued. Salt or other chemicals shall not be used to prevent freezing. If the temperature of the surrounding air is less than 50 degrees F, the Contractor shall use a temperature recording device to record the temperature to prove the temperature was not less than 70 degrees F for 3 days or 50 degrees F for 5 days and provide a means to visually check the air temperature under the insulating blanket. The method for cold weather pouring and curing shall be approved by the A/E, Using Agency and CDB prior to concrete placement.

3.2 SEQUENCING/SCHEDULING

A. Provisions shall be made for maintaining concrete in a moist condition for at least 5 days after the placement of the concrete. Curing may be obtained by any one of the approved “Methods of Curing” subject to approval of the A/E.

B. No structures, structural members, or other appurtenances shall be placed upon any foundation concrete for a minimum of 7 days after the foundation pour is completed, and the 7 day cylinder test results have been reported to the A/E.

3.3 PREPARATION

A. Before placing concrete, all equipment for mixing and transporting the concrete shall be cleaned, all debris or ice shall be removed from the places to be occupied by the concrete. Forms shall be thoroughly wetted (except in freezing weather) or oiled and masonry filler units that will be in contact with concrete shall be well drenched (except in freezing weather) and the reinforcement shall be thoroughly cleaned of ice or other coatings.

3.4 INSTALLATION

A. Mixing of Concrete

1. The concrete shall be mixed until there is a uniform distribution of the materials and shall be discharged completely before the mixer is recharged.

2. For job mix concrete, the mixer shall be rotated at a speed recommended by the manufacturer and mixing shall be continued for at least 1 minute after all materials are in the mixer.

3. Ready-mixed concrete shall be mixed and delivered in accordance with the requirements set forth in Tentative Specifications for Ready-Mixed Concrete, ASTM-C-94.

B. Conveying

1. Concrete shall be conveyed from the mixer to the place of final deposit by methods which will prevent the separation or loss of the materials.

2. Equipment for chuting, pumping and pneumatically conveying concrete shall be of such size and design as to insure a practically continuous flow of concrete at the delivery end without separation of the materials.

C. Depositing

1. Concrete shall be deposited as nearly as practicable in its final position to avoid segregation due to re-handling or flowing. The concreting shall be carried on at such a rate that the concrete is at all times plastic and flows readily into the space between the bars. No concrete that has partially hardened or been contaminated by foreign material shall be deposited on the work, or shall re-tempered concrete be used.

2. When concreting is once started, it shall be carried on as a continuous operation until the placing of the panel or level. When construction joints are necessary, they shall be made in accordance with section 3.4.H, this section.

3. All concrete shall be thoroughly compacted by suitable means during the operation of placing. Whenever practical the concrete shall be compacted with an internal mechanical vibrator of such construction that 4,500 cycles per minute shall be transmitted to the concrete. The Contractor shall have, on the job site, a sufficient number of vibrators to insure that compaction

can be started immediately after the concrete has been deposited in the forms.

4. The concrete shall be thoroughly worked around the reinforcement and embedded fixtures and into the corners of the forms.

5. Where conditions make compacting difficult or where the reinforcement is congested, batches of mortar containing the same proportions of cement to sand; as used in the concrete, shall first be deposited in the forms.

D. Forms

1. Forms shall conform to the shape, lines and dimensions of the members, as shown on the drawings, and shall be substantial and sufficiently tight to prevent leakage of mortar. Any mortar that is leaked between and/or around forms or permanent surfaces shall be mechanically smoothed.

2. Forms shall be properly braced or tied together so as to maintain position and shape.

E. Removal of Forms

1. Forms shall be removed in such a manner as to insure the complete safety of the structure. In no case shall the supporting forms or shoring be removed until the members have acquired sufficient strength to support safely their weight and the load thereon. In addition, forms shall remain in place a minimum of 24 hours after the end of the concrete pour.

F. Placing Reinforcement

1. Metal reinforcement shall be accurately placed in accordance with the plans and shall be adequately secured in position by concrete or metal chairs and spacers.

G. Splices (Reinforcement)

1. In general, splices in area of critical stress shall be avoided. Splices shall provide sufficient lap to transfer the stress between bars by bond and shear.

H. Construction Joints.

1. Joints not indicated on the drawings shall be so made and located as to not impair the strength of the structure. Where a joint is to be made, the surface of the concrete shall be thoroughly cleaned. In addition, vertical joints shall be thoroughly wetted and coated with a neat cement grout immediately before placing new concrete.

2. When deemed appropriate by the A/E, the Contractor will dowel construction joints. The A/E will specify the size, location, and placement.

3.5 FIELD QUALITY CONTROL

A. Tests on Concrete

1. The Contractor shall employ and furnish an independent, qualified, testing agency, suitable to the A/E, Using Agency and CDB, for the purposes of all required testing of materials, certification of proper concrete placement during pour and work accomplished. All test results shall be reported to the A/E and the Contractor on the same day the tests are made.

2. Technicians representing the testing agency shall inspect the materials and manufacture of concrete and shall report their findings to the A/E and the Contractor. When it appears that the material furnished or work performed by the Contractor fails to fulfill specification requirements, the technician shall direct the attention of the A/E and the Contractor to such failure.

   The technician shall not act as foreman or perform other duties for the Contractor. Work will be checked as it progresses, but failure to detect any defective work or materials shall not in any way prevent later rejection when such defect is discovered, nor shall it obligate the A/E for final acceptance. Technicians are not authorized to revoke, alter, relax, enlarge, or release any requirement of the specifications nor to approve or accept any portion of the work.

3. During the progress of the work compression test specimens shall be made and cured in accordance with Standard Method of Making and Curing Concrete Compression and Flexure Test Specimens in the Field, ASTM-C-31.

   Not less than three (3) specimens shall be made for each test, nor less than one (1) test for each day's pour or for each 50 cubic yards of concrete of each class. Specimens shall be cured under laboratory conditions except that when, in the opinion of the A/E, there is a possibility of the surrounding air temperature falling below 40 degrees F the A/E may require additional specimens to be cured under job conditions.

   Specimens shall be tested in accordance with Standard Methods of Tests for Compressive Strength of Molded Concrete Cylinders, ASTM-C-39.

   The standard age of test shall be 7 days and 28 days.

4. If the average strength of the laboratory control cylinders for any portion of the structure falls below the compressive strengths called for on the drawings, the A/E shall have the right to require conditions of temperature and moisture necessary to secure the required strength and may require tests in accordance with Standard Method of Securing, Preparing and Testing Specimens of Hardened Concrete for Compressive and Flexural Strengths, ASTM-C-42 or order load tests to be made on the portions of structure so affected.

3.6 PROTECTION

A. Concrete Protection of Reinforcement

1. The reinforcement shall be protected by the thickness of concrete as shown on the drawings. Where not otherwise shown, the thickness of concrete over the reinforcement shall be as follows:

    a. Where concrete is deposited against the ground without the use of forms, not less than three (3) inches.

    b. Where concrete is exposed to the weather, or exposed to the ground, but placed in forms, not less than two (2) inches for bars more than 5/8 inches in diameter and 1-1/2 inches for bar 5/8 inches or less in diameter.

    c. In slabs and walls not exposed to the ground or to the weather, not less than ¾ inch.

    d. In beams, girders and columns not exposed to the ground or to the weather, not less than one and 1-1/2 inches. In all cases the thickness of concrete over the reinforcement shall be in accordance with ACI 318, or its latest revision. Exposed reinforcement bars intended for future use shall be protected from corrosion by concrete or other adequate coverings.

3.7 CLEAN UP OF FINAL SURFACES

A. The surface of the concrete shall be free of spalling and holes. The Contractor shall be responsible for filling in the holes with a method and materials approved by the A/E and Using Agency. Any mortar that leaks through or around a form shall be mechanically removed to provide a smooth surface matching the surround concrete surface.

END 03 30 00.

Section 26 05 00 – Common Work Results for Electrical Systems

1. GENERAL

1.1 WORK INCLUDES:

A. Base Bid: Contractor shall provide the additional general administrative and procedural requirements for electrical installations specified herein. The following is included in this Section to expand the requirements specified in the general specifications. Included in this section:

1. Rough-ins
2. Electrical Installations

2. PRODUCTS

2.1 As specified in other sections.

3. EXECUTION

3.1 EXISTING CONDITIONS

A. Contractor shall fully familiarize himself with existing project conditions.

3.2 ROUGH-IN

A. Verify final locations for rough-ins with field measurements and with the requirements of the actual equipment to be connected.

B. Refer to equipment specifications in Divisions 2 through 26 for rough-in requirements.

3.3 ELECTRICAL INSTALLATIONS

A. General: Sequence, coordinate, and integrate the various elements of electrical systems, materials, and equipment. Comply with the following requirements:

1. Coordinate electrical systems, equipment, and materials installation with other contractors and A/E.
2. Verify all dimensions by field measurements.
3. Provide chases, sleeves, slots, and openings in building components during progress of construction to allow for electrical installations.
4. Coordinate the installation of required supporting devices and sleeves to be set in poured-in-place concrete and other structural components, as they are constructed.

B. Sequence, coordinate, and integrate installations of electrical materials and equipment for efficient flow of the work.

C. Where mounting heights are not detailed or dimensioned, install systems, materials, and equipment to provide the maximum headroom possible. Coordinate all conduit routings with the existing piping, conduit, ductwork and structure.

D. Install systems, materials, and equipment to conform with approved submittal data to greatest extent possible. Conform to arrangements indicated by the Contract Documents, recognizing that portions of the work are shown only in diagrammatic form. Where coordination requirements conflict with individual system requirements, refer conflict to the Architect/Engineer.

E. Install systems, materials, and equipment level and plumb, parallel and perpendicular to other building systems and components, where installed exposed in finished spaces.

F. Install electrical equipment to facilitate servicing, maintenance, and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations.

END 26 05 00

1. GENERAL

1.1 WORK INCLUDES:

A. Base Bid: Contractor Provide

1. Building wires and cables rated 600 V and less.
2. Connectors, splices, and terminations rated 600 V and less.

1.2 DEFINITIONS

A. EPDM: Ethylene-propylene-diene terpolymer rubber.

B. NBR: Acrylonitrile-butadiene rubber.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For testing agency.

B. Field quality-control test reports.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a member company of the International Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.

1. Testing Agency's Field Supervisor: Person currently certified by the International Electrical Testing Association or the National Institute for Certification in Engineering Technologies to supervise on-site testing specified in Part 3.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Comply with NFPA 70.

2. PRODUCTS

2.1 CONDUCTORS AND CABLES

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. General Cable Corp (IL)
2. Southwire
3. Coleman Cable
4. Cablec
5. United Copper Industries

B. Manufacturers: Subject to compliance with requirements, provide products by a company specializing in manufacturing products with a minimum of three (3) years experience.

C. Copper Conductors: Comply with NEMA WC 70.

D. Conductor Insulation: Comply with NEMA WC 70 for Types THHN-THWN, XHHW and XHHW-2.

2.2 CONNECTORS AND SPLICES

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Gardner Bender.
2. Ideal Industries, Inc.
3. Ilsco.
4. O-Z/Gedney.
5. 3M.
6. Tyco Electronics.

B. Manufacturers: Subject to compliance with requirements, provide products by a company specializing in manufacturing products with a minimum of three (3) years experience.

C. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

D. Acceptable product types are as follows:

1. Taps and splices use a high pressure, permanent connection with an indent type pressure connector with insulating cover.
2. In lieu of indent type high pressure connectors, mechanical compression or bolted type connector may be used on 6AWG or larger. Connector shall have an insulating cover or shrinkable insulation equivalent to 150% conductor insulation rating.

2.3 WIRE PULLING LUBRICANT

A. Pulling lubricant shall be listed by an NRTL, water-based, polymer solution. Lubricants containing waxes or soaps are not acceptable.

B. The lubricant shall be compatible with the cable insulation and shall not cause any premature deterioration of the insulating material. When used on high voltage cable (>600V), the lubricant shall not affect the volume resistivity of any semi-conducting jacket or insulation shield present.

C. Dried residue from lubricant shall not become tacky or gum-up. Cables shall remain able to be pulled after the lubricant has dried.

D. The lubricant shall be approved by the cable manufacturer for use with their cables or wire.

E. Acceptable Manufacturers/Products are:

1. American Polywater/Polywater J.
2. ARNCO/Hydra-Lube.
3. Ideal/Aqua-Gel.
4. 3M/WL Wire Pulling Lubricant
5. Gardner-Bender/Poly-Gel

3. EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders: Copper; stranded for No. 12 AWG and larger.

B. Branch Circuits: Copper; stranded for No. 12 AWG and larger.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

A. Service Entrance: Type XHHW/XHHW-2, single conductors in raceway.

B. Exposed Feeders: Type THHN-THWN, single conductors in raceway.

C. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspaces: Type THHN-THWN, single conductors in raceway.

D. Feeders Concealed in Concrete, below Slabs-on-Grade: Type THHN-THWN, single conductors in raceway; Outside Underground: Type XHHW/XHHW-2, single conductors in raceway.

E. Exposed Branch Circuits, Including in Crawlspaces: Type THHN-THWN, single conductors in raceway.

F. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN-THWN, single conductors in raceway.

G. Branch Circuits Concealed in Concrete, below Slabs-on-Grade: Type THHN-THWN, single conductors in raceway; Outside Underground; Type XHHW/XHHW-2, single

conductors in raceway.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

A. Conceal wiring in finished walls, ceilings, and floors, unless otherwise indicated.

B. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

C. Use pulling methods including fish tape, cable, rope, and basket-weave wire/cable grips that will not damage cables or raceway.

D. Support cables according to section 260529 - "Hangers and Supports for Electrical Systems."

E. Identify and color-code conductors and cables according to section 260553 - "Identification for Electrical Systems."

3.4 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

B. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than un-spliced conductors.

1. Use oxide inhibitor in each splice and tap conductor for conductors and terminations in high humidity or moist, damp or wet locations.

C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches of slack.

3.5 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Division 26 Section "Raceways and Boxes for Electrical Systems."

END 26 05 19

Section 26 05 26 – Grounding and Bonding for Electrical Systems

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid: Contractor Provide

1. Grounding systems and equipment.

1.2 .SUBMITTALS

A. Product Data: For each type of product indicated.

B. Plans showing dimensioned as-built locations of grounding features including the following:

1. Ground rods.
2. Ground rings.
3. Grounding arrangements and connections for separately derived systems.
4. Grounding for sensitive electronic equipment.
5. Structural Steel, Water Service Piping, Concrete Reinforcement Bonding.

1.3 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

2. PRODUCTS

2.1 CONDUCTORS

A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by Code or authorities having jurisdiction.

2.2 CONNECTORS

A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

B. Bus-bar Connectors: Mechanical type, cast silicon bronze, solderless compression-type wire terminals, and long-barrel, two-bolt connection to ground bus bar.

2.3 GROUNDING ELECTRODE

A. Rod: Copper-Clad Steel

1. ¾” Diameter
2. 10’ length

3. EXECUTION

3.1 APPLICATIONS

A. Conductors: Install solid conductor for No. 12 AWG and smaller, and stranded conductors for No. 10 AWG and larger unless otherwise indicated.

B. Conductor Terminations and Connections:

1. Pipe and Equipment Grounding Conductor Terminations: Approved mechanical compression and bolted connectors.
2. Underground Connections: Approved exothermic welded connectors or high compression system.
3. Connections to Ground Rods: Approved exothermic welded connectors or high compression system.
4. Connections to Structural Steel: Approved exothermic welded connectors.
5. Connections to Concrete Reinforcement: Approved exothermic welded connectors or high compression system.

3.2 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:

1. Feeders and branch circuits.
2. Lighting circuits.
3. Receptacle circuits.
4. Single-phase motor and appliance branch circuits.
5. Three-phase motor and appliance branch circuits.
6. Flexible raceway runs.
7. Armored and metal-clad cable runs.

3.3 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Ground Bonding Common with Lightning Protection System: Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system. Bond electrical power system ground directly to lightning protection system grounding conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor, and install in conduit.

C. Bonding Interior Metal Ducts: Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install bonding jumper to bond across flexible duct connections to achieve continuity.

3.4 LABELING

A. Comply with requirements in Division 26 Section "Identification for Electrical Systems" Article for instruction signs. The label or its text shall be green.

B. Install labels at the telecommunications bonding conductor and grounding equalizer and at the grounding electrode conductor where exposed.

1. Label Text: "If this connector or cable is loose or if it must be removed for any reason, notify the facility manager."

3.5 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.

B. Grounding system will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

D. Report measured ground resistances that exceed the following values:

1. Power and Lighting Equipment or System with Capacity of 500 kVA and Less: 10 ohms.
2. Power and Lighting Equipment or System with Capacity of 500 to 1000 kVA: 5 ohms.
3. Power and Lighting Equipment or System with Capacity More Than 1000 kVA: 3 ohms.
4. Power Distribution Units or Panelboards Serving Electronic Equipment: 1 ohm(s).

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1. GENERAL

1.1 WORK INCLUDES

A. Base Bid: Contractor Provide

1. Hangers and supports for electrical equipment and systems.
2. Construction requirements for concrete bases.

1.2 DEFINITIONS

A. EMT: Electrical metallic tubing.

B. IMC: Intermediate metal conduit.

C. RMC: Rigid metal conduit.

1.3 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design supports for multiple raceways, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

B. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.

C. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.

D. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

1.4 SUBMITTALS

A. Product Data: For the following:

1. Steel slotted support systems.
2. Nonmetallic slotted support systems.

B. Shop Drawings:
1. Steel slotted channel systems. Include Product Data for components.
2. Nonmetallic slotted channel systems. Include Product Data for components.
3. Equipment supports.

1.5 QUALITY ASSURANCE

A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M,

"Structural Welding Code - Steel."

B. Comply with NFPA 70.

1.6 COORDINATION

A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 03.

B. Coordinate installation of roof curbs, equipment supports, and roof penetrations. These items are specified in Division 07 Section "Roof Accessories."

2. PRODUCTS

2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Cooper B-Line.
b. ERICO.
c. GS Metals Corp.
d. Steel City/Kindorf; Thomas & Betts Corp.
e. Unistrut; Tyco Int'l.

3. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
4. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
5. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
6. Channel Dimensions: Selected for applicable load criteria.

B. Nonmetallic Slotted Support Systems: Structural-grade, factory-formed, glass-fiber-resin channels and angles with 9/16-inch- diameter holes at a maximum of 8 inches on center., in at least 1 surface.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Cooper B-Line, Inc.; a division of Cooper Industries.
b. Fabco Plastics Wholesale Limited.
c. Seasafe, Inc.

2. Fittings and Accessories: Products of channel and angle manufacturer and

designed for use with those items.

3. Fitting and Accessory Materials: Same as channels and angles**,** except metal items which may be within a Magnetic Resonance Imaging area which shall then be non-ferrous.
4. Rated Strength: Selected to suit applicable load criteria.

C. Raceway and Cable Supports: As described in NECA 1 and NECA 101.

D. Conduit and Cable Support Devices: Steel and malleable-iron hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.

E. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.

F. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.

G. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:

1. Powder-Actuated Fasteners are prohibited.
2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated or stainless steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.

    a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    b. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

        1) Cooper B-Line, Inc.; a division of Cooper Industries.
        2) Empire Tool and Manufacturing Co., Inc.
        3) Hilti Inc.
        4) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
        5) MKT Fastening, LLC.

3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
6. Toggle Bolts: All-steel springhead type.
7. Hanger Rods: Threaded steel, zinc plated.

2.2 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

B. Materials: Comply with requirements in Division 05 Section "Metal Fabrications" for steel shapes and plates.

3. EXECUTION

3.1 APPLICATION

A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.

B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch in diameter.

C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted or other support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.

1. Secure raceways and cables to these supports with conduit clamps.

D. Spring-steel clamps and friction fit spring steel fasteners shall not be approved or used.

3.2 SUPPORT INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.

B. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.

C. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:

1. To Wood: Fasten with lag screws or through bolts.
2. To New Concrete: Bolt to concrete inserts.
3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
4. To Existing Concrete: Expansion anchor fasteners.
5. To Steel: Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69].
6. To Light Steel: Sheet metal screws.
7. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to

substrate by means that meet seismic-restraint strength and anchorage requirements.

D. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

A. Comply with installation requirements in Division 05 Section "Metal Fabrications" for site-fabricated metal supports.

B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

C. Field Welding: Comply with AWS D1.1/D1.1M.

3.4 CONCRETE BASES

A. Unless otherwise indicated, provide concrete bases of dimensions not less than 4 inches larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.

B. Anchor equipment to concrete base.

1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor bolts to elevations required for proper attachment to supported equipment.
3. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

3.5 PAINTING

A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.

1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.

B. Touchup: Comply with requirements in Division 09 for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.

C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

D. Paint all exposed conduits in public areas to match existing surfaces.

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1. GENERAL

1.1 WORK INCLUDES

A. Base Bid: Contractor Provide

1. Metal conduits, tubing, and fittings.
2. Metal wireways and auxiliary gutters.
3. Boxes, enclosures, and cabinets.

1.2 DEFINITIONS

A. GRC: Galvanized rigid steel conduit.

B. IMC: Intermediate metal conduit.

C. EMT: Electrical metallic tubing.

1.3 SUBMITTALS

A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

B. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, and attachment details.

C. Samples: For surface raceways and for each color and texture specified, 12 inches long.

D. Coordination Drawings: Conduit routing plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of items involved:

1. Structural members in paths of conduit groups with common supports.
2. HVAC and plumbing items and architectural features in paths of conduit groups with common supports.

2. PRODUCTS

2.1 METAL CONDUITS, TUBING, AND FITTINGS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Allied Tube & Conduit.
2. Crouse-Hinds (fittings).

3. Killark (fittings).
4. O-Z/Gedney(fittings).
5. RACO (fittings).
6. Republic Conduit.
7. Robroy Industries.
8. Steel City (fittings)
9. Shamrock; Thomas & Betts.
10. Western Tube and Conduit.
11. Wheatland Tube Company.

B. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. GRC: Comply with ANSI C80.1 and NFPA 70.

D. IMC: Comply with ANSI C80.6 and NFPA 70.

E. EMT: Comply with ANSI C80.3.

F. FMC: Comply with NFPA 70 1; zinc-coated steel.

G. LFMC: Flexible steel conduit with PVC jacket and complying with NFPA 70.

H. Fittings for Metal Conduit: Comply with NEMA FB 1.

1. Conduit Fittings for Hazardous (Classified) Locations: Comply with NFPA 70.
2. Fittings for EMT:

    a. Material: Steel.
    b. Type: Compression.

3. Expansion Fittings: PVC or steel to match conduit type, complying with NFPA 70, rated for environmental conditions as installed, and including flexible external bonding jumper.

I. Joint Compound for IMC or GRC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

2.2 METAL WIREWAYS AND AUXILIARY GUTTERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Cooper B-Line.
2. Hoffman.
3. Square D.
4. Wiegmann/Hubbell.

B. Description: Sheet metal, complying with NFPA 70 and NEMA 250, Type 1 unless otherwise indicated, and sized according to NFPA 70.

1. Metal wireway installed outdoors shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Outdoor wireways shall be minimum Type NEMA 3R.

C. Fittings and Accessories: Include covers, couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.

D. Wireway Covers: Screw-cover type unless otherwise indicated.

E. Finish: Manufacturer's standard enamel finish.

2.3 BOXES, ENCLOSURES, AND CABINETS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Cooper Crouse-Hinds.
2. Appleton Electric.
3. Erickson.
4. FSR Inc.
5. Hoffman.
6. Killark.
7. Kraloy.
8. Milbank.
9. O-Z/Gedney.
10. RACO.
11. Robroy Industries.
12. Spring City.
13. Stahlin(non-metallic enclosures).
14. Thomas & Betts.
15. Wiremold.
16. Wiegmann.

B. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.

C. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and NFPA 70.

D. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, ferrous alloy or aluminum, as Type FD, with gasketed cover.

E. Nonmetallic Outlet and Device Boxes: Comply with NEMA OS 2 and NFPA 70.

F. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

G. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and NFPA 70, cast aluminum or galvanized, cast iron as required or indicated, with gasketed cover.

H. Box extensions used to accommodate new building finishes shall be of same material as recessed box.

I. Device Box Dimensions: 4 inches square by 2-1/8 inches deep.

J. Gangable boxes are prohibited.

K. Cabinets:

1. NEMA 250, Type 1, Type 3R or Type 12, as indicated or required, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
2. Hinged door in front cover with flush latch and concealed hinge.
3. Key latch to match panelboards.
4. Metal barriers to separate wiring of different systems and voltage.
5. Accessory feet where required for freestanding equipment.
6. Nonmetallic cabinets shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

L. Exterior Box Locations

1. Polymer concrete with reinforced heavy-weave fiberglass with neoprene gasket and cover and stainless steel tamper proof hardware.
2. Label cover with service provided.
3. Boxes located in vehicular traffic areas to have 15,000 lb rated lids.

3. EXECUTION

3.1 RACEWAY APPLICATION

A. Indoors: Apply raceway products as specified below unless otherwise indicated:

1. Exposed, Not Subject to Physical Damage: *IMC*.
2. Exposed, Not Subject to Severe Physical Damage: *IMC* unless indicate otherwise.
3. Exposed and Subject to Severe Physical Damage: *IMC*. Raceway locations include the following

4. Concealed in Ceilings and Interior Walls and Partitions: EMT.
5. Damp or Wet Locations: *IMC* with water-tight compression fittings unless otherwise indicated on plans or per NEC
6. Underground Installations:
   a. More than Five (5) Feet from Foundation Wall: Use thick wall nonmetallic conduit.
   b. Within Five (5) Feet from Foundation Wall: Use rigid steel conduit.
   c. Under Slab on Grade: Use thick wall nonmetallic conduit.
      1. Minimum Size: 1 inch unless otherwise specified.

7. Outdoor Locations, Above Grade: Use rigid steel conduit.
8. Boxes and Enclosures: NEMA 250, Type 1.

B. Minimum Raceway Size: 3/4 inch trade size.

C. Raceway Fittings: Compatible with raceways and suitable for use and location.

1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
2. EMT: Use compression, steel fittings. Comply with NEMA FB 2.10.
3. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.

D. Do not install aluminum boxes in contact with concrete or earth.

E. Install surface raceways only where indicated on Drawings.

F. Do not install nonmetallic conduit where ambient temperature exceeds 120 deg F (49 deg C).

3.2 INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.

B. Keep raceways at least 12 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.

C. Complete raceway installation before starting conductor installation.

D. Comply with requirements in Division 26 Section "Hangers and Supports for Electrical Systems" for hangers and supports.

E. Arrange stub-ups so curved portions of bends are not visible above finished slab.

F. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches of changes in direction.

G. Conceal conduit and EMT within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.

H. A. Support conduit within 12 inches of enclosures to which attached.

I. Stub-ups to Above Recessed Ceilings:

1. Use EMT for raceways.
2. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.

J. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Threaded conduit joints for RGC/IMC shall employ listed, electrically conductive compound. Follow compound manufacturer's written instructions.

K. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.

L. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch trade size and insulated throat metal bushings on 1-1/2-inch trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.

M. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.

N. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.

O. Cut conduit perpendicular to the length. For conduits 2-inch trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.

P. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.

Q. Surface Raceways:

1. Install surface raceway with a minimum 2-inch radius control at bend points.
2. Secure surface raceway with screws or other anchor-type devices at intervals not exceeding 48 inches and with no less than two supports per straight raceway section. Support surface raceway according to manufacturer's written instructions. Tape and glue are not acceptable support methods.

R. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings according to NFPA 70.

S. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all raceways at the following points:

1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
2. Where otherwise required by NFPA 70.

T. Expansion-Joint Fittings:

1. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F of temperature change for PVC conduits. Install fitting(s) that provide expansion and contraction for at least 0.000078 inch per foot of length of straight run per deg F of temperature change for metal conduits.
2. Install expansion fittings at all locations where conduits cross building or structure expansion joints.
3. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at time of installation. Install conduit supports to allow for expansion movement.

U. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches of flexible conduit for recessed and semi-recessed luminaires, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.

1. Use LFMC in damp or wet locations subject to severe physical damage.
2. Use LFMC or LFNC in damp or wet locations not subject to severe physical damage.

V. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.

W. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.

X. Locate boxes so that cover or plate will not span different building finishes.

Y. Support boxes of two gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose.

Z. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

AA. Set metal floor boxes level and flush with finished floor surface.

3.3 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Division 26 Section "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

3.4 PROTECTION

A. Protect coatings, finishes, and cabinets from damage and deterioration.

1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.

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1. GENERAL

1.1 WORK INCLUDES

A. Base Bid: Contractor Provide

1. Identification for raceways.
2. Identification of power and control cables.
3. Identification for conductors.
4. Warning labels and signs; including arc flash hazard and PPE requirements.
5. Instruction signs.
6. Equipment identification labels.
7. Miscellaneous identification products.

1.2 SUBMITTALS

A. Product Data: For each electrical identification product indicated.

B. Samples: For each type of label and sign to illustrate size, colors, lettering style, mounting provisions, and graphic features of identification products.

C. Identification Schedule: An index of nomenclature of electrical equipment and system components used in identification signs and labels.

1.3 QUALITY ASSURANCE

A. Comply with ANSI A13.1 and IEEE C2.

B. Comply with NFPA 70.

C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.

D. Comply with ANSI Z535.4 for safety signs and labels.

E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

1.4 COORDINATION

A. Coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual; and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.

B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.

C. Coordinate installation of identifying devices with location of access panels and doors.

D. Install identifying devices before installing acoustical ceilings and similar concealment.

2. PRODUCTS

2.1 NAMEPLATES AND LABELS

A. Engraved, Plastic-Laminated Labels, Signs, and Instruction Plates: Engraving stock melamine plastic laminate, 1/16-inch minimum thick for signs up to 20 square inches, or 8 inches in length; 1/8-inch thick for larger sizes. Engraved legend in white letters on black face and white letters on red face for emergency power punched for mechanical fasteners. Warning signs shall be black letters on orange face.

B. Fasteners for Plastic-Laminated and Metal Signs: Self-tapping stainless steel screws or number 10/32 stainless steel machine screws with nuts and flat and lock washers.

C. Locations: Install equipment/system circuit/device identification as follows:

1. Apply equipment identification labels of engraved plastic-laminate on each major unit of electrical equipment in building, including central or master unit of each electrical system. This includes communication/signal/alarm systems, unless unit is specified with its own self-explanatory identification. Except as otherwise indicated, provide single line of text, with 1/2-inch-high lettering on a 1-inch-high label (2-inch-high where two lines are required), white lettering in brown field. Use white lettering in a red field for Emergency Power Circuits. Text shall match terminology and numbering of the Contract Documents and shop drawings. Apply labels for equipment specified.
2. Apply circuit/control/item designation labels of engraved plastic laminate for disconnect switches, breakers, pushbuttons, pilot lights, motor control centers, and similar items for power distribution and control components above, except panelboards and alarm/signal components, where labeling is specified elsewhere. For panelboards, provide framed, typed circuit schedules with explicit description and identification of items controlled by each individual breaker.
3. Apply self-adhesive, black on clear, mylar heated activated labels as manufactured by Duratype or Brother on each wiring device faceplate. Label width shall be 3/8 inch and include the panel designation and circuit source. Place label at the bottom of faceplate.
4. Apply factory supplied labels to each modular communication faceplate. Labels shall be typed and include the telephone extension or the port identification utilizing owner's prescribed nomenclature.
5. Install labels at locations indicated and at locations for best convenience of viewing without interference with operation and maintenance of equipment.

2.2 WIRE IDENTIFICATION

A. Provide wire markers on each conductor in panelboard gutters, pull boxes, outlet and junction boxes, and at load connection. Identify with branch circuit or feeder number

for power and lighting circuits, and with control wire number as indicated on schematic and interconnection diagrams and equipment manufacturer's shop drawings for control wiring.

B. Wire Insulation Color:

120/240V, 1 Phase

1. Phase A Black
2. Phase B Blue

3. Neutral White
4. Ground Green

C. Code all wire and cable larger than color coded sizes available from manufacturer by application of electrical plastic tape in colors specified. Apply tape in uniform manner encircling wire or cable. Half-lap tape for length of cable as required by Local Authorities for NEC. Tape shall be 3M, Plymouth or Permacel.

D. Maintain consistent coding throughout installation to ensure proper phase identification.

E. Control wiring may use numbered or lettered marker tape. Record wiring so marked on project documents. Marker tape shall be 3M Scotch Code, Panduit Insta-Code, T & B E-Z, Stanco Tuff-Code, Bradypack or Electrovert.

2.3 CONDUIT SYSTEM IDENTIFICATION

A. Identify all conduits run exposed or above suspended ceilings.

B. Identification of conduits larger than 1 inch shall be by identification markers and color coding. Conduits smaller than 1 inch shall be by color coding.

1. Identification Markers:

a. Shall be standard pipe markers with black lettering on safety orange background.
b. Markers shall identify voltage and functional use of the conduit, such as "120/240 Volt"

2. Color Coding:

a. Color code shall consist of strips of paint circling the conduit approximately 3 inches long. The strips can either be painted or applied by tape.
b. All junction boxes shall be painted.
c. Apply stripes at intervals indicated in Part 3.
d. Color code shall match facility existing.

3. Pull and Junction Boxes

a. Concealed or above accessible ceilings:

b. All junction or pull boxes above accessible ceilings or concealed above access panels shall be clearly marked with an indelible marker with the circuit identification and source (panel).
c. Other system pull or junction boxes shall be clearly marked with mylar tape labels and include the type of system (i.e. Fire Alarm, Nurse Call, etc.) and source panel, zone or destination.

4. Recessed or exposed

a. All pull or junction boxes visible to the public shall be clearly marked using the plastic nameplates outline in 2.1 above.
b. Nameplates shall include information as outlined for concealed boxes.

3. EXECUTION

3.1 INSTALLATION

A. Verify identity of each item before installing identification products.

B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.

C. Apply identification devices to surfaces that require finish after completing finish work.

D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.

E. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.

F. System Identification Color-Coding Bands for Raceways and Cables: Each color-coding band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 30-foot maximum intervals in straight runs, and at 15-foot maximum intervals in congested areas. Apply additional identification within three feet of all floor, ceiling and wall penetrations and equipment terminations.

G. Cable Ties: For attaching tags. Use general-purpose type, except as listed below:

1. Outdoors: UV-stabilized nylon.
2. In Spaces Handling Environmental Air: Plenum rated.

3.2 IDENTIFICATION SCHEDULE

A. Power-Circuit Conductor Identification, More than 600 V: For conductors in vaults, pull and junction boxes, manholes, and hand-holes, use nonmetallic plastic tag and a separate tag with the circuit designation. Attach using weatherproof plastic ties.

B. Install instructional sign including the color code for grounded and ungrounded conductors.

C. Conductors to Be Extended in the Future: Attach phase marker tape per voltage color code to conductors and list source.

D. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.

1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.
2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.
3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual.

E. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable.

1. Install underground-line warning tape for both direct-buried cables and cables in raceway.

F. Workspace Indication: Install floor marking tape to show working clearances in the direction of access to live parts. Workspace shall be as required by NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces. Marker tape shall be 2 inch wide vinyl tape design and listed for the application.

G. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Provide engraved, plastic laminated.

1. Comply with 29 CFR 1910.145.
2. Apply to exterior of door, cover, or other access.
3. For equipment with multiple power or control sources, apply to door or cover of equipment including, but not limited to, the following:

a. Power transfer switches.
b. Controls with external control power connections.

H. Operating Instruction Signs: Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with approved legend where instructions are needed for system or equipment operation.

I. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual.

END 26 05 53

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid: Contractor Provide
   1. Branch-circuit panelboards.
   2. Disconnecting and Over-Current Protective Devices.

1.2 DEFINITIONS

A. VPR: Voltage protection rating.

B. SPD: Surge protective device.

1.3 REFERENCES

A. Section 260529 – Hangers and Supports for Electrical Systems.

B. NFPA 70 – National Electrical Code.

1.4 SUBMITTALS

A. Product Data: For each type of panelboard, switching and over-current protective device, surge protective device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

B. Shop Drawings: For each panelboard and related equipment.

   1. Include dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings.
   2. Detail enclosure types and details for types other than NEMA 250, Type 1.
   3. Detail bus configuration, current, and voltage ratings.
   4. Short-circuit current rating of panelboards and overcurrent protective devices.
   5. Include evidence of NRTL listing for series rating of installed devices.
   6. Adjustable circuit breaker manufacturer, catalog number, electronic trip type and series; complete information necessary for OCPD selective coordination.

C. Field Quality-Control Reports:

   1. Test procedures used.
   2. Test results that comply with requirements.
   3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

D. Panelboard Schedules: For installation in panelboards. Submit final versions after load balancing.

E. Operation and Maintenance Data: For panelboards and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:

1. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.
2. Time-current curves, including selectable ranges for each type of overcurrent protective device that allows adjustments.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain distribution panelboards, branch circuit-appliance panelboards and over-current protective devices, components, and accessories from single source from single manufacturer; isolation panelboards may be a different manufacturer from other panelboards but shall be a single source from the same manufacturer.

B. Drawings indicate maximum dimensions for panelboards including clearances between panelboards and adjacent surfaces and other items. Verify and comply with indicated maximum dimensions.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified NRTL/agency, and marked for intended location and application.

D. Comply with NEMA PB 1.

E. Comply with NFPA 70.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Remove loose packing and flammable materials from inside panelboards; Provide temporary electric heating to prevent condensation.

B. Handle and prepare panelboards for installation according to NECA 407 and NEMA PB 1.

1.7 PROJECT CONDITIONS

A. Environmental Limitations:

1. Do not deliver or install panelboards until spaces are enclosed and weathertight, wet work in spaces is complete and dry, work above panelboards is complete, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
2. Rate equipment for continuous operation under the following conditions unless otherwise indicated:

a. Ambient Temperature: Not exceeding 23 deg **F** to plus 104 deg F.
b. Altitude: Not exceeding 6600 feet.

B. Service Conditions: NEMA PB 1, usual service conditions, as follows:

1. Ambient temperatures within limits specified.
2. Altitude not exceeding 6600 feet.

1.8 COORDINATION

A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

2. PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PANELBOARDS

A. Enclosures: Flush- and surface-mounted cabinets.

1. Rated for environmental conditions at installed location.
   a. Outdoor Locations: NEMA 250, Type 3R.

2. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.
3. Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.
4. Finishes:

   a. Panels and Trim: Steel, factory finished immediately after cleaning and pre-treating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.
   b. Back Boxes: Galvanized steel.

5. Directory Card: Inside panelboard door, mounted in metal frame with transparent protective cover.

B. Incoming Mains Location: Top and bottom.

C. Phase, Neutral, and Ground Buses:

1. Material: Hard drawn, 98% conductivity copper.
2. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.
3. Isolated Ground Bus: Where indicated, adequate for branch-circuit isolated ground conductors; insulated from box.
4. Extra-Capacity Neutral Bus: Where indicated, neutral bus rated 200 percent of phase bus and NRTL listed as suitable for nonlinear loads.

D. Conductor Connectors: Suitable for use with conductor material and sizes.

1. Material: Tin-plated aluminum or hard-drawn copper, 98 percent conductivity.

2. Main and Neutral Lugs: Mechanical type.
3. Ground Lugs and Bus-Configured Terminators: Mechanical type.
4. Feed-Through Lugs: Mechanical type, suitable for use with conductor material. Locate at opposite end of bus from incoming lugs or main device.
5. Sub-feed (Double) Lugs: Mechanical type suitable for use with conductor material. Locate at same end of bus as incoming lugs or main device.
6. Extra-Capacity Neutral Lugs: Where indicated, rated 200 percent of phase lugs mounted on extra-capacity neutral bus.

E. Future Devices: Mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.

F. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.

2.2 BRANCH-CIRCUIT PANELBOARDS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton Electrical Inc.; Cutler-Hammer.
2. General Electric Co; GE Consumer & Industrial.
3. Siemens Energy & Automation, Inc.
4. Square D; Schneider Electric.(BOD)

B. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.

C. Mains: Circuit breaker or lugs as indicated on plans/schedules.

D. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

E. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.

2.3 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton Electrical Inc.; Cutler-Hammer.
2. General Electric Co; GE Consumer & Industrial.
3. Siemens Energy & Automation, Inc.
4. Square D; Schneider Electric.

B. Molded-Case Circuit Breaker: Comply with UL 489, with interrupting capacity to meet available fault currents.

1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.

2. Adjustable Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.
3. Electronic trip circuit breakers with rms sensing; field-replaceable rating plug or field-replicable electronic trip; and the following field-adjustable settings:

    a. Instantaneous trip.
    b. Long- and short-time pickup levels.
    c. Long- and short-time time adjustments.
    d. Ground-fault pickup level, time delay, and I^2t response.

4. Molded-Case Circuit-Breaker Features and Accessories:

    a. Standard frame sizes, trip ratings, and number of poles.
    b. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.
    c. Shunt Trip: 120V trip coil energized from separate circuit, set to trip at 75 percent of rated voltage.
    d. Handle Padlocking Device: Fixed attachment, for locking circuit-breaker handle in off position.
    e. Handle Clamp: Loose attachment, for holding circuit-breaker handle in on position.
    f. Enclosure: NEMA 1, flush or surface mount as indicated on plans or per instructions for equipment being served.

2.4 ACCESSORY COMPONENTS AND FEATURES

A. Accessory Set: Include tools and miscellaneous items required for over-current protective device test, inspection, maintenance, and operation.

3. EXECUTION

3.1 EXAMINATION

A. Receive, inspect, handle, and store panelboards according to NECA 407.

B. Examine panelboards before installation. Reject panelboards that are damaged or rusted or have been subjected to water saturation.

C. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install panelboards and accessories according to NECA 407 and NEMA PB 1.1.

B. Equipment Mounting: Install floor mounted panelboards on concrete bases, 4-inch nominal thickness. Comply with requirements for concrete base specified Division 26 Hangers and Supports for Electrical Systems and install per requirements in Division 03.

1. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around full perimeter of base.
2. For panelboards, install anchorage devices that extend through concrete base and anchor into structural concrete floor.
3. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
4. Install anchor bolts to elevations required for proper attachment to panelboards.
5. Attach panelboard to the vertical finished or structural surface behind the panelboard.

C. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from panelboards.

D. Mount panelboard cabinet plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.

E. Install overcurrent protective devices and controllers not already factory installed.

1. Set field-adjustable, circuit-breaker trip ranges.

F. Install filler plates in unused spaces.

G. Unless otherwise indicated, stub four 1-inch empty conduits from panelboard into accessible ceiling space or space designated to be ceiling space in the future.

H. Arrange conductors in gutters into groups and bundle and wrap with wire ties.

I. Comply with NECA 1.

3.3 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs complying with Division 26 Section "Identification for Electrical Systems."

B. Create a directory to indicate installed circuit loads after balancing panelboard loads; incorporate Owner's final room designations. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.

C. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."

D. Device Nameplates: Label each branch circuit device in distribution panelboards with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."

3.4 FIELD QUALITY CONTROL

A. Acceptance Testing Preparation:

1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
2. Test continuity of each circuit.

B. Tests and Inspections:

1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

C. Panelboards will be considered defective if they do not pass tests and inspections.

D. Prepare test and inspection reports, including a certified report that identifies panelboards included and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.5 ADJUSTING

A. Adjust moving parts and operable component to function smoothly, and lubricate as recommended by manufacturer.

B. Set field-adjustable circuit-breaker trip ranges per engineers over-current protective device settings.

C. Load Balancing: After Substantial Completion, but not more than 60 days after Final Acceptance, measure load balancing and make circuit changes.

1. Measure as directed during period of normal system loading.
2. Perform load-balancing circuit changes outside normal occupancy/working schedule of the facility and at time directed. Avoid disrupting critical 24-hour services such as fax machines and on-line data processing, computing, transmitting, and receiving equipment.
3. After circuit changes, recheck loads during normal load period. Record all load readings before and after changes and submit test records.
4. Tolerance: Difference exceeding 20 percent between phase loads, within a panelboard, is not acceptable. Rebalance and recheck as necessary to meet this minimum requirement.

3.6 PROTECTION

A. Temporary Heating: Apply temporary heat to maintain temperature according to manufacturer's written instructions.

END 26 24 16

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid:

1. Contractor Provide:

a. Electrical connections to all equipment indicated on the drawings and in specifications.

1.2 RELATED SECTIONS

A. Section 260533 – Conduit.

B. Section 260519 – Building Wire and Cable.

1.3 REFERENCES

A. NEMA WD 1 - General Purpose Wiring Devices.

B. NEMA WD 6 - Wiring Device Configurations.

C. ANSI/NFPA 70 - National Electrical Code.

1.4 REGULATORY REQUIREMENTS

A. Conform to requirements of ANSI/NFPA 70.

B. Furnish products listed and classified by a NRTL as suitable for purpose specified and shown.

1.5 COORDINATION

A. Coordinate work with all other Contractors.

B. Obtain and review shop drawings, product data, and manufacturer's instructions for equipment furnished under other sections.

C. Determine connection locations and requirements with the supplying Contractor.

D. Sequence rough-in of electrical connections to coordinate with installation schedule for equipment.

E. Sequence electrical connections to coordinate with start-up schedule for equipment.

F. Allow for locations within 15 feet of those shown on the Drawings without additional charges.

2. PRODUCTS

Not Used.

3. EXECUTION

3.1 EXAMINATION

A. Verify that equipment is ready for electrical connection, wiring, and to be energized.

3.2 ELECTRICAL CONNECTIONS

A. Make electrical connections in accordance with equipment manufacturer's instructions.

B. Make conduit connections to equipment using flexible conduit. Use liquid-tight flexible conduit with watertight connectors in damp or wet locations.

C. Make wiring connections using wire and cable with insulation suitable for temperatures encountered in heat producing equipment.

D. Provide suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.

E. Install disconnect switches, controllers, control stations, and control devices as indicated.

F. Modify equipment control wiring with terminal block jumpers as indicated.

G. Provide interconnecting conduit and wiring between devices and equipment where indicated.

END 26 27 27

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid:

1. Contractor Provide:

a. Fusible switches.
b. Nonfusible switches.
c. Fuses.

1.2 REFERENCES

A. NEMA KS 1 - Enclosed Switches.

B. NFPA 70 - National Electrical Code.

1.3 SUBMITTALS

A. Submit under provisions of 01 33 23

B. Product Data: Provide switch ratings and enclosure dimensions.

C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of Product.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with NECA Standard of Installation.

1.5 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing Products specified in this Section with minimum three years documented experience.

1.6 REGULATORY REQUIREMENTS

A. Conform to requirements of NFPA 70.

B. Furnish products listed and classified Independent Testing Laboratory for purpose specified and shown.

2. PRODUCTS

2.1 MANUFACTURERS

A. Square D.

B. (IL) Eaton.

C. Siemens.

2.2 ENCLOSED SWITCHES

A. Fusible Switch Assemblies: NEMA KS 1, Type HD load interrupter enclosed knife switch with externally operable handle interlocked to prevent opening front cover with switch in ON position. Handle lockable in OFF position. Fuse clips: Designed to accommodate Class R fuses.

B. Nonfusible Switch Assemblies: NEMA KS 1, Type HD load interrupter enclosed knife switch with externally operable handle interlocked to prevent opening front cover with switch in ON position. Handle lockable in OFF position.

C. Enclosures: NEMA KS 1.

1. Interior Dry Locations: Type 1.
2. Exterior Locations: Type 3R.

2.3 FUSES

A. Manufacturers:

1. Bussman.
2. Gould.
3. Little Fuse.

B. Description: Dual element, current limiting, time delay, one-time fuse, 600 volt (480V Operation)or250V (208V Operation, NRTL Class RK 1.

C. Interrupting Rating: 200,000 rms amperes.

3. EXECUTION

3.1 INSTALLATION

A. Install disconnect switches where indicated.

B. Install fuses in fusible disconnect switches.

C. Provide adhesive label on inside door of each switch indicating UL fuse class and size for replacement.

END 26 28 16

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid:

1. General Contractor:

a. The work to be performed under this section of the specifications shall include all labor, and material required to perform the Clearing and Grubbing. Consult with A/E or Using Agency prior to removing any trees or shrubs. Remove surface debris, rubbish, snow and water without unnecessary excavation of topsoil and subsoil. Clear minimum area of site necessary to facilitate the proposed grading of plant life and grass. Remove trees and shrubs. Remove stumps and root system of trees and shrubs. Excavate Topsoil and stockpile reusable topsoil for later use. Remove and dispose of all excess materials, equipment, trash and debris used for or resulting from the work included in this Section.

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 32 90 00 - Planting

2. Section 33 34 51 - Drainage Field System

1.3 REGULATORY REQUIREMENTS

A. Coordinate clearing Work with Using Agency. Conform to applicable local, state and federal codes for legal disposal of debris. Burning and/or on-site disposal of materials is prohibited. Make all arrangements for disposal sites unless the Using Agency designates special locations. All expenses for disposal shall be borne by the Contractor. Bidders shall carefully investigate all aspects of surplus material disposing operations.

B. Prior to depositing surplus material at any off-site location, obtain a written agreement between Contractor and the owner of the property on which the disposal of the material is proposed. The agreement shall state that the owner of the property gives permission for the Contractor to enter and deposit material of a particular classification on the owner's property at no expense to the Using Agency and shall include any other conditions pertinent to the situation as agreed upon by each party. A copy of said agreement shall be furnished to the Using Agency.

C. Follow standard horticultural practice for cutting and/or pruning of trees, brush, and shrubs.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to store at the site, and handle in a manner which will maintain the materials in their original manufactured or fabricated condition until ready for use.

2. PRODUCTS

2.1 TREE WOUND PAINT

A. Bituminous based paint of standard manufacture specially formulated for tree wounds.

3. EXECUTION

3.1 PREPARATION

A. Verify that existing plant life designated to remain is tagged or identified. Approximate limits of construction are shown on the drawings. Mark limits of clearing in the field by flagging, fencing, painting the ground or other approved methods. Vehicles used to haul soft or wet material over streets or pavements shall be sufficiently watertight to prevent deposits on the streets or pavements. In all cases where any materials are dropped from the vehicles of the Contractor, they shall clean up the same, and keep the crosswalks, street and pavements clean and free from debris.

3.2 PROTECTION

A. Locate, identify, and protect utilities that remain, from damage, including notification of JULIE Illinois One-Call System. Install temporary fences (minimum 3’ high) to protect trees, plant growth, and features outside limits of construction to remain as final landscaping. Protect benchmarks, control monuments and existing structures from damage or displacement. Road and Walks- Keep roads and walks free of dirt and debris at all times. Coordinate all protection with the Using Agency.

B. Trees, shrubs, and Existing Facilities - Trees and vegetation to be left standing shall be protected from damage incident to clearing, grubbing, and construction operations by the erection of barriers or by such other means as the circumstances require. Where trees are to be protected or preserved, no excavation and grubbing, except as directly required for construction, shall be performed within the radius of spread of tree branches. No topsoil materials or construction equipment will be permitted to be stored within the radius of spread of tree branches.

3.3 PRUNING

A. Trim trees designated to be left standing within the cleared areas of dead branches 1 ½” or more in diameter; and trim branches to heights and in a manner as indicated. Neatly cut limbs and branches to be trimmed close to the bole of the tree or main branches. Paint cuts more than 1 ¼” in diameter with an approved tree wound paint.

3.4 CLEARING

A. Clear areas required for access to site and execution of Work. Remove paving, curbs, and sidewalks. Remove stumps and root system to a depth of 24". Clear undergrowth and deadwood, without disturbing subsoil. Clear site of plant life and grass.

B. Prune branches and/or roots of trees to be preserved or where they interfere with or obstruct construction operations. If exposed, bend and relocate main lateral roots and tap roots. Engage a state-certified arborist or qualified tree surgeon who shall cut roots and/or branches with sharp pruning instruments without breaking or chopping. Qualified personnel shall paint all cuts with standard tree paint or equivalent which is waterproof, antiseptic, elastic and free of kerosene, coal, tar, creosote, and other harmful substances. Where required, extend pruning procedures to restore the natural shape of the entire tree or shrub.

C. Damaged Trees - Vegetation designated to remain but that has been damaged by site clearing activities and deemed non-functional by the Using Agency or A/E, shall be replaced by the Contractor with vegetation of the same genus and species at Contractor's expense.

3.5 GRUBBING

A. Grubbing shall consist of the removal and disposal of stumps, roots larger than 3-inches in diameter, and matted roots from the designated grubbing areas. Material to be grubbed, together with logs and other organic or metallic debris not suitable for foundation purposes, shall be removed to a depth of not less than 18" below the original surface level of the ground in areas indicated to be grubbed and in areas indicated as construction areas under this contract, such as areas for buildings, and areas to be paved. Depressions made by grubbing shall be filled with suitable material and compacted to make the surface conform with the original adjacent surface of the ground.

3.6 DISPOSAL OF MATERIALS

A. All timber on the project site noted for clearing and grubbing is the property of the Using Agency where clearing and grubbing occurs. Contractor shall remove the timber from the project area and place it within the park at the direction of the site superintendent. Should the Using Agency advise the Contractor that he does not want the timber, it shall become the property of the Contractor, who shall then remove it from the project site and dispose it off Site.

B. Logs, stumps, roots, brush, rotten wood, and other refuse from the clearing and grubbing operations shall be disposed of outside the limits of Using Agency controlled land at the Contractor's responsibility, except when otherwise directed by the site superintendent. If approved by local and state authorities, material to be burned shall be burned at approved locations and in a manner to prevent damage to existing structures and appurtenances, construction in progress, trees, and other vegetation. The Contractor shall be responsible for compliance with all Federal and State laws and regulations and with reasonable practice relative to the building of fires. Burning or other

disposal of refuse and debris and any accidental loss or damage attendant thereto shall be the Contractor's responsibility. All material shall be treated as surplus and disposed of off-site.

END 31 11 00.

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid:

1. General Contractor:

a. The work to be performed under this section of the specifications shall include all labor, materials, equipment and transportation necessary for trenching, backfill, compaction, grading and site related items.

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 01 45 29 - Testing Laboratory Services
2. Section 02 41 16 - Structure Demolition
3. Section 31 25 00 - Erosion and Sedimentation Controls

B. Other Standards: American Society for Testing and Material (ASTM).

2. PRODUCTS

2.1 MATERIALS DESCRIPTION

A. Cohesionless materials include gravels, gravel sand mixtures, sands, and gravelly sands exclusive of clayey and silty material, materials which are free draining and for which impact compaction will not produce a well defined moisture density relationship curve and for which the maximum density by impact methods will generally be less than by vibratory methods.

B. Cohesive materials include silts and clays generally exclusive of sands and gravel materials for which impact compaction will produce a well defined moisture density relationship curve.

C. Impervious cohesive materials shall be defined as CH or CL materials as defined by the Unified Soil Classification System.

D. Permeable materials shall be defined as either non cohesive or cohesive materials that do not meet the specifications for impervious cohesive materials.

E. Waste Materials:

1. Waste materials include excess suitable materials and all materials unsuitable for use in the work.

    a. Unsuitable materials include all materials that contain debris, roots, organic matter, frozen matter, rock (with any dimension greater than one half the loose layer thickness) or other materials that are determined by A/E as too wet or otherwise unsuitable for providing a stable subgrade or stable foundation for structures.

    b. Suitable materials include materials that are free of debris, roots, organic matter, refuse, ashes, cinders, frozen matter and that which is free of rock with any dimension greater than one half of the specified loose layer thickness.

2. All waste materials (excess suitable and all unsuitable) encountered during trenching shall be removed from the immediate work area and disposed of, as directed by the A/E.

F. Borrow Materials:

1. Borrow materials include all fill materials and topsoil obtained from approved locations.

2. Borrow shall include all excavating, handling, and final disposal of materials as specified.

    a. Borrow, as required to bring the excavations to the lines and grades indicated, shall be furnished by the Contractor without additional compensation.

3. Borrow Areas: All offsite borrow areas shall be arranged for by the Contractor, subject to approval by the A/E.

G. Backfill Materials:

1. Backfill materials include satisfactory soil materials from excavations and borrow areas.

2. Materials shall not contain gravel, stones, or shale particles.

3. Backfill shall be free of roots or other organic matter, refuse, ashes, cinders, frozen earth or other deleterious matter.

H. Topsoil Materials:

1. Topsoil materials include other unsuitable materials retained as the result of stripping borrow areas or other excavation.

I. Granular Base Materials:

1. Material shall be crushed stone with the following gradation:

Sieve Size	Percent Passing
1 ½"	100
1"	95 ± 5
1/2"	75 ± 15
No. 4	43 ± 13
No. 16	25 ± 15
No. 200	8 ± 4

2. Material shall not have loss of more than 15% after 5 cycles when tested for soundness with sodium sulfate as described in ASTM C88.

3. Material shall have a percentage of wear not to exceed 50% as determined by ASTM C131.

4. Material shall be used in locations as shown on the Plans.

5. Material shall be IDOT Designation CA-6.

J. Bedding Materials:

1. Materials shall be crushed stone with the following gradation:

Sieve Size	Percent Passing
1 ½"	100
1"	95 ± 5
1/2"	45 ± 15
No. 4	5 ± 5

2. Materials shall be IDOT Designation CA-7.

K. Soil Stabilization Fabric:

1. The fabric for ground stabilization shall consist of woven or nonwoven filaments of polypropylene, polyester, or polyethylene. Nonwoven fabric may be needle punches, heat-bonded, resin-bonded, or combination thereof. The fabric shall be resistant to ultraviolet radiation and be according to the following.

Physical Properties	Ground Stabilization
Grab Tensile Strength (lb) - ASTM D 4632 [1/]	200 min.
Grab Elongation @ Break (%) - ASTM D 4632 [1/]	12 min.
Burst Strength (psi) - ASTM D 3786 [2/]	250 min.
Trapezoidal Tear Strength (lb) - ASTM D 4533 [2/]	75
Weight (oz/sq yd) - ASTM D 3776	4.0 min.

[1/] For woven fabric, test results shall be referenced to orientation with warp or weave, whichever the case may be. Both woven and nonwoven fabric shall be tested wet.

[2/] Test results may be obtained by manufacturer's certification.

2.2 SOILS CLASSIFICATIONS

A. Satisfactorily soil materials shall be nonswelling materials with plastic indexes of less than 20 and liquid limits less than 40. Soil meeting these requirements under the Unified Soil Classification System for the following soil groups are acceptable:

Classification	Description
GW	Well graded gravels, gravel-sand mixtures, little or no fines.
GP	Poorly graded gravels, gravel-sand mixtures, little or no fines.
GM	Silty gravels, poorly graded gravel-sand-silt mixtures.
SW	Well graded sands, gravelly sand, little or no fines.
SP	Poorly graded sands, gravelly sands, little or no fines.
SM	Silty sands, poorly graded sand-silt mixture.
SC	Silty sands, sand-clay mixtures.
ML	Inorganic silts, and very fine sands with slight plasticity.
CL	Silty or sandy clays of low plasticity.

B. Unsatisfactorily soil materials consist of all other materials including the following that are classified under the Unified Soil Classification System:

Classification	Description
OL	Organic silts and organic silty clays of low plasticity.
MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
CH	Inorganic clays of high plasticity, fat clays.
OH	Inorganic clays of medium to high plasticity, organic silts.
PT	Peat and other highly organic soils

3. EXECUTION

3.1 SITE PREPARATION

A. Protection of Existing Trees: See section 31 11 00.3.2.

B. Salvageable Improvements: Items indicated to be salvaged shall be carefully removed and stored on the Using Agency's premises as directed by the Own Using Agency.

C. Existing Utilities:

1. Locate existing underground utilities in the areas of work before starting earthwork operations. Where utilities are to remain in place, provide adequate means of protection during earthwork operations.

2. Should uncharted, or incorrectly charted piping or other utilities be encountered during excavation, consult the utility owner immediately for directions. Cooperate with the Using Agency and public and private utility companies in keeping their respective services and facilities in operation. Repair damaged utilities to the satisfaction of the utility owner.

3. Do not interrupt existing utilities servicing facilities occupied and used by the Using Agency or others, except when permitted in writing by the A/E and only after acceptable temporary utility services have been provided. Completely remove from the site underground utilities indicated to be removed. Coordinate with local utility companies for shut off services if lines are active.

D. Use of Explosives:

1. Blasting is not anticipated to be required during construction. If blasting is required, the Contractor shall not transport or use explosives on the site without notification and approval of the Using Agency and A/E in writing. The Contractor shall comply with existing State and Federal laws regarding transporting, storing and handling explosive materials. The Contractor shall be solely responsible for the handling, storage and use of explosive materials.

E. Temporary Protection:

1. Barricade open excavations occurring as part of this work and post with warning lights. Operate warning lights as recommended by authorities having jurisdiction.

2. Protect structures, utilities, sidewalks, pavements and other facilities from damages caused by settlement, lateral movement, undermining, washout and other hazards created by excavation operations.

3. Temporary covering or enclosures and temporary heat shall be provided as necessary to protect bottoms of excavations from freezing and frost action when the atmospheric temperature is less than 35 degrees F. Work shall not be installed on frozen excavation bases or subbases.

F. Temporary Erosion Control:

1. The Contractor shall be responsible for keeping surface water runoff free from silt, sediment and earth fill material in areas disturbed by all construction activities.

G. Private Easements

1. Where excavation occurs on private easement, stockpile topsoil and

replace after construction on disturbed areas.

H. Rock Excavation:

1. No additional or separate payment will be made for rock excavation.

3.2 EXCAVATION

A. Excavation consists of the removal and disposal of materials encountered when establishing the required grade elevations and subgrade elevations.

B. Earth excavation includes the removal and disposal of pavements and other obstructions visible on the ground surface, underground structures and utilities indicated to be replaced and removed, material of any classification indicated in data on subsurface conditions and all other materials encountered that are not classified as rock excavation or unauthorized excavation.

C. Rock excavation consists of the removal and disposal of materials encountered that cannot be excavated with a 3/4 cubic yard capacity power shovel without drilling and blasting, or continuous use of a ripper or other special equipment, except such materials that are classified as earth excavations.

1. Typical of materials classified as rock are boulders 1/2 cubic yard or more in volume, solid rock, rock in ledges, and rock hard cementitious aggregate deposits.

2. Intermittent drilling that may be performed to increase production and is not necessary to permit excavation of the material encountered will be classified as earth excavation.

D. Unauthorized excavation consists of removal of materials beyond indicated elevations without the specific direction of the A/E. Unauthorized excavation shall be replaced by backfilling and compacting as specified for authorized excavations of the same classification, unless otherwise directed by the A/E

E. Additional excavation consists of carrying excavations deeper and replacing the excavated material as directed by the A/E if unsuitable materials are encountered at the required subgrade elevations. When excavation has reached required subgrade elevations, the Contractor shall notify the A/E, who will make an inspection of conditions.

F. Excavation for Structures:

1. Conform to the elevations and dimensions shown on the drawings, within a tolerance of plus or minus 0.10', and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, and other construction, and for inspection.

2. In excavating for footings and foundations, take care not to disturb the bottom of the excavation. Excavate by hand to final grade just before concrete reinforcement is placed. Trim bottoms to the required lines and grades to leave a solid base to receive concrete.

3.3 TRENCH EXCAVATION AND BACKFILL

A. Excavation:

1. Excavation shall include all site clearing and preparation where required, trenching, subgrading for pipe, bell holes, cell sheeting, shoring, bracing and dewatering of trenches and other excavations, protecting of adjacent property, pipe placement, backfilling, all specified backfill consolidation and surfacing, removal and replacement of pavements and surfacing, and other work necessary and required, unless separate payment has been established in the contract documents for the individual items.

2. Trenches shall be excavated to lines and grades necessary to accept the pipes shown on the plans or as established by the A/E.

3. Trenches in all instances shall be kept to minimum widths to a point 12" above top of pipe. Remaining trench to be kept to minimum width as near as possible. Contractor is to use sheeting or an approved method to insure voidance of excessive widths. Trenching under existing utilities shall be by hand method and utility supported by approved methods.

4. Trenches in rock shall be excavated to minimum widths as specified. All rock and shale excavation not suitable for backfill materials shall be removed from the site and disposed of at the expense of the Contractor. All work in connection with blasting operations, including necessary and proper safety precautions, shall be performed under expert supervision and in compliance with all laws, ordinances, and applicable safety code requirements and regulations. The Contractor shall in no way hold the Using Agency or A/E responsible for any damage or suits caused by his blasting operation.

5. If overdigging occurs, all loosened earth must be removed and brought back to grade with approved fine aggregate (3/4" max.), compacted to 95% density, without additional cost to the Using Agency.

6. Any material below the specified plan grade which is not, or cannot be made stable by drainage or compaction, in the opinion of the A/E or his representative, shall be removed and replaced with an approved select granular material (3/4" max.).

7. Trenches shall be reasonably dry when trench bottoms are prepared. When bedding is not used, a required continuous trough shall be hand excavated or shaped to receive the bottom quadrant of the pipe, and in addition, bell holes, if required, shall be excavated so that after placing pipe, only the pipe barrel (not the bells) receives bearing pressure from the trench bottom.

8. Tunneling operations shall be done only where such is required by the plans, provided that the adjacent trench depth and soil conditions are adequate and suitable for such construction. All bracing, shoring, sheeting, pipe placement, and backfill shall be the responsibility of the Contractor to be performed in compliance with OSHA regulations.

B. Backfill:

1. All trenches and excavations shall be backfilled immediately after pipe is laid therein, unless other protection of the pipe line is directed. Under no circumstances, however, shall water be permitted to rise in unbackfilled trenches after pipe has been placed or during the laying of pipe. Material used for backfill shall not contain stones, frozen earth, debris, or earth with an exceptionally high void content. For backfill from bedding material to a level of 12" over the top of the pipe for full length, only approved granular material or selected materials shall be used and placed in uniform layers not exceeding 6" in depth up each side. Each layer shall be placed, then carefully and uniformly tamped so as to eliminate the possibility of later displacement. Any excess backfill material shall be removed from the jobsite. Where unsuitable backfill material is encountered, the Contractor shall, at his own expense, provide and place acceptable backfill material. All sod and surfacings damaged by trenching operations shall be replaced or reseeded as directed by the A/E.

2. Puddling or water flooding for consolidation backfill material shall be subject to approval of the A/E. In general, the addition of water should be limited to achieving optimum moisture content for tamping procedures.

3. Whenever trenches or other excavations made by the Contractor in the performance of work under this Contract have not been properly filled, or where settlement has occurred at any time prior to the final acceptance of the entire work covered by the contract, to the extent that the top of the backfill is below the original ground surface, such trenches shall be refilled and the backfill surface compacted and smoothed to conform to the elevations of the adjacent ground surface. The Contractor shall be responsible for all damaged which might occur as a result of the settlement of trench or other backfill made by him in the fulfillment of his contract within and during a period of one year from and after the date of final acceptance of entire project thereof by the Using Agency or CDB, including (a) the cost to the Using Agency or CDB's of all claims for damages filed with and court action brought against, the said Using Agency or CDB's for an on account of such damage, and (b) the repair to the satisfaction of the Using Agency or CDB's of any and each pavement, driveway, curb, slab, walk, lawn, or structure damages by such backfill settlement.

3.4 SHORING AND BRACING

A. Slope the sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible either because of space restrictions or stability of material excavated.

B. Maintain sides and slopes of excavations in a safe condition until completion of backfilling.

C. Provide shoring and bracing to comply with local codes and authorities having jurisdiction.

D. Provide materials for shoring and bracing, such as sheet piling, uprights, stringers and cross braces, in good serviceable condition.

E. Maintain shoring and bracing in excavations regardless of the time period excavations will be open. Carry down shoring and bracing as the excavation progresses.

3.5 DEWATERING

A. Prevent surface water and subsurface or ground water from flowing into excavations and flooding the project site and surrounding area.

B. Do not allow water to accumulate in excavations. Remove water from excavations to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to the stability of subgrades and foundations. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey the water away from the site.

C. Convey water removed from excavations and rain water to collector run off areas. Do not use trench excavations for site utilities as temporary drainage ditches.

D. Provide an adequate system to lower and control the groundwater in order to permit excavation, construction of structures and the placement of fill materials to be performed under dry conditions. Install sufficient dewatering equipment to pre drain the water-bearing strata above and below the bottom of structure foundations, drains, sewers, and other excavations.

E. Reduce the hydrostatic head in the water-bearing strata below structure foundations, drains, sewers, and other excavations to the extent that the water level and piezometric water levels in the construction areas are below the prevailing excavation surface at all times.

F. Maintain piezometric water level a minimum of 1' below the excavation surface.

G. Prior to excavation below groundwater level, place the dewatering system into operation to lower the water levels as required and then operate it continuously 24 hours a day, 7 days a week until drains, sewers and structures have been constructed, including placement of fill materials, and dewatering is no longer required.

H. Dispose of water removed from excavations in such a manner so as to not endanger public health, property, and portions of the work under construction or completed. Dispose of water in such a manner that will cause no

inconvenience to others engaged in work about the site. Provide sumps, sedimentation tanks, and other flow control devices as required by governing authorities.

I. Provide complete standby equipment, installed and available, for immediate operation as may be required, to adequately maintain dewatering on a continuous basis in the event that any part of the system becomes inadequate or fails. In the event dewatering requirements are not satisfied due to inadequacy or failure of the dewatering system, perform such work as may be required to restore damaged structures and foundation soils at no additional expense.

3.6 MATERIAL STORAGE

A. Stockpile excavated materials classified as satisfactory soil material where directed until required for backfill or fill. Place, grade and shape stockpiles for proper drainage.

B. Locate and retain fill materials away from edges of excavations.

C. Dispose of excess soil material and waste materials as herein specified.

3.7 MOISTURE CONTROL

A. Where the subgrade of layer of soil material must be moisture conditioned before compaction, uniformly apply water to the surface of subgrade, or layer of soil material to prevent free water from appearing on the surface during or subsequent to compaction operations.

B. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.

1. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing or pulverizing, until the moisture content is reduced to a satisfactory value.

3.8 BACKFILLING STRUCTURES

A. Ground Surface Preparation

1. Remove vegetation, debris, unsatisfactory soil materials, obstructions and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface.

2. When the existing ground surface has a density less than that specified under "Compaction" for the particular area classification, break up the ground surface, pulverize, moisture condition to the optimum moisture content, and compact to the required depth and percentage of maximum density.

B. Backfilling shall not be performed until:

1. Construction has been completed below finish grade including, where applicable, dampproofing, waterproofing, and perimeter insulation.

2. Underground utility locations have been recorded, inspection and testing have been performed and approval has been granted.

3. Concrete formwork has been removed.

4. Shoring and bracing have been removed and voids have been filled with satisfactory materials. Temporary sheet piling driven below the bottom of structures shall be cut off and removed in a manner that will prevent settlement of the structure or utilities or left in place, if required.

5. Trash and debris have been removed.

6. Permanent or temporary horizontal bracing is in place.

7. Concrete has attained its design strength, but no sooner than seven (7) days after it was placed.

8. A sufficient portion of the structure has been built to resist the imposed load.

C. Perform backfilling simultaneously on all sides of the structures.

D. Exercise extreme care in the use of heavy equipment in backfill areas.

3.9 PLACEMENT AND COMPACTION

A. Granular Base Material

1. General: Granular base material shall be placed in the areas and to the cross sections and thickness as indicated on the plans.

2. Place granular base material on prepared subgrade in layers not to exceed 6" compacted depth.

3. Maintain optimum moisture content for compacting material during placement operations.

4. The material shall be compacted by rolling or mechanical tampers.

5. Base material shall be compacted to 90% of relative density, or 95% conforming to ASTM D1557, whichever is applicable.

6. Thickness and grade tolerances shall be plus or minus 0.10'.

B. Minimum Density Requirements:

1. Compact soil to not less than the following percentages of maximum dry

density for soils which exhibit a well defined moisture density relationship determined in accordance with ASTM D1557; and not less than the following percentages of relative density determined in accordance with ASTM D2049, for soils which will not exhibit a well defined moisture density relationship.

a. Structures: Compact top 12" of subgrade and each layer of backfill or fill material at 95% maximum dry density.

b. Pavements: Compact top 12" of subgrade and each layer of backfill or fill material at 95% maximum dry density.

c. Unpaved Areas: Compact top 6" of subgrade and each layer of backfill or fill material at 85% maximum dry density.

3.10 GRADING

A. General:

1. Uniformly grade areas within the limits of site grading including adjacent transition areas. Smooth finished surfaces within specified tolerances, compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.

2. The degree of finish required will be that ordinarily obtainable from either blade grader or scraper operations.

B. Ditches:

1. Finish ditches to ensure proper flow and drainage. Conduct final rolling operations to produce a hard, uniform and smooth cross section.

C. Unpaved Areas:

1. Finish areas to receive topsoil to within not more than 0.10' above or below the required subgrade elevations, compacted as specified, and free from irregular surface changes.

D. Surface of Fill Under Slabs:

1. Grade the surface of fill under slabs smooth and even, free of voids, compacted as specified, and to required elevation. Provide final grades within a tolerance of not more than 0.10' above below the required subgrade elevation.

3.11 SOIL STABILIZATION FABRIC INSTALLATION

A. The Contactor shall furnish and install on the earth subgrade where shown on the Drawings, soil stabilization fabric to stabilize the ground surface.

B. Fabric shall be delivered to the job site in such a manner as to facilitate handling and incorporation into the work without damage. Material shall be

stored in such a manner as to prevent exposure to direct sunlight and damage by other construction activities.

C. Prior to placing the fabric, the subgrade shall be cleared of sharp objects which might damage the fabric. The fabric shall be unrolled directly on top of the earth subgrade. If overlapping is required to cover the area, the overlap shall be at least three feet (3'). Should the fabric be damaged during any step of installation, the torn or punctured section shall be covered by another piece of fabric cut large enough to cover the damaged area and meet the three (3) foot overlap requirement. At curves, intersections or other areas where fabric is overlapped, care shall be taken to spread the base course aggregate in the same direction as the fabric overlap. Metal tracked machinery shall not come in direct contact with the fabric. In the case of subgrades, all wheel tracks or ruts in excess of 3 in. in depth shall be graded smooth or otherwise filled with soil to provide a reasonably smooth surface. Fabric may be installed on the application surface either by hand or by mechanical methods, provided that the fabric is not torn or the surface rutted.

3.12 FIELD QUALITY CONTROL

A. The testing service will inspect and approve subgrades and fill layers before additional construction work is performed.

B. Field density tests will be performed in accordance with ASTM D 1556 (sand cone method), ASTM D 2167 (rubber balloon test), or ASTM D 6938 (nuclear density gauge test) as applicable.

C. If, in the opinion of the A/E, based on testing service reports and inspection, the subgrade or fills which have been placed are below the specified density, additional compaction and testing will be required at no additional expense to the Using Agency or CDB.

3.13 MAINTENANCE

A. Protection of Graded Areas:

1. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.

2. Repair and re-establish grades in settled, eroded and rutted areas to the specified tolerances.

3. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify the surface, re shape and compact to the required density prior to further construction. Use hand tamping for re-compaction over underground utilities.

3.14 DISPOSAL OF EXCESS AND WASTE MATERIALS

A. Transport all trash, debris, trees, stumps, roots, ashes, cinders, or other refuse to an approved disposal area off Using Agency’s property. Excess excavated

material shall be placed at locations approved by the Using Agency and as directed by the A/E.

3.15 GRANULAR TRENCH BACKFILL

A. Granular trench backfill is a Class I aggregate material placed above the initial backfill and extending up to existing grade. It is the intent to backfill all street and driveway crossings and areas where new water lines and new sewer lines will be under the street roadbed with granular trench backfill. The cost of these aggregates and their installation shall be included in the bid price. Granular trench backfill shall be compacted to 95% maximum dry density.

END 31 23 00.

31 25 00 - Erosion and Sedimentation Controls

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid:

1. General Contractor:

a. The work to be performed under this section of the specifications shall include all labor, materials, equipment and transportation necessary for providing sediment and erosion controls for all exposed areas within the project limits, throughout the duration of the contract, including any warranty periods. These controls shall include temporary erosion control, temporary sediment control, and final erosion control.

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 31 23 00 - Excavation and Fill

2. Section 32 92 19 - Seeding

1.3 SUBMITTALS

A. Shop drawings: All shall be submitted in accordance with applicable requirements of Division 1. All shall be made within 45 days prior to anticipated placement of material.

B. Product data: Reports shall include: Source and location of material, name and address of producer, and type and name of material.

2. PRODUCTS

2.1 TEMPORARY EROSION CONTROL

A. Shall include protection of all exposed surfaces within the project limits, by surface grading/rolling, surface water diversion, temporary seeding and/or mulching, or by temporary cover. Alternate methods may be submitted by the Contractor for review and approval by the A/E.

2.2 TEMPORARY SEDIMENT CONTROL

A. Shall include silt fence, silt dike, straw bale dikes, temporary sediment checks, etc. Sediment controls shall be placed as required to maintain all sediment within the project boundaries. Sediment controls shall be inspected and cleaned/maintained as necessary to maintain function, following each major

runoff event. All temporary sediment controls shall be removed, and all surfaces protected upon project completion.

2.3 PERMANENT SEDIMENT CONTROLS

A. As required; shall be as shown on the drawings. Permanent sediment controls shall be constructed and maintained by the Contractor, until accepted at project completion.

2.4 FINAL EROSION CONTROL

A. Shall include final seeding and mulching. Disturbed slopes steeper than 3:1 (horizontal:vertical) shall also require erosion protection fabric in place of the mulch specified in the seeding and mulching specification section. Erosion control fabric shall be utilized as follows:

1. 3:1 to 2:1 Slope, S150 as manufactured by North American Green, Regular Curlex I Excelsior Blanket as manufactured by American Excelsior Company, or Lanklok S2 as manufactured by Propex.

2. 2:1 to 1:1 Slope, SC150 as manufactured by North American Green or Mid-Velocity Curlex II Excelsior Blanket as manufactured by American Excelsior Company, or Lanklok CS2 as manufactured by Propex.

2.5 SEDIMENT CONTROL

A. Shall include silt fence, silt dike, straw bale dikes, temporary sediment checks, etc. Sediment controls shall be placed as required to maintain all sediment within the project boundaries. Sediment controls shall be inspected and cleaned/maintained as necessary to maintain function, following each major runoff event. All temporary sediment controls shall be removed, and all surfaces protected upon project completion. Permanent sediment controls shall be constructed and maintained until accepted at project completion. Permanent sediment controls, if required, shall be as shown on the drawings.

3. EXECUTION

3.1 CONSTRUCTION REQUIREMENTS

A. Methods: The Contractor shall install control measures as shown on the plans and as necessary to limit erosion and prevent sediment from leaving the project site. The control measures shall be built in accordance with the project plans, specification and detail drawing, as well as the use of good construction practices.

END 31 25 00.

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid:

1. General Contractor:

a. The work to be performed under this section of the specifications shall include all labor, materials, equipment and transportation necessary for supplying and installing a chain link fence six feet (6') in height around the property when called on for the Drawings and specified herein. Installation shall be made in a workmanlike manner by skilled mechanics experienced in erection of this type of fence.

1.2 RELATED WORK

A. Specified Elsewhere:

1. N/A

1.3 SUBMITTALS

A. Shop drawings:

1. Dimensions
2. Materials
3. Installation requirements

2. PRODUCTS

2.1 CHAIN LINK FENCE

A. Fabric: Aluminum coated chain link #9 gauge, woven in a 2-inch diamond mesh, top and bottom selvage to have a barbed finish. Barbing to be done by cutting wire on the bias thus creating sharp point. Basic steel wire, to be aluminum coated, Class II, chain link, per ASTM Specification A 491-71.

B. Tension Wire: The aluminum-coated tension wire shall have a minimum tensile strength of 80,000 pounds per square inch.

C. Privacy Slats: Type P-V consists of polyethylene privacy insert slats hand inserted vertically into standard mesh chain link fabric after the fence installation per ASTM Specification F3000. Color to be selected by the Using Agency.

2.2 CHAIN LINK FENCE

A. Fabric: Aluminum coated chain link #9 gauge, woven in a 2-inch diamond mesh, top and bottom selvage to have a barbed finish. Barbing to be done by cutting wire on the bias thus creating sharp point. Basic steel wire, to be aluminum coated, Class II, chain link, per ASTM Specification A 491-71.

B.

2.3 BARBED WIRE - ALUMINUM COATED STEEL

A. Barbed wire to be of the four (4) point pattern composed of three (3) strands of 12-1/2-gauge line wires with 14 gauge barb spaced on 5 inch centers. The minimum weight of aluminum coating .30 ounces and .25 ounces, respectively, per square foot of wire surface.

2.4 POSTS

A. Rolled Formed Option

1. Intermediate Line Posts - Intermediate posts shall be per ASTM F-1043 Group II and shall be 2-1/4" x 1-5/8" weighing 2.72 pounds per foot and have a minimum tensile strength of 45,000 pounds per square inch.

2. Top Rail - Top rail shall be 1-5/8" x 1-1/4" roll formed sections. Top rail shall pass through intermediate posts tops and form a continuous brace within each stretch of fence and be securely fastened to terminal posts.–

3. End, Corner, and Pull Posts - End, corner and pull posts shall be 3-1/2" x 3-1/2" roll formed sections with integral fabric loops, 5.14 pounds per foot. Posts for wing gates shall be according to the following gate leaf widths, and set in the following concrete foundation depths:

		Lbs. per Lin. Ft.	Depth In Concrete
Up to 6'	3-1/2" x 3-1/2" roll formed sections	5.14	3'0"
Over 6' to 13'	4" OD	9.11/6.56	3'0"
Over 13' to 18'	6-5/8" OD	18.97	3'6"
Over 18'	8-5/8" OD	24.70	4'0"

4. Gate Frames - Gate Frames shall be 1.90-inch OD pipe, connected with fittings and riveted at each corner. Each frame shall have three-eighths inch (3/8") diameter adjustable truss rods. Gates shall have positive type latching devices with provision for padlocking and drive gates shall have a center plunger rod, catch, and semiautomatic outer catches.

5. Braces - Brace pipe shall be the same as required for the top rail and shall be installed midway between the top rail and the bottom of fabric and shall extend from the terminal post to the first adjacent line post. Braces shall be securely fastened to posts by heavy pressed steel and/or malleable fittings, then securely trussed from line post to base of terminal post with a three-eighths inch (3/8") diameter truss rod and tightener. (Braces are required only in heights of six feet (6') or higher. May be used in lower heights if area dictates.)

6. Intermediate Post Tops - Intermediate post tops shall be of pressed steel or galvanized semi-steel. When barbed wire is specified, then the base is to include pressed steel extension arms to accommodate the number of barbed wire lines specified.

7. Miscellaneous - All posts, rails, and appurtenances shall be hot-dipped, zinc coated steel per ASTM Specifications F-1043 Group I-A or I-C, whichever is applicable. Pipe posts shall have tops, which exclude moisture. End, corner pull, and gate posts shall be braced with the same material as top rail and trussed to intermediate posts with three-eighths inch (3/8") rods and tighteners. Each post shall be set in a concrete foundation having a minimum diameter of ten inches (10") and at least thirty-six inches (36") deep. Line posts shall be evenly spaced ten feet (10') or less apart.

B. Tubular Option

1. Posts- All posts used in the construction of this fence shall be hot-dipped galvanized. All pipe uprights and rails shall be pipe conforming to ASTM F-1043 Group I-A or I-C.

2. Intermediate Line Posts- The intermediate posts shall be two and one-half inches (2-1/2") outside diameter (OD) evenly spaced in line of fence no further apart than ten feet (10') on centers. Concrete foundation depth shall be thirty-six inches (36").

3. Terminal Posts- All end, corner and pull posts shall be three inches (3") outside diameter (OD) with a pull post set at the midway point of all lines 500 feet or longer and at all changes of direction and/or grade of 15 degrees or more. A pull post shall also be placed at each point of radius for a curved line where radius has an internal angle of 30 degrees or more, and still maintaining the maximum 500 feet.

4. Gate Posts- Posts for swing gates shall be three inches (3") outside diameter (OD) for each gate leaf up to 7'-6" (15 foot opening double leaf).

	POST SIZE	DEPTH
Gate leaf up to 7'-6"	3" OD	3'0"
Gate leaf over 7'-6" to 13' wide.....	4" OD	3'0"
Gate leaf over 13' to 18' wide.....	6-5/8" OD	3'6"
Gate leaf over 18'	8-5/8" OD	4'0"

Gate posts, shall be equipped with tops so designed to exclude moisture.

5. Top Rail- The top rail shall be one and five-eighths (1-5/8") inches outside diameter (OD) pipe provided with couplings approximately every twenty feet (20'). Couplings are to be an outside sleeve type at least seven inches (7") long. The top rail is to pass through the line post tops and form a continuous brace from end to end of each stretch of fence.

6. Braces- Brace pipe shall be the same as required for the top rail.

7. Intermediate Post Tops - Intermediate post tops shall be of pressed steel or galvanized semi-steel. When barbed wire is specified then the base is to include pressed steel extension arms to accommodate the number of barbed wire lines specified.

8. Gate Frames- Gate frames shall be 1.90 inch OD pipe, connected with fittings and riveted at each corner. Each frame shall have three-eighths inch (3/8") diameter adjustable truss rods. Gates must be properly braced to eliminate any possible sagging. Hinges shall be of sufficient strength and design to permit easy and trouble-free operation. All gates shall be equipped with a positive type, latching, device with a means for padlocking. All double leaf gates for drive entrances shall be equipped with center plunger rods, catch and semiautomatic outer catches (usually referred to as hold-backs) to secure gates in open position.

C. Tension Wire

1. The tension wire shall be number W 2.5 conforming to the requirements of AASHTO M32. Except when used with vinyl coated fabric, the wire shall have a minimum zinc coating of 2.0 ounces per square foot of surface. With aluminum fabric and aluminum-coated fabric, an aluminum coating, meeting the requirements of the fabric coating may be used. With vinyl coated fabric, the coating shall meet the same material and thickness requirements as the coating for the fabric.

3. EXECUTION

3.1 INSTALLATION

A. Fabric- Shall be connected to line posts with 7 gauge wire clips every 14 inches; to top rail with 9 gauge wires every 24 inches; to terminal, corner, and gate posts by integrally weaving into the post or by using 1/4" x 3/4" tension bars tied to the post every 14 inches with 11 gauge 1 inch wide steel bands and 3/8 inch diameter bolts and nuts; to tension wire with 11 gauge hog rings every 24 inches.

B. Post Setting- Shall be of sufficient length to extend the full length of concrete footing. Footings to be ten inches, (10") in diameter for the intermediate posts and twelve inches (12") in diameter for the terminal posts. Concrete for the footings shall be capable of attaining, a strength of 2,500 psi in twenty-eight (28) days.

C. Top Rail - Shall be securely fastened to the terminal posts by heavy pressed steel brace bands and steel rail end connections.

D. Braces- Shall be installed midway between the top rail and the bottom of fabric and shall extend from the terminal post to the first adjacent line post. Braces shall be securely fastened to posts by heavy pressed steel and/or malleable fittings, then securely trussed from line post to base of terminal post with a three-eighths inch (3/8") diameter truss rod and tightener. (Braces are

required only in heights of six feet (6') or higher. May be used in lower heights if area dictates.)

E. The fence shall be erected in line and to grade as provided by the A/E. All concrete footings shall extend approximately one inch (1") above grade and shall slope away from the post to provide proper drainage.

F. The fabric, tension wire and barbed wire shall be stretched to proper tension between terminal posts and securely fastened to the framework members. The bottom of the fabric shall be held as uniformly as is practicable to the finished grade.

3.2 CLEAN UP

A. Upon the completion of the installation, all debris created by the installation shall be removed from the premises of the Using Agency or disposed of as directed by his agents.

END 32 31 00.

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid:

1. General Contractor:

a. The work to be performed under this section of the specifications shall include all labor, and material required to furnish, transport, temporarily store, plant and establish trees, shrubs, vines and other materials. It shall also include all incidental operations such as mulching, wrapping, care of living plants and replacement of unsatisfactory plants.

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 31 11 00 - Clearing and Grubbing

1.3 Warranties

A. One year plus one growing season.

2. PRODUCTS

2.1 PLANTS: TREES, SHRUBS, VINES AND SEEDLINGS

A. Trees, shrubs, vines and seedlings shall conform to the standards adopted by the American Association of Nurserymen.

B. Quality of Plant Material:

1. Unless otherwise specified plants shall be high quality nursery grown representatives of their normal species and varieties. They shall have average or normal well developed branches, together with vigorous root systems. Plants shall be free from insects, diseases, sunscald, knots, stubs, or other objectionable disfigurements. Thin weak plants shall not be accepted. Plants must show appearance of normal health and vigor in strict accordance with these specifications.

2. Trees shall be free of branches (undetermined) no higher from the ground line than 1/2 the total height of the tree; shall have single leaders, be well branched, and with reasonably straight stems. This requirement shall cover all species unless otherwise specified in detailed specifications

3. Plants shall be true to their name as specified.

4. Wherever the word "specimen" is used, it denotes trees that are symmetrical, exceptionally heavy and full branched. When more than one is required, all shall be uniform in size and shape.

C. Acceptable tree species. Final selection to be made by Using Agency. Other tree species may be considered with approval by the Using Agency.

Common Name	**Scientific Name**
White Oak	*Quercus alba*
Red Oak	*Quercus rubra*
Black Oak	*Quercus velutina*
Shingle Oak	*Quercus imbricaria*
Shagbark Hickory	*Carya ovata*
Mockernut Hickory	*Carya tomentosa*
Black Walnut	*Juglans nigra*
Black Cherry	*Prunus serotina*
American Elm	*Ulmus americana*
Slippery Elm	*Ulmus rubra*

3. EXECUTION

3.1 TREE REPLACEMENT

A. For purposes of replacement, a tree is considered a woody, perennial plant having a single main stem or trunk, the diameter of which is 4 inches or more at a point 4.5 feet above the highest ground level at the base of the tree. Those having diameter less than 4 inches will be considered saplings. A multiple-stem tree that forks below the 4.5 foot point of measurement will be considered a cluster of individual trees. A tree that forks at or above the 4.5 foot point of measurement will be considered a single tree.

B. The Contractor shall keep a log of all trees removed. Tree replacement shall be at a 1:1 ratio of tree caliper-inch removed to caliper-inch replaced. Tree replacement species and location is to be coordinated with the Using Agency. Guidance for site selection and a list of acceptable tree species are included in this specification.

3.2 WORKING CONDITIONS

A. Tree planting shall be performed only when water and soil conditions are favorable for such operations. Operations will be suspended or postponed whenever conditions are unfavorable for such work.

3.3 PRE-PLANTING AND TREE SELECTION CRITERIA

A. Identify the Soil series by consulting with Using Agency or describe in detail the soil characteristics.

B. Special soil considerations (such as excessive water, standing water) must be identified prior to planting.

C. Observe and record additional site restrictions.

D. Species and site information must be analyzed to determine if the species matches the site.

3.4 TREE AND SITE SELECTION STANDARDS

A. Trees

1. All tree species must be selected and matched to site.

2. No park grade trees shall be utilized.

3. Planting stock shall be free of insect and disease problems.

4. Trees with known incompatible grafts shall not be used.

5. Containerized stock, balled and burlapped trees and transplanted trees will have a minimum of 3/4 inch caliper and a maximum of a 3" caliper and will meet or exceed American Standards for Nursery Stock. Use of seedlings or the transplanting of larger trees will need prior approval.

6. All excessive soils above root flare including excessive soil packed above the root flare must be removed before or during tree planting.

B. Site Selection

1. Adequate space shall be provided to allow for unobscured and non-detrimental growth of the tree.

2. The following guides shall be used unless otherwise specified in a local ordinance:

   a. Right of ways must have a minimum of five feet.
   b. Trees shall not be planted within 30 feet of a corner or traffic intersection
   c. Trees shall not be planted within 15 feet of a utility pole.
   d. Trees between the height of 25 and 40 feet may not be planted closer than 20 feet of a utility line.
   e. Only small trees of less than 25 feet or 10 feet less than the height of the overhead utility line can be planted within 20 feet of a utility line.
   f. Large trees with a mature height of over 40 feet can be planted no closer to the utility line than 30-50 feet depending upon species.

3. The final location for all trees is to be selected by the Using Agency.

3.5 TREE PLANTING TECHNIQUES

A. Trees shall be planted with the root flare at grade for all areas except those areas with excessive water.

B. In areas where seepage is a problem, the first priority will be to select flood plain species or trees that are resistant to excessive water. A secondary

strategy will be to plant the trees no higher than 2-3 inches above grade as long as those sites are re-graded to help avoid exposure of the original B&B ball or tree roots.

C. Tree Planting Details

1. The original soil unless it lacks the basic properties necessary to grow plants, shall be used instead of amendments.

2. The original soil unless it lacks the basic properties necessary to grow plants, shall be used instead of amendments.

3. Non-nylon based burlap and wire baskets shall be removed from the top two-thirds of the planting hole. Once the tree planting is complete, exposed burlap or ropes will be considered unacceptable.

4. Trees shall be watered after planting to eliminate air pockets.

5. Trees should have a donut shaped mulch ring placed around them no higher than 4 inches.

END 32 90 00.

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid:

1. Each Contractor:

a. The work to be performed under this section of the specifications shall include all seed, labor and materials, and perform all operations in connection with the placing, watering and firming of seeded areas, complete and in strict accordance with these specifications and applicable Drawings, and subject to the terms and conditions of the Contract. The Contractor shall seed all areas disturbed for any reason during construction.

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 02 41 16 - Structure Demolition

2. Section 32 92 19 - Erosion and Sedimentation Controls

1.3 SUBMITTALS

A. Product data:

1. Seed Mix
2. Fertilizer Requirements

1.4 WARRANTIES

A. One year plus one growing season.

2. PRODUCTS

2.1 SEED

A. Grass seed shall be fresh, clean and new crop seed composed of the following varieties mixed in the proportion by weight, as shown, and testing the minimum percentages of purity and germination indicated. All seed used shall be labeled in accordance with U.S. Department of Agriculture Rules and Regulations under the Federal Act in effect at the time of the installation of the work involved under seeding operations. All seed shall be furnished in sealed standard containers. Seed may be mixed by dealer or by an approved method on the site. Weed seed shall not exceed .35% by weight of the total amount supplied. If seed is mixed on the site, dealer's guaranteed analysis for each variety must be furnished. Individual varieties must be delivered in

separate unopened original containers should the Contractor desire to mix the seed on the site.
The mixture of grass seed used for seeding areas flatter than 3:1 slopes shall consist of the following proportions by weight per acre:

TYPE	PURITY	GERMINATION	RATE
Kentucky Bluegrass	98	85	75 lbs./Acre
Perennial Ryegrass	98	90	20 lbs./Acre

Areas with slopes 3:1, or steeper, shall have an additional seeding of the following kind and quantity of seed:

TYPE	PURITY	GERMINATION	RATE
Perennial Ryegrass	98	90	30 lbs./Acre

The mixture of grass seed used for seeding the inside slope of the earthen water retaining structures shall consist of the following proportions by weight per acre:

TYPE	PURITY	GERMINATION	RATE
Reed Canary Grass	98	90	15 lbs./Acre
Tall Fescue	98	90	15 lbs./Acre

2.2 COMMERCIAL FERTILIZER

A. Immediately prior to seeding preparation, fertilizer shall be placed over the areas to be seeded. The fertilizer shall be a complete commercial fertilizer of organic base containing, in available form by weight, 12% Nitrogen, 12% Phosphorous, and 12% Potash. It shall be free flowing and suitable for application with approved equipment, delivered to the site in bags or other convenient containers, each fully labeled with the following:

1. Name and address of manufacturer
2. Name brand or trademark
3. Number of net pounds of ready mixed materials in the package
4. Chemical composition of analysis
5. Producer’s guarantee of composition

Fertilizer shall be evenly distributed with an approved mechanical spreader at a rate of 750 pounds per acre.

Agricultural ground limestone shall be applied at the rate of two tons per acre.

If a heavy or long rain (as judged by the A/E) should fall on the plant site after fertilizer has been applied but before the seedbed has been prepared, the Contractor shall re-fertilize those areas affected, at no additional compensation.

2.3 MULCH

A. Immediately after rolling of the seedbed, mulch shall be applied to all the earthen embankments, road ditches, drainage swales and any slopes of 3:1 or steeper. Mulching will not be required on the remaining areas of the site. Mulch shall be straw of wheat, rye, oats or other approved stalks and shall be

air dried. Hay will not be permitted. Mulch shall be hand or machine applied in a loose enough layer to permit air to circulate but compact enough to reduce erosion. If baled mulch is used, care shall be taken that the material is in a loosened condition and contains no lumps or knots of compacted material.

3. EXECUTION

3.1 TIME OF PLANTING

A. Seeding shall be performed only during the seasons when satisfactory growing conditions exist. The planting operation shall not be performed during times of drought or other unfavorable climatic conditions.

3.2 PLANTING PROCEDURES

A. The areas to be seeded shall be prepared immediately prior to the placing of the seed by thorough cultivating, smoothing, removal of clods, surface stone 1 inch diameter or larger, and weeds. Soil shall be in a moist condition prior to placing seed.

B. Grades on the areas to be seeded shall be maintained in true, even and compacted conditions so as to prevent the formation of depressions. Areas that have washed or eroded shall be brought to grade and compacted thoroughly by the Contractor at his own expense prior to placing the seed. No grading shall be done when the soil is in a muddy or frozen condition.

3.3 APPLYING FERTILIZER

A. The previously described fertilizer shall be applied to the finished grade by approved spreader at the minimum rate of 250 lbs. per acre and shall be thoroughly raked into the top 2 inches of the surface before planting of seed.

B. Lime shall be applied into the top 2 inches of the soil at a rate of 2,000 lbs. per acre by disking, harrowing or raking prior to the planting of seeds.

3.4 PLANTING SEED

A. Seeding Schedule: Seeding shall be performed only during the specific time periods as stated hereafter:

1. March 15 through May 1.

2. August 15 through October 1.

B. Seed mixed in proportions as hereinbefore specified shall be broadcast by approved sowing equipment at the rate of 80 lbs. per acre. The seed shall be covered to an average depth of 1/2 inch by means of a brush harrow, spike tooth harrow, chain harrow, cultipacker, or other approved device.

C. Mulch shall be evenly distributed at a rate of 2 tons per acre over the seeded area within 24 hours following seeding. The mulch shall be crimped into the

soil to reduce movement due to wind or erosion. After mulching, precautions to prohibit foot or vehicular traffic over the area should be taken.

D. When delays in operations carry the work beyond the most favorable planting season for the grasses designated, or when conditions are such, by reason of drought, high winds, excessive moisture, or other factors, that satisfactory results are not likely to be obtained, the seeding operation shall be stopped and work shall be resumed only when conditions are favorable again or when approved alternate or corrective measures and procedures have been put into effect. If inspection during seeding operations or after there is a show of green indicates that areas have been skipped, the sowing of additional seed on these areas will be required.

E. The seeded areas will be inspected for acceptable grass coverage and will be acceptable when the grasses designated are growing and are in good condition, and no area more than 1/2 of one percent of the total areas shall be bare, of which no single areas shall be more than three square feet in area. Any area larger than this will not be acceptable and shall be reseeded.

3.5 MAINTENANCE

A. All seeded areas shall be kept in a healthy, growing condition by watering, mowing, rolling, trimming, edging, etc., until completion and acceptance by the Using Agency.

B. Reconditioning Existing Areas:

1. Existing areas damaged by the Contractor's operations (e.g. Contractor's storage areas) including storage of materials and equipment and movement of vehicles are to be reconditioned. Contractor is also to recondition existing grass areas were minor regrading is required.

2. Contractor is to provide fertilizer, seed, lime and mulch as required for reconditioned areas as well as new soil as may be required to fill low spots to finished grade.

3. Contractor is to remove diseased and unsatisfactory grass areas. These grasses shall not be buried in the soil at a depth less than 24". Contractor shall remove topsoil containing foreign materials resulting from the Contractor's operation including oil drippings, stone, gravel, and other materials as directed by the A/E.

4. Where substantial grass remains (but is thin) the Contractor shall mow, rake, aerate (if compacted), fill low spots, remove humps, cultivate, fertilize, seed and mulch in accordance with these specifications.

C. Over winter protection: If the site cannot be seeded during the fall planting period, immediately following the grading operations the Contractor shall be required to stabilize the project site with either straw mulch or a temporary seed crop of wheat or oats. Such operations, if required, will be performed at no additional cost to the Using Agency or CDB.

1. If the Contractor chooses to mulch the project site, he shall do so at the same rate and by the same methods as previously described in this section for mulching operations.

2. If the Contractor chooses to sow a temporary seed crop, he shall submit proposed rates of application to the A/E for approval. All seeding shall be complete prior to November 1st.

3. The permanent grass species shall not be drilled directly into the mulched or temporary seeded areas. Temporary mulch or grass species shall be incorporated to a depth of 6" by disking, harrowing or other approved methods or shall be disposed of in a manner approved by the A/E. All operations previously described under this section for seedbed preparation, liming, and fertilization shall be performed prior to Spring seeding.

4. The seedhead of the temporary crop shall not be allowed to mature. Should the Contractor be unable to incorporate this crop prior to seedhead maturity, he should mow the crop to prevent maturity. Should wet conditions not allow the Contractor to mow the crop and the seedhead matures, the Contractor shall combine the crop to prevent a volunteer cereal crop.

D. Temporary Stabilization: Topsoil stock piles and disturbed portions of the site where construction activity temporarily ceases for at least 21 days shall be stabilized with temporary seed or mulch no later than 14 days from the last construction activity in that area. The temporary seed crop shall be wheat or oats. Such operations, if required, will be performed at no additional cost to the Using Agency or CDB.

1. If the Contractor chooses to mulch the project site, he shall do so at the same rate and by the same methods as previously described in this section for mulching operations.

2. If the Contractor chooses to sow a temporary seed crop, he shall submit proposed rates of application to the A/E for approval.

3. The permanent grass species shall not be drilled directly into the mulched or temporary seeded areas. Temporary mulch or grass species shall be incorporated to a depth of 6" by disking, harrowing or other approved methods or shall be disposed of in a manner approved by the A/E. All operations previously described under this section for seedbed preparation, liming, and fertilization shall be performed prior to Spring seeding.

4. The seedhead of the temporary crop shall not be allowed to mature. Should the Contractor be unable to incorporate this crop prior to seedhead maturity, he should mow the crop to prevent maturity. Should wet conditions not allow the Contractor to mow the crop and the seedhead matures, the Contractor shall combine the crop to prevent a volunteer cereal crop.

E. The Contractor shall protect all seeded areas from damage of any sort due to operations of other Contractors and trades, and trespassers. Maintenance shall commence immediately following seeding operations and shall continue

throughout the guarantee period. Contractor shall repair or replace damaged areas as directed by the A/E.

END 32 92 19.

33 05 06 - Buried Piping and Appurtenances Installation

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid:

1. General Contractor:

a. The work to be performed under this section of the specifications shall include all materials, labor, equipment, and all other facilities necessary for the installation of the sewer mains by the trench method and for the installation of appurtenances as shown on the Drawings and/or herein specified.

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 33 05 07 - Trenchless Installation of Piping

2. Section 33 31 13 - Site Sanitary Sewerage Piping and Appurtenances

B. Other Standards:

1. Construction methods recommended in the current edition of the Standard Specifications for Water and Sewer Main Construction in Illinois (8^{th} Ed. 2020), as far as applicable, shall be followed. In case of conflict with the Standard Water and Sewer Specifications, the more stringent specification will be followed. Installation methods shall also conform to the manufacturer's recommendations for the type of pipe being installed, unless specified differently in this Section. All construction and installation shall also comply with the most recent version of the Illinois State Plumbing Code (2014).

2. PRODUCTS

2.1 GENERAL INFORMATION

A. See section 33 31 13 Site Sanitary Sewerage Piping and Appurtenances for applicable product information.

3. EXECUTION

3.1 PIPE LAYING

A. General

HDPE and/or PVC Water Quality pipe installed for use as force main shall be clearly labeled/marked as sanitary sewer force main, either by color or label installed every 4 feet on the force main.

Pipe laying, jointing, and testing for sewer pipe shall be as specified in Section 31 of the Standard Water and Sewer Specs except as herein supplemented or modified:

In addition to the requirements called for in Section 31-1.01 of the Standard Specifications, the following shall apply:

The locations of the sewers, conduits, and structures, as shown on the Drawings, have been selected to provide the least possible interference with, or the crossing of, existing utilities. The Using Agency reserves the right to make minor variations in the location of these items during construction, to make any change or differing conditions discovered during construction, and no additional payment will be allowed the Contractor for such shifts in alignment.

Only competent persons at laying sewer main pipe shall be employed on this phase of the work, and complete suitable equipment necessary for the execution of same is required. Any incompetency observed by the Using Agency must be removed at their request, and where improper equipment or lack of same appears to be impairing the quality or speed of the work, such adjustments in same shall be made to the Using Agency's satisfaction.

The pipe, structures, fittings, and valves shall be placed in the trench with care. Under no circumstances shall pipe or other materials be dropped or dumped into the trench. The pipe shall not be dragged in a manner which would cause scratching on the surface of the pipe and will be considered cause for rejection. Pipe shall be installed in accordance with the manufacturer's recommendations, and with the Standard Water and Sewer Specs.

Polyethylene encasement shall be used to wrap the ductile iron pipe prior to installation. See Section 52.03.D. for specifications on the polyethylene encasement.

B. Bypass Pumping

The Contractor shall be responsible for design, installation, and maintenance of bypass pumping during sanitary sewer construction operations if required. Design, maintenance plan, and equipment shall be submitted for review and approval of A/E.

C. Pipe Cleaning During Laying Operation

The pipe shall be kept clean during and after laying. At the termination of pipe laying, the open end of the pipeline shall be closed off by a suitable cover until laying operations are resumed. All dirt, debris and moisture shall be removed from the surfaces to be jointed.

If dirt or dust has been introduced into the length of pipe, a thorough cleaning of the pipe shall be done just before the joint of pipe is installed. At this time, a visual check shall be made by placing the pipe in an inclined position to assure that all foreign matter and dirt is removed from the inside of the pipe.

D. Inspection of Material During Construction

Any materials not meeting the specifications, or obviously faulty material, shall be rejected by the A/E and removed from the job site by the Contractor. When ordered by the A/E, joints may be cut from the pipeline for inspection. All ductile iron installation, **whether pipe or fittings**, shall be reviewed by the A/E before the trench is backfilled. Failure to allow for this observation shall result in the exposing of the pipe for review, and shall be incidental to the contract costs.

E. Fluid Tight Joints

Make sure the gasket is not twisted or turned to prevent proper sealing in the groove. Apply the lubricant to the gasket surface and to the spigot end of the pipe. The joint is made by one quick easy motion making sure the guide mark has reached the end of the fitting. For RJ pipe, the Contractor should then insert the nylon spline through the spline hole in the assembled joint which engages with the spline groove in the pipe end.

F. Breaks in Pipe or Joints

All breaks in pipe and/or joints shall be repaired to the satisfaction of the A/E and at the expense of the Contractor. The defective pipe or fittings shall be removed and replaced. Repair clamps will **not** be permitted on forced main.

G. Cutting Pipe

Cutting of RJ pipe shall **not** be allowed; only the installation of full length joints shall be allowed.

H. Bed and Cover

The Contractor shall follow 31 23 00 Excavation and Fill of these Specifications.

3.2 UTILITIES ENCOUNTERED

A. All utilities, including wiring, light standards, signal lights, sewers, private water lines, buried telephone cable, underground gas lines, etc., affecting the construction of the proposed improvement shall be adjusted at the Contractor's expense. It shall be the Contractor's responsibility to determine the exact location of all utilities. All adjustments shall be done as specified by the owner of the utility.

B. If the Contractor damages any utility not requiring adjustment, they shall replace or repair it as required by the Using Agency and no additional compensation will be allowed. No attempt has been made on the Drawings to show all utilities or their exact locations.

C. The Using Agency reserves the right to make minor variations in the location of these items during construction, to make any change or differing conditions discovered during construction, and no additional payment will be allowed to the Contractor for such shifts in alignment.

3.3 TESTING OF SEWER MAIN AND EQUIPMENT

A. Gravity Pipe

All sewers not passing any of the following referenced tests shall be considered unsatisfactory and shall be repaired by the Contractor at no additional compensation.

All tests and testing equipment, including a pressure gauge with maximum graduations of 0.5 psi and approved by the A/E, shall be provided by the Contractor at no cost to the Using Agency.

When pressure tests are to be conducted, the Contractor shall have the full test pressure applied to the sewer main segment, and verify that the sewer main segment is holding pressure, prior to notifying the A/E to observe the formal pressure test for the duration required. Pressure test observation requests after 3:30 P.M. will be performed the next working day.

A/E shall be present for all testing.

1. Air/Leakage Test

In reference to Section 31-1.12 of the Standard Water and Sewer Specifications, “Testing and Inspection for Acceptance of Sanitary Sewers,” **all** (100%) of the wastewater sewers shall be tested for leakage using the pressure air testing method. The time required for a pressure drop from 3.5 to 2.5 PSIG shall not be less than the time specified in the 35 Illinois Administrative Code 370.APPENDIX C Table No. 3 - Air Test Table for Sanitary Sewer Leakage Testing. Air testing shall be incidental to the total Contract Price.

2. Infiltration Test

If approved by the A/E, the infiltration test may be used if the water table is 18 inches or higher above the crown of the pipe and the exfiltration by water test may be used if the water table is less than 18 inches above the crown of the pipe.

3. Lamping Test

Lamping tests may be required by the A/E or Using Agency at any time during construction an/or testing of the sanitary sewers. All sewers not passing the lamping tests shall be considered unsatisfactory and shall be repaired by the Contractor at no additional compensation.

4. Mandrel/Deflection Test

Deflection testing shall be conducted in accordance with the Standard Water and Sewer Specifications, Section 31-1.12.

B. Pressure Pipe

Pipe laying, jointing, and testing for pressure pipe shall be as specified in Division IV, Section 41 of the Standard Water and Sewer Specs, except as herein supplemented or modified. Where laying and jointing methods for an allowable type of pipe are not covered by the Standard Water and Sewer Specs, the pipe shall be installed in accordance with the manufacturer's recommendations and applicable standards of the AWWA, ASTM, ASA or ANSI.

1. Preliminary Pressure Testing

At the A/E's option during the general construction period the following pressure testing procedure shall be followed:

After the PVC pipe is assembled trench side or in the trench, a test of not less than fifty percent (50%) above the system's anticipated working pressure shall be applied with either air or water. After two consecutive tests have been performed without any failure, the Contractor at their option and with the A/E's approval may discontinue testing until the system is completed. A hydrostatic test shall then be run as outlined in 42.07.B.2, below.

If there is a change of laying conditions, technique or personnel after the testing has been discontinued, the Contractor should, and at the A/E's request will, test additional sections to provide assurance that this change is satisfactory.

2. Pressure Testing

Hydrostatic and pressure testing shall conform with Section 41-2.14 of the Standard Water and Sewer Specs; the basic provisions of AWWA C600 and C605 shall apply. The leakage test is not an acceptable formal test for passing a pressurized sewer main, only the pressure test is allowable.

Prior to performance of the test all air shall be expelled from the pipeline to the satisfaction of the A/E. If required, taps shall be made at high points where air relief valves are not called for on the Drawings. Such taps shall be plugged after testing is complete.

Pressure 50 percent in excess of working pressure, as measured at the point of lowest elevation, shall be applied for not less than one (1) hour, and all pipe, fittings, valves, and joints shall be carefully examined for defects. Leaking joints shall be remade and then retested.

C. Manholes

Manholes shall be tested before the ring and cover and grade adjustment rings are installed, and before backfill and compaction is complete. Conduct test in conformance with ASTM C1244. Vacuum testing of manholes shall be incidental to the total Contract Price.

1. Preparation for tests:

   a. All pipes entering the manhole shall be temporarily plugged beyond the boot seals, taking care to securely brace the pipes and plugs to prevent them from being drawn into the manholes.

   b. The test head shall be placed at the top of the manhole in accordance with the manufacturer's recommendation.

2. Test Procedure:

   a. A vacuum of 10-inches mercury shall be drawn in the manhole, the valve on the vacuum line of the test head closed, and the vacuum pump shut off.

   b. The manhole shall pass if the time for the vacuum reading to drop from 10-inches mercury to 9-inches mercury meets or exceeds the values indicated in the following table:

	Diameter		
	4 ft	5 ft	6 ft
Depth (feet)*	Time (Seconds)		
8	20	26	33
10	25	33	41
12	30	39	49
14	35	46	57
16	40	52	67
18	45	59	73
20	50	65	81
22	55	72	89
24	59	78	97
26	64	85	105
28	69	91	113
30	74	98	121

* Round actual depth of manhole to next depth up (i.e., 11 ft deep manhole, use depth of 10 feet.

   c. If the manhole fails any test, the Contractor, at no additional costs, shall make all necessary repairs by an approved method and the manhole shall be retested until a satisfactory test is obtained. Written test results shall be provided to A/E and Using Agency.

3.4 DRAINAGE DITCH / CREEK CROSSINGS

A. Where sewer mains cross drainage ditches or creeks, the main shall be installed within the easement under the drainage ditch bed or creek bed avoiding obstructions such as culverts, concrete wingwalls, paved ditches, etc.

B. Where restrained-joint (RJ) PVC pipe for drainage ditch or creek crossings is NOT specified, the Contractor shall excavate across all drainage ditches or creeks called for in the plans to a sufficient depth to still maintain a minimum of 48 inches of cover between the top of the pipe and the bed of the drainage ditch or streambed of the creek. The PVC pipe shall then be laid in the trench and weighted down with sufficient numbers of sandbags filled with sand to keep the pipe from springing (or floating) upward. The trench shall then be backfilled per these specifications. This method of drainage ditch or creek crossing work shall be incidental to the Contract Price.

C. Where restrained-joint (RJ) PVC pipe for drainage ditch or creek crossings IS specified on the Drawings, the Contractor shall install the pipe according to Section 33 05 07 Trenchless Installation of Piping of these specifications. A minimum of 60 lineal feet of RJ PVC pipe with expansion couplings at both ends (see Section 33 31 13 Site Sanitary Sewerage Piping and Appurtenances of these specifications) shall be required at each drainage ditch crossing. If field conditions warrant it, the length of RJ PVC pipe may be increased with A/E approval.

D. Where a directional bore is specified on the Drawings, see section 33 05 07 Trenchless Installation of Piping of these Specifications.

3.5 SEWER NEAR WATER MAINS AND WATER SERVICE LINES

A. Per 35 Illinois Administrative Code 370.350, there shall be no physical connections between a public or private potable water supply system and a sewer, or appurtenance thereto, which would permit the passage of any sewage or polluted water into the potable supply.

   No sewer shall be located closer than 10 feet from water works structures.

   1. Horizontal and Vertical Separation

      a. Sewer mains and connections shall be laid at least 10 feet horizontally from any existing or proposed water main or water service line.

      b. Should local conditions exist which would prevent a lateral separation of 10 feet, sewer lines may be closer than 10 feet to a water main provided that the water main invert is at least 18 inches above the crown of the sewer line, and is either in a separate trench or in the same trench on an undisturbed earth shelf located to one side of the sewer.

      c. If it is impossible to obtain proper horizontal and vertical separation as described above, both the water main and sewer must be

constructed with water main quality pipe and joints: slip-on or mechanical joint cast or ductile iron pipe, asbestos-cement pressure pipe, prestressed concrete pipe, or PVC pipe meeting the requirements of 35 Illinois Administrative Code, 653.111. The pipes shall be pressure tested in accordance with "AWWA Standard for Installation of Ductile-Iron Water Mains and their Appurtenances," AWWA C600-93 (no later editions or amendments) for a working pressure equal to or greater than the maximum possible surcharge head to assure water tightness before backfilling.

2. Water-Sewer Line Crossings

   a. Whenever possible, sewers crossing water mains shall be laid with the sewer below the water main with the crown of the sewer a minimum of 18 inches below the invert of the water main. The vertical separation shall be maintained on each side of the crossing until the perpendicular distance from the water main to the sewer is at least 10 feet. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Adequate support shall be provided for the water mains to prevent damage due to settling of the sewer trench.

   b. Where a sewer crosses under a water main and it is not possible to provide an 18-inch vertical separation:

      1.) The sewer shall either be constructed with, or shall be encased in a carrier pipe with the ends sealed that is, water main quality pipe and joints: slip-on or mechanical joint cast or ductile iron pipe, asbestos-cement pressure pipe, prestressed concrete pipe, or PVC pipe meeting the requirements of 35 Illinois Administrative Code, 653.111. The pipes shall be pressure tested in accordance with "AWWA Standard for Installation of Ductile-Iron Water Mains and their Appurtenances," AWWA C600-93 (no later editions or amendments) for a working pressure equal to or greater than the maximum possible surcharge head to assure water tightness before backfilling. The water main quality sewer or carrier pipe shall extend on each side of the crossing to a point where the perpendicular distance from the water main to the sewer is at least 10 feet.

      2.) For the required length of the water main quality sewer or carrier pipe, omit the select granular cradle and granular backfill to one foot over the crown of the sewer and use selected excavated material (Class IV) and compact to 95% of Standard Proctor maximum density.

      3.) Point loads between the sewer or sewer casing and the water main are prohibited.

          Adequate support shall be provided for the water main to prevent damage due to settling of the sewer trench.

c. Where it is not possible for a proposed sewer to cross under an existing water main, the construction methods and materials described in 42.06.C.2 above shall be followed. Where a proposed sewer must cross over a proposed water main, an 18-inch vertical separation shall be maintained.

3. Sewer Manhole Separation From Water Main

a. No water pipe shall pass through or come into contract with any part of a sewer manhole.

3.6 THRUST BLOCKS

A. Thrust blocking is required on all pressure pipe. All bends of 11-1/4 degrees or greater, and all other fittings shall be thrust protected to prevent movement of the lines under pressure. Blocking shall be Portland Cement Concrete poured in accordance with Section 41.-2.10 of the Standard Water and Sewer Specs, or precast, solid blocking for small diameter pipe where the undisturbed soil is extremely firm and stable. Thrust blocking shall extend from the fitting to the undisturbed soil. Pipe and fitting joints shall remain accessible for repairs. Where unstable soil conditions exist, all deflections in the pipe from a straight line shall be provided thrust blocking in accordance with the manufacturer's recommendations. Concrete for reaction or thrust blocks shall have a 28 day compressive strength of not less than 3,000 psi.

B. No wooden wedges, treated or otherwise, shall be allowed for shims for the blocking in any circumstance. PVC pipe may not be used in lieu of concrete blocks.

C. Where a fitting is used to make a vertical bend, the fitting shall be anchored to a thrust block braced against undisturbed soil. The thrust block should have enough resistance to withstand upward thrusts at fitting.

3.7 FIELD TILE REPAIR

A. If the Contractor damages any field tile (marked or unmarked), then the Contractor shall fix the tile and no additional payment will be allowed. In addition, no payment will be allowed for Contractor down time to hand dig or otherwise search for a marked field tile, whether accurately located or not.

B. The bid shall include all necessary gravel backfill/support as shown on the Drawings and as defined in IDOA’s requirements.

END 33 05 06.

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid:

1. General Contractor:

a. The work to be performed under this section of the specifications shall include all equipment, machinery, labor and materials necessary to perform all operations in connection with the conventional boring and pulling or directional boring of sewer mains of the required diameter and type of material at locations that may be designated at time of construction. Gravity pipe bores must be at grade with little or no tolerance. Permits required by the State, County, and Township Highway Departments, railroads, and waterway authorities will be acquired by the A/E.

b. The Contractor shall be responsible for notification of appropriate officials as required by Highway and Railroad permits.

c. Private driveways constructed of concrete, asphalt, or oil and chip shall also be bored, utilizing the same methods, procedures, and method of payment as for boring under roadways. Since individual property owners may have improved their driveways after the construction drawings were assembled and prior to pipeline construction, the drawings do not necessarily depict all locations where boring of driveways will be required.

d. The Contractor is responsible for any charges by the railroad(s) for flagmen, foremen, engineering observers, and others; and by IDOT and others during the course of the work; and shall include such costs in his bid price.

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 33 31 13 – Site Sanitary Sewerage Piping and Appurtenances

B. Other Standards:

1. Unless otherwise noted in these specifications, trenchless construction shall abide by Section 23 of the Standard Water and Sewer Specifications (8th edition, 2020).

2. PRODUCTS

2.1 GENERAL INFORMATION

A. See section 33 31 13 Site Sanitary Sewerage Piping and Appurtenances for applicable product information.

3. EXECUTION

3.1 TRAFFIC AND SAFETY

A. The contractor shall use all safety procedures, equipment, and planning necessary to perform the conventional bores or directional bores for installation of the sewer mains. The boring procedure is to avoid disturbance of the travel surface, and shall not cause any inconvenience to the traveling public. At all locations where traffic must be maintained, the operations shall be carried on without encroachment upon the traveled way by either the excavation, by the storage of materials or equipment, or by the use of construction equipment. Open cut excavation will not be allowed within the specified distance from the edge of the traveled surface. All stipulations of the highway and/or railroad departments shall be adhered to along with the approval of the Using Agency.

3.2 CONSTRUCTION DETAILS

A. The Contractor is reminded that his work must remain within the right-of-way or construction easement, as shown in the plans and as specified on each individual easement. Any construction activity outside the right-of-way or easements provided is solely at the Contractor's risk, responsibility, and liability. Including cost associated with the removal and reinstalling of said sewer main(s), services, and appurtenances on to private easement or right-of-way which ever may occur.

B. All sheeting, bracing, shoring, and other materials necessary for the complete installation of the main lines under roadways and driveways shall be of sufficient strength and construction to handle the loads that are to be imposed upon them.

C. The alignment and elevation of the forward end of the boring shall be checked and if it does not meet the requirements of the permit, the auger will be pulled and a new boring made at no additional cost to the Using Agency.

D. The Contractor shall fill over excavation of bore and recovery pits at entrance and exit of sewer main through bore hole with compacted sand or CA-6 to the bottom of the sewer main giving a sound foundation for the sewer main preventing the sewer main from shearing as the backfill settles. Payment for the sand or CA-6 shall be considered incidental to the contract price for bores.

3.3 BASIS OF PAYMENT

A. All work associated with conventional borings including the use of benonite, polymers, soups or a combination there of will be in the bid, and as detailed in

the following sections. All work associated with directional borings will be included in the bid. The price shall include all excavation, boring, equipment, labor, materials, dewatering, traffic safety control, placement and compaction of granular backfill, and other miscellaneous work as necessary. Note that an approximate bore length has been indicated on the plans for each particular bore; however, the actual payment length will be determined in the field, per the specifications in the following sections

B. No payment will be allowed for additional bore lengths for the Contractor's convenience, due to utilities or otherwise, beyond that described in the following sections.

3.4 DIRECTIONAL BORING - SEWER MAIN

A. General

Where indicated on the plans, the Contractor shall provide directional boring of sewer mains of the diameter as specified, for passage under roadways, driveways, waterways, and/or thru private property. No casing pipe shall be furnished or placed under this item of work. All sewer main for directional bores shall be restrained-joint PVC pipe, with expansion couplings at both ends (see also Section 33 31 13 Site Sanitary Sewerage Piping and Appurtenances of these specifications). All bores must be at grade with little or no tolerance.

B. Specified Distance from the Edge of the Pavement

Open cut excavation will not be allowed within the specified distance from the edge of the traveled surface. All stipulations of the various highway departments shall be adhered to along with the approval of the Using Agency. The following minimum distances will be maintained from the edges of the following various roadway or driveway surfaces for all directional bores:

State Highways	15 feet
County Highways	15 feet
Township Roadways	10 feet
Driveways	5 feet

C. Specified Distance for Waterways

Since waterway surfaces and streambed/streambank profiles occur in such a variety of configurations, and since Contractor's may employ a number of methods for directional boring depending on pipe installation angle, convenience, etc., it is not possible to come up with a single rule for specified directional bore distances. An estimated directional bore length has been indicated on the plans for IEPA purposes for each particular directional bore, and also constitutes the minimum length that will be allowed physically for the directional bore. In all cases, open cut excavations for bore pits shall remain at least 20 feet from top of stream banks.

D. Procedures

The Contractor shall use water, bentonite, polymer, or bentonite/polymer mixture for the mud mixture needed for the directional boring procedure and shall include the costs of these items in his bid. The Contractor shall use the mixture required by the type of soil encountered.

The Contractor shall use the backreamer needed to satisfy the conditions of the directional bore and the type of soil encountered. Spiral or coned backreamers are designed to push foreign objects such as rocks and tree roots out of the way or off to the side of the directional bore path. The surface area of the cone shaped backreamers is large so this will create a lot of drag. The wing cutter, which allows the mixed material to flow through, provides the best result in mixing.

For 8 inch diameter or smaller pipe, a reamer larger than 1.5 times the diameter of the pipe should not be used without the permission of the A/E. For 10 inch diameter or larger pipe, a reamer of 1.3 times the diameter of the pipe or smaller is required, unless given permission by the A/E.

It is recommended that the pipe follow immediately behind the backreamer or expander because the directional bore hole will start to close up instantly after the backreamer or expander is pulled through. This allows limited time, depending on the soil condition, to push the pipe in the hole. When trying to push the pipe in the closing hole, the pipe could bend. When this occurs the pipe will be under a considerable amount of tension and compression and could result in the shattering of the pipe. The pipe under the roadway could also be damaged from this compression stress on the pipe.

E. Damaged Pavement

There are several factors that affect the disfiguration of the ground surface of a directional bore. The depth of the directional bore under the surface is critical. The increase in depth of the directional bore will decrease the chance of the pavement bulging. Hydra-lock is another factor that could cause surface damage.

Hydra-lock is created during pull back, when not enough mud is pumped into the hole or poor mud mixture is used. During hydra-lock, fluid that is being pumped out of the backreamer is completely contained within the hole, rather than flowing out of the inlet and/or outlet hole. Without an escape route, the fluid being pumped into the hole becomes pressurized, acting like a hydraulic cylinder - the pressure prevents the pipe from moving until the fluid finds an escape route. This may cause cracking or disfiguration at the surface to release the pressure. Any cracking or damage caused by the directional boring operation to the traveled surfaces (regardless of the soil and/or rock type encountered) shall be repaired or replaced, at the Contractor's expense, as required by the Using Agency, the A/E, or the property owner.

F. Surface and Utility Impairments

All utilities, including wiring, light standards, signal lights, sewers, private water service lines, buried telephone cable, underground gas lines, field tiles, etc., affecting the construction of the proposed improvement shall be adjusted at the Contractor's expense. It shall be the Contractor's responsibility to determine the exact location of all utilities. All adjustments shall be done as

specified by the Owner of the utility. If the Contractor damages any utility not requiring adjustment, he shall replace or repair it as required by the Using Agency or by the A/E and no additional compensation will be allowed. No attempt has been made on the drawings to show all utilities or their exact locations.

END 33 05 07.

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid:

1. General Contractor:

a. The work to be performed under this section of the specifications shall include all labor, materials, equipment and transportation necessary for furnishing and installing piping and appurtenances shown on the Drawings and specified herein.

The Contractor shall be responsible for all materials furnished under this section, and storage of same until the date of substantial completion. They shall replace at their expense all materials found to be defective or damaged in handling or storage. The Contractor shall, if requested by the A/E, furnish certificates, affidavits of compliance, test reports or samples for check analysis for any of the materials specified herein.

Although they may not be specifically shown on the Drawings or called for elsewhere in the Technical Provisions, the Contractor shall include in their bid price the cost of all fittings, piping supports, and miscellaneous appurtenances needed to provide a secure, workable pipe and valve system. Equipment suction and discharge piping and other exposed piping shall be supported by concrete pedestals, piers, adjustable pipe supports, thrust restraints, hangers, and tie rods as necessary to insure a stable installation. Adjustable pipe supports or piers shall be arranged to relieve attached equipment of all strain due to the weight of the pipe, fittings, valves, and the contents of the pipe. Pipe supports shall be stanchion saddle type. Hanger shall be adjustable wrought clevis or adjustable wrought ring type.

1.2 REGULATORY REQUIREMENTS

A. References throughout this section to “Standard Specifications” refer to Standard Specifications for Water and Sewer Main Construction in Illinois – 8th edition, 2020

1.3 RELATED WORK

A. Specified Elsewhere:

1. Section 33 05 06 - Buried Piping and Appurtenances Installation

2. Section 33 05 07 - Trenchless Installation of Piping

1.4 SUBMITTALS

A. Shop drawings:

1. Pipe
   a. PVC
   b. Stainless Steel
2. Fittings
   a. Ductile iron
   b. PVC
3. Manholes
4. Pipe restraining glands
   a. Ductile iron
5. Check Valves
6. Ball Valves
7. Valve Boxes
8. Copper tracer wire

2. PRODUCTS

2.1 GENERAL INFORMATION

A. Piping Systems

1. Gravity Pipe - The following items shall be considered gravity pipe: gravity mains, trunk lines, laterals, collectors, service lines, risers, and any other piping intended to carry wastewater or sludge by gravity flow or non-mechanically induced pressure. Where a specific pipe material or pipe joint is shown on the Drawings, only that material or joint shall be used.

   a. Exposed or Unsupported Gravity Pipe - The pipe shall be considered exposed or unsupported whenever it is inside a structure, submerged above ground elevation, or any location where the pipe must be strong enough to span a distance between installed supports.

   b. Buried Gravity Pipe - The pipe shall be considered buried if placed below grade and fully supported by the earth. (Other types of pipe not covered in these technical provisions will be considered for use as buried gravity pipe; in general, these pipes are recently developed and are not presently covered by specifications from national testing organizations such as ANSI, ASTM, or ASA. Examples include spiral wound PVC pipe and spiral wound Polyethylene pipe. Use of such piping shall require the written approval of the A/E prior to bidding; this approval will be based on his/her review of the pipe specifications. These specifications shall be submitted no later than 14 calendar days prior to the bid date, and they shall provide complete information on pipe raw materials, design and stiffness, marking, workmanship, fittings, joints, and installation.)

2. Pressure Pipe - The following items shall be considered "pressure pipe": force mains, pump intake lines, potable and non-potable water lines, air

mains, where pressure rating is required due to proximity of gravity sewer to existing water main, and any other pipe which generally operates under mechanically induced pressure flow. Where a specific pipe material or pipe joint is shown on the Drawings, only that material or joint shall be used.

a. Exposed or Unsupported Pressure Pipe - Pressure pipe shall be considered exposed or unsupported whenever it is inside a structure, in the walls of structure, above ground elevation, or any location where the pipe must be strong enough to span a distance between supports.

b. Buried Pressure Pipe - Any pressure pipe placed below grade and fully supported by the earth shall be considered buried pressure pipe.

B. Standard Drawings

Unless otherwise shown on the Drawings, or called for in Technical Provisions, the Standard Drawings contained in Division VI of the Standard Specifications shall apply.

2.2 PIPE MATERIAL, FITTINGS, AND JOINTS

A. Polyvinyl Chloride Slip Joint Pipe

This section of the specifications covers rigid polyvinyl chloride pipe, hereinafter called PVC pipe.

The sewer main shall be PVC pipe with push-on gasketed joints, in accordance with Section 30 of the Standard Specifications.

ASTM Specification D1784 shall be conformed to in all respects.

1. PVC Slip Joint Pipe (4 to 15 inch)

a. Gravity and Drain Pipe: Minimum wall thickness shall be based on SDR 26. PVC sewer pipe shall conform to ASTM D3034. PVC sewer pipe joints shall be flexible elastomeric seals per ASTM 3212 and F 477.

b. Pressure Pipe: SDR (Standard Dimension Ratio) - PR (Pressure Rated) PVC pipe shall be Type I, grade 1 or 2, with a hydrostatic design stress of 2000 psi for water at 73.4°F, designated as PVC 1120 or PVC 1220.

c. PVC pipe with SDR ratings of 13.5, 17, 21, and 26 are to be used or as indicated on the Drawings, and shall conform to the latest revision of ASTM Specification D2241. All joints shall conform to the latest revision of ASTM Specification D3139 and F 477. PVC pipe shall be push-on gasketed.

2. PVC Slip Joint Pipe (18 to 48 inch)

a. Gravity and Drain Pipe: Minimum wall thickness shall be based on SDR 26. PVC sewer pipe and fittings shall conform to ASTM F 679. PVC sewer pipe joints shall be flexible elastomeric seals per ASTM 3212 and F 477.

b. Pressure Pipe: DR (Dimension Ratio) - PR (Pressure Rated) PVC pipe shall design with a hydrostatic design stress of 4000 psi for water at 73.4°F in accordance with the requirements of ASTM D2837 and AWWA C905. PVC sewer pipe joints shall be flexible elastomeric seals per ASTM 3212 and F 477.

c. SDR (Standard Dimension Ratio) - PR (Pressure Rated) PVC pipe shall be Type I, grade 1 or 2, with a hydrostatic design stress of 2000 psi for water at 73.4°F, designated as PVC 1120 or PVC 1220. PVC pipe with SDR ratings of 21 (200 psi) and 26 (160 psi) are to be used or as indicated on the drawings, and shall conform to the latest revision of ASTM Specification D2241.

B. PVC Restrained Joint

This section of the specifications covers restrained-joint PVC pipe, hereinafter called RJ pipe.

The Contractor must use RJ pipe for drainage ditch crossings, road crossings, and creek crossings as well as directional bores (including sewer main inside of casing pipe), as shown on the Drawings.

The RJ pipe shall be furnished with twin gasket couplings, nylon splines, rubber rings, and lubricant. The rubber rings shall be shipped in place in the coupling. The RJ integral bell is also acceptable.

The transition from RJ pipe to slip PVC or ductile pipe shall be made by the use of a manufacturer supplied expansion coupling. This coupling shall be Restrained Joint PVC by IPS. Only the installation of full joints of RJ pipe with factory grooves shall be permitted.

The pipe shall be PVC, with a hydrostatic design stress of 4000 psi for water at 73.4 degrees F, designated as PVC 1120 or 1220, Class 12454B and made to iron pipe size diameters. PVC sewer pipe joints shall be flexible elastomeric seals per ASTM 3212 and F 477. SDR and DR rating shall be as shown on the Drawings and as called for in these specifications.

As shown on the drawings and specified herein, 4 to 15 inch PVC pressure RJ pipe shall be:

1. Restrained Joint (PVC) Pipe, SDR 26, PR 160, for installation in directional boring and/or bore and jacked casing installations.

2. Restrained Joint (PVC) Pipe, SDR 21, PR 200, for installation in directional boring and/or bore and jacked casing installations.

C. Stainless Steel Pipe

Pressure Pipe: Schedule 10 A304 stainless steel to be used to transfer air from the blowers. Pipe shall conform to ASTM A312.

D. Fittings

All ductile iron fittings shall conform to AWWA C153, AWWA C 110, and AWWA C111, 2 inch to 48 inch, for 250 psi fluid pressure plus water hammer. All fittings except plugs and sleeves shall be cement lined to conform to AWWA C104 with a bituminous seal coat. Sleeves and plugs shall be bituminous seal coated. Application gaskets, standard transition gasket (SMJ gasket) for PVC, mechanical joint restraining glands, and bolts shall be furnished. All bolts shall be stainless steel or corrosion resistant meeting the requirements of ANSI/AWWA C111/A21.11 and ASTM A242.

1. Fittings include gate valves, tees, elbows, crosses, reducers, caps, plugs, and wyes.

2. All fittings associated with PVC or DI sewer force main installation shall be ductile iron. All ductile iron fittings shall mechanical-joint and utilize mechanical-joint restraining glands where anchor couplings are not required.

3. All fittings associated with PVC low pressure distribution piping per section 33 34 51 Drainage Field System shall be PVC. All PVC fittings shall be solvent cement joints.

4. PVC fittings shall be used on gravity mains at service wyes and on service lines. The PVC fittings shall be Push-on gasketed PVC fittings and meet the requirements of ASTM D2729.

5. Pressure rating of fittings shall be equal to or greater than the specified pipe.

6. Backfill operations at fitting and gate valve locations shall not occur until all materials and work have been viewed by the Using Agency or A/E.

7. Any PVC slip-couplings utilized and allowed by the Using Agency on pipe six (6) inches in diameter and smaller shall be 12 inches minimum length. Mechanical Joints shall be used and on all pipes greater than six (6) inches in diameter.

8. PVC Expansion Couplings shall be allowed when transitioning from PVC to RJ PVC Pipe. The expansion couplings shall be provided by the manufacturer and be RJ on one end and slip joint on the other. The fitting shall be of the same material as the pipe, and in no case shall have thinner walls than that of the pipe furnished. The fitting for gasketed joint, RJ PVC pipe shall be molded in one (1) piece.

   Ductile Iron Expansion Couplings shall be a ductile iron sleeve with a restraint-joint fitting on one side and slip-joint fitting on the other side.

9. All fittings shall be of the same material and diameter as the pipe to which it is connected or of a compatible material approved by the A/E.

10. Ductile Iron flanged fittings shall conform to all requirements of AWWA C115.

11. Grooved joint fittings for ductile iron pipe shall conform to all requirements of AWWA C606.

2.3 PIPE APPURTENANCES

A. Manholes

Manholes for gravity pipe shall be standard 4-foot diameter precast reinforced concrete and conform to the requirements of Section 32 of the Standard Specifications except as hereinafter supplemented or modified.

1. Manhole Material

   Only precast reinforced concrete manholes will be allowed.

2. Manhole Steps

   Polypropylene coated steel reinforcing rods are the required type of step.

3. Standard Frame and Grate

   Unless otherwise called for on the Drawings, all manholes shall have a cast iron frame and lid and frame and lid shall together weigh no less than 400 pounds. The lid shall be a self-sealing type with concealed pick hole and a machined groove on its underside for receiving an elastomeric, continuous gasket. The gasket shall act as a seal between the lid and frame to prevent entry of surface water. The frame and lids shall have machined bearing surfaces. The Contractor shall supply the Using Agency with spare lid gaskets equal in number to 10% of the number installed, plus two (2) new and unused lid lifting tools especially designed for removing manhole lids with concealed pick holes. Manhole lids shall be marked “SANITARY”.

4. Manhole Joints

   Manhole joints shall be sealed with bituminous material for water tightness.

5. Pipe Connections

   All pipe connections at manholes and other structures shall be made with cast-in-place rubber gaskets cast into the wall of the Precast manhole and secured to the pipe with an adjustable, stainless band; a mechanical seal with tapered, precast opening; or other method approved by the A/E which provides for a flexible, watertight penetration.

6. Chimney Seal

Wherever "Chimney seal" is designated on the Drawings an internal flexible rubber seal shall be provided between the manhole frame and chimney or corbel section of the manholes. The rubber seals shall consist of the following components:

a. Rubber Sleeve - The flexible rubber sleeve shall be extruded from a high grade rubber compound conforming to the applicable requirements of ASTM C923, with hardness (durometer) of 45 ± 5.

   The sleeve shall be double pleated with a minimum unexpanded vertical expansion when installed of no less than two (2) inches. The top and bottom section of the sleeve shall contain an integrally formed expansion band recess and multiple sealing fins.

   Any splice used to fabricate the sleeve shall be hot vulcanized and have a strength such that the sleeve shall withstand a 180 degree bend with no visible separation.

b. Expansion Bands - The expansion bands used to compress the sleeve against the manhole shall be 16 gauge stainless steel conforming to ASTM A240, Type 304, with a minimum width of 1-3/4 inches.

   The expansion mechanism shall have the capacity to develop the pressures necessary to make a watertight seal and shall have a minimum adjustment range of two (2) diameter inches. Screws and nuts used for this mechanism shall be stainless steel conforming to ASTM F593 and 594, Type 304.

B. Ductile Iron Restraint Glands

Restraint for PVC and ductile iron pipe joined with standardized mechanical joint fittings shall be incorporated in the design of the follower gland and the PVC pipe restraining glands shall provide full circle contact and support of the pipe wall. Restraint shall be accomplished by a series of ring segments mechanically retained inside the gland housing and designed to grip the pipe wall in an even and uniform manner. Restraining ring segments shall be actuated by bolts featuring twist off heads. All components of the restrainer, including the gland bolts, and restraint segments shall be of high strength ductile iron, ASTM A536, Grade 65-45-12. Restraining devices shall be UL Listed/FM approved on PVC pipe and shall be certified by an independent testing facility as meeting or exceeding ASTM F1674, Standard Test Method for Joint Restraint Products for Use with PVC Pipe. Joint restraints shall be used at all fittings, gate valves, and hydrants, not requiring an anchor coupling, and shall be incidental to the contract price. Restraints shall be rated at a minimum of 200 psi.

C. Swing Check Valves

1. Acceptable Products:

   a. Orenco KSC2000
   b. Legend S-614

c. Spears S1500-20

PVC check valves shall be made from Schedule 40 Type I PVC per ASTM D-1784, with an EPDM swing gate.

D. Ball Valves

1. Acceptable Products:

a. Orenco VLT 1500S
b. NDS WLT-1500-S
c. Legend S-655
d. Matco-Norca 770S07

The ball valves shall be Schedule 40 PVC, with solvent cement joints. Each valve on the low pressure distribution sewer shall be housed in a valve box.

E. Valve Boxes

1. Acceptable Products:

a. NDS 111BC
b. Carson 910-10
c. Rain Bird VB10RND

Valve boxes shall be plastic, at least 10" diameter. Boxes shall have an overlapping lid. Boxes shall be installed over each valve. The boxes shall be of such a length that will permit adjustment in length, without full extension, to the depth of cover required over the pipe at the valve location. Valve box shall be centered over the valve.

F. Automatic Distribution Valve

1. Acceptable Products:

a. Orenco V6605A Automatic Distributing Valve
b. K-Rain 6605 Distributing Valve
c. Fimco 4006RW Hydro-Indexing Valve

The automatic distribution valve assembly shall be pressurized from the dosing pumps and distribute effluent to multiple zones. The valve shall require no electricity and alternate automatically each cycle.

G. Copper Tracer Wire

1. Acceptable Products:

a. Copperhead Superflex 1430
b. Pro-Trace HF-CCS PE30
c. DURAtrace DT-G3014-500

Copper tracer wire shall be installed with all force main. The wire shall be copper-clad steel wire coated with HDPE. Shall be installed along the force main from the dosing tank and shall be terminated in the box of the automatic

distribution valve assembly creating a continuous wire throughout. Tracer wire is not required along each 1.5" distribution line. All splices of tracer wire shall utilize direct bury splice kits. During installation of the connector, shall tie the tracer wire into a knot and leave approximately 4 inches to be inserted into the connector per manufacture's specifications. Tracer wire shall be installed with force main installed by trenching or directional drilling methods. Tracer wire shall be tested for completeness prior to issuance of Substantial Completion.

3. EXECUTION

3.1 GENERAL INFORMATION

A. See section 33 05 06 and 33 05 07 for applicable methods of installation.

END 33 31 13.

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid:

1. General Contractor:

a. The work to be performed under this section of the specifications shall include all labor, materials, equipment and transportation necessary for installing sanitary sewerage pumping equipment. Shall furnish and install submersible non-clog wastewater pumps with discharge connection elbows, motors, pump rail guides, pump mounting plates with discharge elbow and rail supports, access frames with covers and guide rail supports, pump lifting chains with hooks, wiring channel, weatherproof control enclosure, exhaust blower, electrical pump panel, float switch type level sensors, access hatches, and all piping, and related items as shown on the Plans and as described herein. The submersible pump system shall be complete to provide for automatic operation as specified.

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 33 34 51 – Drainage Field System
2. Section 33 31 13 – Site Sanitary Sewerage Piping and Appurtenances
3. Section 02 41 16 – Structure Demolition

1.3 SUBMITTALS

A. Shop drawings: shall be submitted for the following items:
1. Electrical controls and enclosures
2. Pumping Equipment

B. Product data: at a minimum, the following information shall be provided.

1. Pumps
a. Manufacturer Name
b. Model, including dimensions
c. Minimum required submergence
d. Discharge connections
e. Weight of complete assembly, including motor
f. Mounting material and details

g. Certified performance curves showing capacity, head, NPSH requirements, efficiency and bhp requirements

2. Pump Motors
   a. Manufacturer Name
   b. Model
   c. Size of motor (hp)
   d. Starting current
   e. Current, power factor and efficiency at no-load, ½ load, ¾ load, full

3. Electrical Controls
   a. Manufacturer
   b. Details view of enclosures, inside and out
   c. Parts list
   d. Size of breakers, fuses, etc
   e. Wiring Diagram

C. Maintenance Data: at a minimum the following information shall be provided.
   1. Operating procedures, start-up procedures
   2. Manufacturer's instructions for maintenance, and service and care
   3. Service manual
   4. Shop drawings
   5. Spare parts
   6. Warranties & bonds
   7. Troubleshooting procedures
   8. Safety requirements, operating cautions
   9. Overall system diagrams for use by operations and maintenance personnel

2. PRODUCTS

2.1 Pumps

A. Acceptable Products:

1. Equalization Pumps

   a. Myers WHR5-21 ½ hp
   b. Liberty LE50 ½ hp
   c. Ashland SW50W1-20 ½ hp

2. Dosing Pumps

   a. Orenco PF5000712 ¾ hp
   b. Goulds 55EB0722J ¾ hp
   c. STA-RITE STEP50 1 hp

B. General: Pumps shall be submersible, non-clog wastewater pumps. A sump pump is not an approved pump.

C. Materials: The volute case shall be of cast iron and shall be provided with bolt-on flange. All iron castings shall be pretreated with phosphate and

chromic rinse and shall be painted with a high quality, lead free, alkyd enamel air dry paint. All fasteners to be 302 stainless steel.

D. Impellers: Shall be cast iron and of the recess type. Pump-out vane shall be used on back shroud. Impeller shall be dynamically balanced. Impeller to be threaded on shaft and held in position with locknut. Impeller and motor shall have top lift-out of case so that the assembly can be removed without disturbing any piping.

E. Seals:

1. Shaft Seals: Motor shall be protected by a rotating mechanical seal. Seal face shall be carbon and ceramic and lapped to a flatness of one light band.

F. Pump Shaft: Motor pump shaft shall be of 416 stainless steel and shall be heat shrunk into the die cast motor rotor. Rotor shaft shall be supported by a lower ball bearing to take thrust and radial loads and by an upper bronze sleeve bearing to take radial load only.

2.2 Pump Motor

A. General: Pump motors shall be sized by the manufacturer to operate the equipment at the appropriate speed and over the full range of the impeller without exceeding the nameplate horsepower rating. The motors shall be capable of continuous duty, sustaining a minimum of 2 starts per hour and operating in totally, partially or non-submerged conditions.

B. Stator: Stator winding shall be of the open type with Class A (105°C) insulation for operating in clean dielectric oil that lubricates bearings and seals and cools the winding. Stator shall be pressed into housing for the best alignment and heat transfer.

C. Temperature control: Single phase motor shall have an overload element embedded in the winding to protect the motor against over current and overheating conditions. Overload element shall automatically reset when motor cools.

2.3 Pump Controls

A. Flow Equalization Tank Pump

1. The flow control switches are to be set in the field at time of installation:
   a. Pump off float – 9” from the bottom of tank
   b. Timer enable float – 15” from the bottom of tank
   c. High water alarm float – 6” below the outlet of tank, recommended

2. The timer enabled controller shall be set to deliver two doses per hour, 62.5 gallons per dose (3,000 gallons over average day). The controller can be adjusted to deliver a maximum of four doses per hour.

B. Dosing Chamber Pump

1. The flow control switches are to be set in the field at time of installation:
   a. Pump off float – 9” from the bottom of tank
   b. Pump on float – 21” from the bottom of tank
   c. High water alarm float – 6” below the outlet of tank, recommended

2. The timer enabled controller shall be set to deliver two doses per day, 1,500 gallons per dose (3,000 gallons over average day). The timer enabled controller shall also be able to cycle the dosing volume equally to all infiltration zones through the automatic distribution valve during each dose.

C. The pumps shall alternate each cycle.

2.4 Pump Basic Operating Conditions

A. Flow Equalization Tank Pump Operating Conditions

1. The pumps shall be operated automatically or manually, as a pump down, lead/lag, common off system. Each pump shall be controlled primarily through “Hand-Off-Auto” position maintained selector switches. The position commands are defined as follows:

   a. OFF- In this position the applicable pump will not run under any circumstance.
   b. HAND - In this position the applicable pump shall run without regard for the level sensing commands and will rely on operator discipline to run and stop. The controls shall be designed so that only one pump may run in either the “hand” or “auto” mode.
   c. AUTO - In this position both pumps shall be controlled by the level probe equipment and programmable timer. The controls shall be designed so that only one pump may run in either the “hand” or “auto” mode.

B. Dosing Chamber Pump Operating Conditions

1. The pumps shall be operated automatically or manually, as a pump down, lead/lag, common off system. Each pump shall be controlled primarily through “Hand-Off-Auto” position maintained selector switches. The position commands are defined as follows:

   a. OFF- In this position the applicable pump will not run under any circumstance.
   b. HAND - In this position the applicable pump shall run without regard for the level sensing commands and will rely on operator discipline to run and stop. The controls shall be designed so that only one pump may run in either the “hand” or “auto” mode.
   c. AUTO - In this position both pumps shall be controlled by the level probe equipment and programmable timer. The controls shall be designed so that only one pump may run in either the “hand” or “auto” mode.

3. EXECUTION

3.1 INSTALLATION

A. Install to manufacturer specifications.

END 33 32 00.

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid:

1. General Contractor:

a. The work to be performed under this section of the specifications shall include all labor, materials, equipment and transportation necessary for installing the septic tank, flow equalization tank and all other tanks specified in the drawings.

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 33 32 00 - Sanitary Sewerage Equipment

2. Section 33 34 23 - Onsite Aerobic Equipment

1.3 SUBMITTALS

A. Shop drawings:

1. Indicate structure locations, elevations, sections, equipment supports, piping, conduit, and sizes and elevations of penetrations.

2. Indicate design, construction and installation details, typical reinforcement and additional reinforcement at openings and for each custom type, size and configuration.

3. The documents referenced herein shall be signed and sealed by a structural engineer licensed in the State of Illinois.

B. Product data:

1. Acknowledgement that products submitted meet requirements of standards referenced.

2. Submit data for frames and covers, steps, component construction, features, configuration, dimensions.

3. Hardware to be utilized to support suspended appurtenances.

4. Manufacturer's installation instructions.

1.4 QUALITY ASSURANCE

A. General:

1. Obtain concrete septic tanks from single source.

2. Perform structural design in accordance with ACI 318.

3. Conform to ASTM C1227.

4. Perform Work in accordance with NPCA Quality Control Manual for Precast Plants.

5. Perform welding in accordance with the following:
   a. Structural Steel: AWS D1.1.
   b. Reinforcing Steel: AWS D1.4.

B. Qualifications:

1. Manufacturer shall specialize in manufacturing products specified in this Section with minimum [5] years documented experience.

2. Installer shall specialize in performing work of this section with minimum [5] years documented experience approved by manufacturer.

3. Welders: AWS qualified within previous 12 months.

1.5 DELIVERY, STORAGE AND HANDLING

A. Do not ship units until they have reached their 28-day required compressive strengths.

B. Transport and handle precast concrete units with equipment designed to protect units from damage.

C. Do not place units in position to cause overstress, warp, or twist.

D. Secure openings to prevent access or entrapment of animals.

2. PRODUCTS

2.1 CONCRETE SEPTIC TANKS

A. Materials

1. Portland Cement: ASTM C150, Type I or II in accordance with ASTM C1227.

2. Aggregates: Clean and well-graded in accordance with ASTM C33 or C330 and ASTM C1227.

3. Water: Potable in accordance with ASTM C1227.

4. Admixtures: In accordance with ASTM C1227.

5. Air-entraining Admixtures: In accordance with ASTM C1227.

6. Reinforcement: Wire, wire fabric, or bars in accordance with ASTM C1227.

B. Design:

1. Provide precast, water tight, traffic-rated, reinforced-concrete tanks and covers fabricated in accordance with ASTM C1227.

2. Design the tank in accordance with ASTM C890.

3. Concrete:

a. Compressive Strength: 4,000 psi in 28 days unless otherwise shown on the drawings.

b. Mix proportions: ACI 318 Chapter 5.

c. Water-Cement Ratio:
1.) Exposed to freezing and thawing: 0.45 or less with entrained air.
2.) Not exposed to freezing, but required to be watertight 0.48 or less.

d. Air Content:

1.) For concrete that will be exposed to freezing conditions maintain the air content as follows:

Nominal Maximum Aggregate Size (Inches) Air Content, %	**Air Content, % Severe Exposure**	**Moderate Exposure**
3/8	6.0 to 9.0	4.5 to 7.5
1/2	5.5 to 8.5	4.0 to 7.0
3/4	4.5 to 7.5	3.5 to 6.5
1	4.5 to 7.5	3.0 to 6.0
1 1/2	4.5 to 7.0	3.0 to 6.0

NOTE: For specified compressive strengths greater than 5,000 psi, air content may be reduced 1%.

Tank	**Volume, gal**	**Type**
Septic	6,000	Double Chamber
Flow Equalization	12,000	Single Chamber
FBBR Unit “A”	4,200	Single Chamber
FBBR Unit “B”	4,200	Single Chamber
Dosing	6,000	Single Chamber

4. Size tank for a liquid level of 48-IN min as measured from bottom of the tank to invert of the outlet unless otherwise shown.

5. Provide 24-inch minimum access over both the inlet and outlet tees with reinforced-concrete risers topped with frames and covers to elevation shown on drawings.

6. Provide a 30-inch access over the effluent pump to remove pump with reinforced-concrete risers and cast iron frame and cover to elevation as shown on drawings.

7. Provide vents on tank with effluent pumps.

2.2 ACCESSORIES

A. Frames and Covers:

1. Provide frame and covers with machined flat bearing surfaces labeled SEWER to the size shown on the Drawings.
   a. Non-traffic Areas: Provide ASTM A48 Class 30B cast iron frames and covers designed for an H-20 loading.
   b. Traffic Areas: Provide ASTM A536 Class 35B ductile iron frames and covers designed for AASHTO M306 loading.

2. Provide watertight manhole frames and covers where shown on drawings, in areas where the top of the frame and cover is below the 100-year flood elevation, or when the surface is subjected to ponding or snow. Provide units with a minimum of four bolts and a gasket designed to seal cover to frame.

3. Acceptable Manufacturers: Neenah Foundry, Deeter, U.S. Foundry

B. Premolded joint sealant: ASTM C990, bitumen or butyl rubber. Acceptable Manufacturers: Conseal, Ram-Nek, A-lok

C. Flexible Seals: ASTM C923.

3. EXECUTION

3.1 GENERAL

A. Install tanks in accordance with manufacturer's instructions.

3.2 EXCAVATION

A. Excavate sufficient width and length for tanks to depth determined by tank inlet elevation. Stockpile topsoil for reuse in finish grading without intermixing with other excavated material.

B. Stockpile materials away from edge of excavation and do not store within drip line of remaining trees.

C. Place, grade, and shape stockpiles to drain surface water. Cover to prevent wind-blown dust when required.

D. Prepare level subgrade free of debris, jagged or protruding rocks, and standing water. Replace any unsuitable soil to the extents directed by the Using Agency and compact.

3.3 INSTALLATION

A. Install tanks level in a dry excavation according to ASTM C891 and the tank manufacturer's instructions.

B. Backfill with excavated soil, and compact as shown on drawings.

C. Replace topsoil and restore site to original conditions.

D. Mound soil above original grade without compacting where indicated.

3.4 FIELD QUALITY CONTROL

A. Water Pressure Testing:

1. Fill underground tanks with water and let stand overnight. If water level re-cedes, locate and repair leaks and retest at no additional cost to the Using Agency. Re-peat tests and repairs until no leaks exist.

3.5 CLEANING

A. Clear interior of piping and structures of dirt and other superfluous material as work progresses.

3.6 SITE SECURITY

A. Secure the site, excavations, trenches, and utilities at the end of each work day.

1. Plug the end of all exposed pipes and secure lids on all tanks.

2. Do not leave pits open overnight in roadways open to the public unless otherwise protected in the traffic plan.

3. Fence off work areas that have open pits greater that 5-feet in depth or that contain standing water.

END 33 34 13.

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid:

1. General Contractor:
   a. The work to be performed under this section of the specifications shall include all labor, materials, equipment and transportation necessary for installing the fixed-bed bioreactor (FBBR) wastewater treatment system, complete and ready for operation in accordance with the project plans and specifications, and these specifications as stated herein.

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 33 32 00 - Sanitary Sewerage Equipment

2. Section 33 34 13 - Septic Tanks

1.3 SUBMITTALS

A. Shop drawings: shall indicate structure location, elevations and sizes, and elevations of penetrations. Shall indicate design, construction and installation details.

B. Product data: shall acknowledge that products submitted meet requirements of standards referenced. Shall include manufacturer data for all products indicating make, model, size, and materials of construction, and manufacturer's installation instructions.

C. Experience: Manufacturer experience as specified in section 3.4.A.

D. Maintenance Data: at a minimum the following information shall be provided.

1. Operating characteristics, limiting condition
2. As-installed control diagrams
3. Parts nomenclature and numbers
4. Operating procedures, start-up procedures
5. Manufacturer's instructions for maintenance, and service and care
6. Service manual
7. Spare parts
8. Safety requirements, operating cautions
9. Overall system diagrams for use by operations and maintenance personnel

1.4 WARRANTIES

A. Shall guarantee the parts in each treatment system for against defective material or workmanship for a period of 2 years from final competition. If any materials or workmanship prove to be defective within 2 years, they shall be replaced or repaired by the contractor at his own expense. There shall be inspections of the treatment system every 6 months up to the 2 year warranty, to make all necessary repairs and touch ups at the Using Agency's instructions.

2. PRODUCTS

2.1 FOUNDATIONS

A. The soil underneath the reinforced concrete foundation pad shall provide a uniform and level surface free of soft zones, organic soils, clays and clayey materials that don't provide a minimum allowable bearing capacity of 2000 pounds per square foot. Replacement soils featuring good structural properties, such as compacted and well graded coarse sands or crushed rock can be used to achieve the desired soil strength.

2.2 INLET CONNECTION

A. An influent connection to the wastewater system shall be provided using either an NPT or flange connection and sized as shown on plans.

2.3 PRIMARY SEPTIC TANK

A. A primary tank shall be dual compartment and will provide a total minimum volume of 6,000 gallons. The primary chamber shall be designed with inlet and outlet pipes as required by state regulations pertaining to septic tanks. A properly sized effluent filter will be supplied at the outlet side of the primary tank, to allow for suspended solids removal.

2.4 SEPTIC EFFLUENT FILTER

A. Acceptable Products:

1. Polylock PL-525
2. Zabel A100
3. Orenco FT-1500
4. SaniTEE SNT 838

B. The septic effluent filter shall be rated for 10,000 gallons per day. It shall have a minimum 525 linear feet of 1/16" filtration slots and shall have an automatic shut-off ball installed with the filter. There shall also be a built in gas deflector. The filter shall be certified to NSF/ANSI Standard 46.

2.5 FBBR REACTOR TANK(S)

A. The reactor tanks shall feature a fixed-bed bioreactor (FBBR) treatment system housing an engineered plastic media, specifically designed to treat domestic wastewater. The reactors shall be in parallel and submerged in the reactor chambers. The inlet invert shall be 3 inches above the outlet invert in the reactor chambers.

B. An external air compressor is connected to the tanks to provide the necessary air to the system. There are no moving mechanical parts in the FBBR. The reactor chamber shall have adequate storage area for the microbial masses that slough off the media. The reactor chamber shall have an adjustable multiple V-notch PVC weir plate secured with stainless steel machine screws for final leveling at the effluent trough to maintain water levels over the media at 2 inches +/- 1/2 inch. The average effluent weir overflow rate shall not exceed 2,500 gallons per day per foot of weir length.

C. The reactor chambers shall be positioned as shown on the plans and shall be sized to provide adequate treatment capacity to achieve an effluent with parameters shown in Section 3.1.B of these specifications.

2.6 FBBR MEDIA CONTAINER

A. Acceptable Products:

1. Delta ECOPOD E300 (No substitutions will be acceptable)

B. The reactor container shall be fabricated of 1/8” stainless steel and be adequately sized to hold the necessary amount of media. The container shall be rectangular with 4 sides, with the top and bottom remaining open. The reactor container shall have an inlet connection from the primary septic tank. The water and air movement and velocities shall facilitate biomass growth and aerobic treatment, and periodic sloughing to the bottom of the chamber where anaerobic digestion occurs.

2.7 FBBR MEDIA

A. Acceptable Products:

1. Delta ECOPOD E300 (No substitutions will be acceptable)

B. Each media block measures 4’ long x 2’ wide x 2’ tall and shall offer a minimum surface area of 47 square feet per cubic foot and a flow cavity that constantly splits the flow while flushing any unusual solids/biomass buildup. The media shall be constructed of rigid, corrugated and cuspated PVC sheets which are UV protected and resistant to rot, fungi, bacteria, acids and alkalis commonly found in municipal wastewater. The media must provide for microbial attachment, purely vertical air movement, downward wastewater movement and biomass sloughing via vertical aeration flutes. Slanted or elbowed aperture flutes in the media are not allowed. The media aperture size cannot exceed 1.5 inches along the y-axis or an average of 1.5” along the x-axis, with those axes being oriented in plan view.

2.8 AIR DIFFUSION

A. Drop pipes of 1-inch diameter schedule 40 PVC pipe shall supply air to diffusers. The diffusers shall be the submerged-tip type allowing for self-cleaning upon stoppage and reintroduction of the air supply. Each air drop shall consist of a minimum of 6 air release points under the media. Each air release point shall be a specially designed air port that is non-clogging. Air release ports shall be spaced to encourage uniform air bubble distribution.

2.9 AIR SUPPLY SYSTEM

A. Acceptable Products:

1. FPZ K04-MS 2 hp Blowers
2. AMETEK Rotron DR505 2 hp Blowers
3. Gast R5325R-50

B. For supplying the air requirements of the wastewater treatment system, a duplex blower package shall be furnished and installed at the location shown on the plans or on the approved shop drawings. The blowers shall be of the regenerative type. For determining the blower performance, and/or diffuser condition, a pressure relief valve and pressure gauge shall be mounted in the air manifold.

1. The blower system shall be provided as a complete unit with check valve and shut off valve installed. Each blower motor unit shall have the capacity of supplying 100% of the wastewater air requirements. Each unit shall be completely factory built and tested before shipping.

2. Each blower unit shall be capable of delivering 45 ICFM at an operating pressure of 2.2 psi. The motor shall be 2 horsepower for operation on 120/240 Volt, 1 - phase, 60 cycle service at 3,500 RPM.

3. The blower shall be mounted on a base which shall be designed to support the blower and motor unit and shall feature vibration dampening pads.

4. Each blower shall be fitted with an air inlet filter.

5. For outdoor installations only each blower and motor shall be enclosed with a fiberglass weatherproof enclosure. The weatherproof hood shall be designed for easy access to service the blower, motor, and filter. It shall be equipped with a lifting handle and locking facilities. All enclosure surfaces shall be properly prepared in a neat manner to obtain a smooth, clean dry surface. The enclosure and the base shall have a light-colored finish.

6. The blowers shall operate 24 hours a day, 7 days a week on an alternator which switches each blower every 12 hours.

2.10 ELECTRICAL CONTROL PANEL

A. An electrical control panel shall be installed within a NEMA 4X weatherproof enclosure complete with a mounting pedestal or legs when required by the approved shop drawings.

B. The electrical panel shall control the operation of all the auxiliary component equipment requiring electrical power. The blower motor unit operation time will be controlled by the blower timer. The necessary selector switches shall be provided to allow either automatic or manual operation of the auxiliary equipment.

C. The electrical controls shall consist of IEC starters, timers, and selector switches necessary. Properly sized circuit breakers or fuses shall protect all electrical equipment and circuitry.

D. All wiring and electrical conduit required shall be furnished by and installed by the Contractor. The electrical control panel shall be detached for shipping purposes. The main power supply shall be 120/240 Volt, 1 - phase, 60 cycle service. A power block in the control panel shall be supplied for the electrical connection.

E. The control panel shall be completely factory assembled and tested prior to shipment and shall have an override switch to each audible alarm.

F. Controls shall be mounted to a removable sub-panel within the enclosure and shall be wired and spaced in accordance with the latest National Electric Code.

G. All wiring conductors within the control console shall be UL type MTW, stranded #14 AWG minimum, rated at 110 volts. Power wiring shall be color coded per National Electric Code standards. Control wiring shall be numbered on each end with a permanent heat-shrinkable sleeving made of flexible, irradiated, flame-retardant polyolefin.

2.11 CONTROL PANEL ALARM

A. The electrical control panel shall be furnished with power failure, blower failure and local alarms. It shall also include an alarm silencer switch. A battery pack shall be provided for this alarm when required and included in the approved shop drawings.

2.12 PIPING

A. All necessary piping and valves inside the plant shall be provided by the manufacturer. The manufacturer shall not be responsible for piping or valves outside of the treatment plant.

2.13 FLOW EQUALIZATION TANK

A. A flow equalization (EQ) tank shall be provided as an integral section of the treatment system and shall be of sufficient capacity to provide an approximate total tank volume of 12,000 gallons. It shall be constructed in accordance with the approved shop drawings and will include dual EQ pumps, a liquid level control system, and integrated electrical controls. Each EQ pump shall be supplied with a slide rail assembly.

2.14 DOSING TANK

A. A dosing tank shall be provided as an integral section of the treatment system and shall be of sufficient capacity to provide an approximate total tank volume of 6,000 gallons. It shall be constructed in accordance with the approved shop drawings and will include dual EQ pumps, a liquid level control system, and integrated electrical controls. Each EQ pump shall be supplied with a slide rail assembly.

3. EXECUTION

3.1 SYSTEM DESIGN PARAMETERS

A. The system shall be a submerged and aerated fixed-bed bioreactor type and shall be complete with all component equipment necessary for efficient and proper plant operation. The system shall be designed for treating a total flow of 3,000 gallons per day with the influent characteristics as shown below.

B. The following are the influent characteristics of the specified system:

Design flow:	3,000 gallons per day
Peak hourly flow rate:	not to exceed 2.5 times the hourly design flow rate
5-day Biochemical Oxygen Demand (BOD_5):	500 mg/L
Total Suspended Solids (TSS):	300 mg/L
Water Temperature Range:	10 to 20 degrees C
Elevation from sea level:	673 feet
Air temperature range:	0 to 40 degrees C
pH range:	6.5 to 8.5

C. It is assumed that no substances shall be placed in the system in quantities which are not biodegradable or are toxic to the biological organisms. The system shall be designed to handle the average daily flow fluctuation over a range of 50% to 100% of the design flow with the peak flow rate not to exceed the above value.

D. The treatment system shall be designed and constructed to provide effluent meeting the following requirements.

BOD_5:	30 mg/L or less
TSS:	30 mg/L or less

3.2 FIELD ASSEMBLY

A. The FBBR treatment system shall be assembled and installed by the Contractor in accordance with the manufacturer's recommendations and guidelines. The manufacturer is required to conduct a preconstruction conference with any Contractor and subcontractor personnel present who will be involved in the project.

B. The treatments system shall be installed by a sewage disposal installation Contractor licensed by the State of Illinois. The license number must be provided prior to construction.

3.3 START UP

A. After the treatment system has been installed with all necessary electrical connections completed and influent and effluent piping in place, the manufacturer shall inspect the installation, inform the Using Agency as to any necessary adjustments and instruct the plant operator on proper operation of the plant. A maintenance manual shall be provided for the operator. The manual shall include normal operation description, maintenance schedule, wiring diagram, and manufacturer's equipment manuals for major components.

3.4 MANUFACTURER EXPERIENCE REQUIREMENTS

A. The manufacturer shall have at least 30 years of experience in the design and fabrication of package wastewater systems and shall be actively engaged in the design and fabrication of the specified system currently. The manufacturer must have documented and proven history of field support and troubleshooting expertise dating back at least 20 years. Alternative products must be submitted to the A/E for consideration at least fourteen (14) days prior to the scheduled bid date in order to allow adequate time for review by the A/E. Trickling filter type systems will not be allowed, Nor will those systems using contained, small-particle media.

3.5 WORKMANSHIP AND EXPERIENCE

A. All workmanship and materials shall be of the highest quality. The wastewater treatment plant shall be the product of an experienced manufacturer actively engaged in research and development of sewage treatment facilities

END 33 34 23.

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid:

1. General Contractor:

a. The work to be performed under this section of the specifications shall include all labor, materials, equipment and transportation necessary for installing low pressure PVC distribution piping and appurtenances, perforated PVC piping, drainage rock, geosynthetic infiltration aggregate bundles and all associated grading and site work to have a complete and working drainage field that is free of standing water and ponding. A complete drainage field system shall include all pressurized components from discharge of the dosing chamber structure to the low-pressure pipe network as detailed in the Drawings, as well as the associated perimeter drain and site work.

1.2 RELATED WORK

A. Specified Elsewhere:

1. Section 31 11 00 – Clearing and Grubbing

2. Section 31 23 00 – Excavation and Fill

3. Section 31 25 00 – Erosion and Sedimentation Controls

4. Section 33 31 13 – Site Sanitary Sewerage Piping and Appurtenances

1.3 SUBMITTALS

A. Shop drawings: shall indicate structure location, elevations and sizes, and elevations of penetrations. Shall indicate design, construction and installation details.

B. Product data: shall acknowledge that products submitted meet requirements of standards referenced. Shall include manufacturer data for all products indicating make, model, size, and materials of construction, and manufacturer's installation instructions.

C. Maintenance Data: at a minimum the following information shall be provided.
1. Operating procedures, start-up procedures
2. Manufacturer's instructions for maintenance, and service and care
3. Service manual
4. Spare parts
5. Overall system diagrams for use by operations and maintenance personnel

2. PRODUCTS

2.1 PVC DISTRIBUTION PIPE

A. Provide SCH 40 PVC pipe as low-pressure pipe system in accordance with ASTM D2665.

1. Pressure system: 1.5” pipe with 3/16” diameter orifices at 12 o’clock, spaced 5 foot centers
2. Fittings: ASTM D2466
3. Joints: ASTM D2855, solvent weld with ASTM D2564 solvent cement.

B. Provide SDR 35 PVC perforated pipe as curtain drain with sock in accordance with ASTM D1785.

1. Gravity system: 4” pipe with 2 row 1/2” diameter perforations at 4 o’clock and 8 o’clock, spaced 5 inch centers.
2. Fittings: ASTM D3034
3. Gaskets: ASTM F477, elastomeric seals
4. Joints: ASTM D3212

2.2 GEOSYNTHETIC AGGREGATE BUNDLES

1. Acceptable Products:

   a. EZflow 0803H-LPP (No substitutions will be acceptable)

B. The geosynthetic aggregated bundle shall contain a single-wall, corrugated slotted drainage pipe is constructed of polyethylene resins with high recycled content typically greater than 90%. Pipe meets ASTM F405. Slot orientation is “random” and pipe rotation within each bundle is inconsequential to drainage system function. The pipe is aligned either along the center axis or touching bottom edge of the bundle, depending upon application and code requirements.

C. The bundles shall be filled with geosynthetic drainage aggregate that is made from 100% recycled polystyrene (EPS) materials. The aggregate beads shall be cubical and have protuberances that provide increased pore space and flow characteristics for drainage applications.

   The bundles shall be wrapped in a 30-sieve geotextile mesh fabric that has an apparent opening size of 0.60 mm, a unit weight between 2.5 and 3.5 ounces per square yard, and strength of 100 pounds per square inch in accordance with ASTM D-3786. The flow rate through the mesh is 300 gallons per minute per foot at 3” of head in accordance with ASTM D-4491.

D. Spacing, depth of cover and trench width shall be as shown on the Construction Drawings.

2.3 DRAIN ROCK

A. ASTM D448, Size No. 24, 1/2 to 2-1/2 inches, washed, crushed stone or gravel.

B. All drainage rock shall be wrapped in a non-woven geo-textile filter fabric.

2.4 FILL MATERIAL

A. Native soil from trench excavation.

3. EXECUTION

3.1 PREPARATION

A. Site clearing: the site shall be cleared according to Section 31 11 00 – Clearing and Grubbing

B. Final grading: the site shall be sloped away from the drainage field and have positive drainage to prevent ponding within the drainage field.

3.2 INSTALLATION

A. General

1. The distribution system and components shall be installed in accordance with manufacturer's recommendations.

2. Examine excavations for smoothness and ensure it is free of rocks, debris and live roots.

3. Rake or scarify exposed subgrade in drain field to loosen smeared or compacted soil.

4. Cover or plug all open pipes ends at the end of each workday to prevent intrusion of dirt, debris, foreign objects, pests, rodents and other wildlife.

B. PVC Distribution Pipe

1. Low-pressure distribution piping system shall be installed in accordance with the specifications in Section 33 05 06 Buried Piping and Appurtenances Installation.

2. Perforated PVC pipe as curtain drain shall be installed as follows:
   a. Excavate trenches to line and grade shown in the Drawings.
   b. Place drain rock to the depth and extent shown on the Drawings and grade bottom of the trench level to evenly support pipe.
   c. Set perforated pipe level, maintain +/- ¼" tolerance, and with the holes pointed down.
   d. Backfill with excavated soil, mounding soil above original grade without compacting.

C. Geosynthetic Aggregate Bundles

1. This product must be installed in accordance with the appropriate state regulations, codes and manufacturer recommendations.

    a. Stake or mark the location of the trenches and lines. Then, set the tank, invert pipe, headerline/distribution box, and trench elevations before installation of pipe bundles. Care should be taken to maintain the required vertical separation of at least 24-inches to the seasonal groundwater table.
    b. Remove any stretch wrap from the bundles, in the trench or bed before the system is covered.
    c. Place the bundles in the approved configuration. The bundle containing pipe is joined end to end with an internal pipe coupler. The aggregate-only bundle should be butted against the other aggregate-only bundles and do not require any type of connection.
    d. The top of each bundle shall contain a pre-manufactured filter fabric between the netting and aggregate. The installer shall ensure that the fabric is on top and is in contact with the fabric contained in the adjacent cylinder before backfilling. The span of fabric at each sidewall shall not exceed 180 degree reach (i.e. 9 o'clock to 3 o'clock).
    e. Verify that trenches are level or have the prescribed slope.
    f. The bundles should be flexible and fit in curved trenches, as needed, to avoid trees or other obstacles.
    g. Soil material excavated from trenches, if suitable per code, should be used in backfilling and should be left mounded over the trenches until initial settling has taken place. Soil within 6" of the EPS bundles shall be loosely placed and not compacted.
    h. Before covering the system, it shall be inspected by the A/E. The area of the disposal field shall not be used for vehicular traffic, parking, or underground utilities (i.e. water lines). Dozers, trucks, and other heavy vehicles shall not be allowed to run over the septic tank, drainage field or other parts of the system.

END 33 34 51.