

REGAN YOUNG ENGLAND BUTERA

REFERENDUMS • ENGINEERING • ARCHITECTURE • DESIGN

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A BLUEPRINT FOR BETTER

PROJECT MANUAL

EVESHAM TOWNSHIP PUBLIC WORKS BUILDING-03 ADDITION & ALTERATIONS

100 SHARP ROAD
MARLTON, NEW JERSEY 08053



EVESHAM TOWNSHIP
MUNICIPAL BUILDING
984 TUCKERTON ROAD
MARLTON, NEW JERSEY 08053
(856) 983-2900

REGAN YOUNG, AIA
NEW JERSEY REGISTRATION NO. 21A00912100

RYEBREAD PROJECT 5596E
11 DECEMBER 2019

*Working together, we can create building envelopes/systems/interiors/contexts
that are more safe, productive, healthy, efficient, and distinctive.*

BUILDING-03 ADDITION & ALTERATIONS
 EVESHAM TOWNSHIP
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SECTION 000030 - ABBREVIATIONS

PART 1 - GENERAL

SUMMARY

The following abbreviations and symbols are used throughout the Contract Documents.

SYMBOLS

<	angle
~	approximately
[channel
x°	degree (s)
ø	diameter
#x	number
↓	perpendicular
x#	pound (s)
●	extra mat'ls/service agreem'ts req'd

ASPH	asphalt
A/V	audio visual
AUTO	automatic
AVE	avenue

BSMT	basement
BRM	bathroom
BM	beam
BRG	bearing
BRG PL	bearing plate
BM	bench mark
BLW	below
BET	between
BIT	bituminous
BLK	block
BLKG	blocking
BD	board
BO	bottom of...
BOT	bottom
BCB	bottom chord bearing
BOS	bottom of steel
BRK	brick
BLDG	building
BL	building line

ABBREVIATIONS

ABV	above
AFF	above finish floor
ASC	above suspended ceiling
ACC	access
ACFL	access floor
AP	access panel
APC	acoustical panel ceiling
ATC	acoustical tile ceiling
ADJ	adjacent
ADJT	adjustable
AFFID	affidavit
AGG	aggregate
A/C	air conditioning
ALT	alternate
ALUM	aluminum
ADA	american w/ disability act
AB	anchor bolt
ANOD	anodized
APP	application
APPROX	approximate(ly)
ARCHT	architect(ural)
A/E	architect/engineer
AD	area drain
APM	as per manufacturer

CAB	cabinet
CTV	cable television
CPT	carpet(ed), (ing)
CSMT	casement
CI	cast iron
CIPC	cast-in place concrete
CST	cast stone
CB	catch basin
CLK	caulk(ing)
CLG	ceiling
CH	ceiling height
CTR	center

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CC	center to center	EA	each
CT	ceramic tile	EF	each face
CMT	ceramic mosaic tile	E	east
CERT	certificate	ELEC	electric(al)
CHBD	chalkboard	EC	electrical closet
CLRM	classroom	EP	electrical panel
CO	clean out	EWC	electric water cooler
CLR	clear(ance)	EL	elevation
CL	closet	ELEV	elevator
COL	column(s)	EMER	emergency
COMP	complete(d), (ing)	EQ	equal
CONC	concrete	EQUIP	equipment
CMU	concrete masonry unit	EST	estimate
CU	condensing unit	EXCAV	excavate
CONF	conference	EF	exhaust fan
CONST	construction	EX	exist(ing)
CONT	continue(ous)	EXIST(*G)	exist(ing)
CONTR	contract(or)	EJ	expansion joint
CLL	contract limit line	EXP	exposed
CJ	control joint	EXT	exterior
COORD	coordinate(ation)	EIFS	ext insul & fin sys
CORR	corridor		
CRS	course(ing), (s)	FAB	fabricate(d)
CFT	cubic foot	FB	face brick
CU YD	cubic yard	FOC	face of concrete
		FOF	face of finish
DP	dampproofing	FOM	face of masonry
DL	dead load	FT	feet, foot
DEG	degree	FBGL	fiberglass
DEMO	demolish, demolition	FIN	finish
DMT	demountable	FF	finsh floor
DTL	detail(ed), (ing), (s)	FE	fire extinguisher
DIAG	diagonal	FEC	fire extinguisher cabinet
DIA	diameter	FPL	fireplace
DIM	dimension	FP	fireproof
DRM	dining room	FLASH'G	flashing
DSPR	dispenser	FLR	floor(ing)
DIV	division	FD	floor drain
DR	door	FLUR	fluorescent
DA	doubleacting	FJ	flush joint
DH	double hung	FTG	footing
DN	down	FND	foundation
DS	downspout	FBO	furnished by others
D	drain		
DWG	drawing(s)	GA	gauge
DF	drinking fountain	GALV	galvanized
D/W	drywall	GC	general contract(or)

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GL	glass, glazing	LVR	louver
GB	grab bar		
GD	grade(ing)		
GFI	ground fault interrupt	MH	manhole
GR	guard rail	MFR	manufacture(r)
GWB	gypsum wall board	MO	masonry opening
		MAT'L	material(s)
		MAX	maximum
HC	handicap	MECH	mechanical
HR	handrail	MC	medicine cabinet
HDW	hardware	MED	medium
HDR	header	MTL	metal
HTR	heater	MIN	minimum
HVAC	heating/ventilating & a/c	MIR	mirror
HT	height	MISC	miscellaneous
HC	hollow core	MOD	modular
HM	hollow metal	MT	mount(ed), (ing)
HORZ	horizontal	MHT	mounting height
HB	hose bibb		
HWH	hot water heater		
		NOM	nominal
		N	north
IRWC	impact resist. wall cover	NIC	not in contract
ID	inside diameter	NTS	not to scale
INSUL	insulate(d), (ion)	NO	number
INT	interior	NJUCC	NJ Uniform Constr. Code
INV	invert		
		OFF	office
JC	janitor's closet	O/C	on center
JST	joist	OPN'G	opening
JT	joint	OPP	opposite
		OPT	optional
KIT	kitchen	OA	outside air
		OD	outside diameter
		OA	overall
		OH	overhead
LAB	laboratory		
LBS	pounds	PNT	paint
LBL	lable	PNL	panel
LAV	lavatory	PAN	pantry
LH	left hand	PAR	parallel
L	length	PKG	parking
LTG	lighting	PTN	partition
LT FIX	light fixture	PVMT	pavement
LF	lineal foot	PAYMT	payment
LIN	linen closet	PL	plate
LTL	lintel	PLYWD	plywood
LL	live load		
LIV	living room		

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PNT	point	SYS	system
PVC	polyvinyl chloride	SV	sheet vinyl
PCF	pounds per cubic foot		
PLF	pounds per lineal foot		
PSF	pounds per square foot	TELE	telephone
PSI	pounds per square foot	THK	thick(ness)
PCL	Precast lintel	TG	tempered glass
PREFAB	prefabricate(d)	T&G	tongue and grove
PTL	property line	TO	top of...
PROP	proposed	TOP	top of parapet
		TOS	top of steel
		TOW	top of wall
RAD	radius	TB	towel bar
RAFT	rafter(s)	T	tread
RAH	roof area hatch	TYP	typical
RWC	rain water conductor		
REF	reference		
RYEB	Regan Young England Butera	UC	under cut
REINF	reinforce(d), (ing)	U/D	unfinished drywall
REQ'D	required	UL	underwriters laboratory
RF	Resinous Flooring	UR	urinal
RH	right hand		
ROW	right of way		
R	riser	VERT	vertical
RF'G	roofing	VB	vinyl base
RD	roof drain	VCT	vinyl composited tile
RM	room	VT	vinyl tile
RO	rough opening		
RT	rubber tile		
		WTW	wall to wall
		WC	water closet
SAFB	sound attn fire blanket	WG	wire glass
SCHED	schedule	WP	waterproof(ing)
SAU	self-adhering underlayment	WWF	welded wire fabric
SHT	sheet(s)	W	west
SIM	similar	WDW	window
SKYLT	skylight	WG	wire glass
SC	solid core	W/	with
S	south	W/O	without
SPEC	specification(s)	WOM	women
SQ FT	square feet, foot	WD	wood
SRVT	slip resistant vinyl tile	WPT	wood preservative treated
SST	stainless steel		
STD	standard		
STL	steel	YD	yard
STO	storage		
SD	storm drain		
STRUC	structure(ural)		
SYM	symmetry(ical)		

END OF SECTION 000030

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1 SECTION 000100 - ADVERTISEMENT

2
3
4 NOTICE IS HEREBY GIVEN THAT SEALED PROPOSALS FOR:

5
6 A 6,650 SF ADDITION AND ALTERATIONS TO AN EXISTING 7,000 SF PUBLIC WORKS
7 MAINTENANCE BUILDING LOCATED AT 100 SHARP ROAD; MARLTON, NEW JERSEY.

8
9 Will be received no later than **10:00 AM** prevailing time, on **Tuesday, 28 January 2020** in
10 Conference Room B of the Evesham Township Municipal Building located at 984 Tuckerton
11 Road; Marlton, New Jersey 08053.

12
13 Any bids submitted under the terms of New Jersey Statutes not including a copy of a valid and
14 active Pre-qualified/Classification Certificate and New Jersey Department of Labor Contractor
15 Registration Certificate may be rejected as being non-responsive to bid requirements.

16
17 Proposals must be addressed to the EVESHAM TOWNSHIP Municipal Building; 984 Tuckerton
18 Road; Marlton, New Jersey 08053; Attn.: Mary Lou Bergh, Township Clerk. All bids received on
19 time shall be opened and read publicly at the above time and date. The Bidder assumes full
20 responsibility for appropriate delivery (via whatever means, including mail) on or before the
21 designated time and to the designated location. The Owner is not responsible for any bids that fail
22 to be delivered on or before the designated time, and to the designated location specified by this
23 advertisement, regardless of fault. Electronic (e-mail) submissions shall not be accepted.
24 EVESHAM TOWNSHIP and REGAN YOUNG ENGLAND BUTERA, PC. assume no
25 responsibility for bids mailed or misdirected in delivery.

26
27 **Sealed bids shall be received as a SINGLE GENERAL CONSTRUCTION contract for all**
28 **work, goods and services required to complete the project.** The bid must identify the name or
29 names of all subcontractors to whom the Prime Bidder will subcontract the furnishing of: (1)
30 Plumbing and Gas Fitting; (2) Heating, Ventilation, Air Conditioning and Refrigeration; (3)
31 Electrical Work, including any electrical power plant, tele-data, fire alarm, or security system; and
32 (4) Structural Steel and Ornamental Iron Work (“Prime Subcontractors”). Each of the Prime
33 Subcontractors shall be qualified in the same manner as the Prime Bidder, in accordance with the
34 requirements of N.J.S.A. 40A:11-16. If none are required, the Prime Bidder shall input “None” on
35 the List of Subcontractors.

36
37 The project consists of, but is not limited to, the addition of an insulated metal building of
38 approximately 6,650 sf and alterations to the existing 7,000 sf maintenance building, and associated
39 site work.

40
41 The Work shall include, but not be limited to, partial demolition, site work, footings & foundations,
42 concrete, masonry, pre-engineered metal building, interior and exterior steel doors, hardware,
43 aluminum windows, insulated overhead doors, finishes, trench drains, utility reels, plumbing,
44 radiant floor heat, HVAC, fire detection and electrical.

45
46 Proposal Forms, Instructions to Bidders, Specifications and other bid documents may be made
47 available and examined by Bidders by the office of REGAN YOUNG ENGLAND BUTERA, PC;
48 456 High Street; Mt. Holly, New Jersey 08060 during regular business hours, (beginning on 18
49 December 2019). Additional information, including a list of (registered) Prime Bidders, can be

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1 obtained from the Architect's web site (www.RYEBREAD.com). Subcontractors and vendors may
2 obtain copies from registered Prime Bidders. There is a \$50.00 non-refundable cost to be a Prime
3 Bidder. An electronic copy of the specifications and drawings shall be made available to Prime
4 Bidders; hard copies of the bidding documents shall not be provided. Access to the electronic
5 documents shall be emailed to the Prime Bidder upon receipt of their payment and all of the
6 following information:

7
8 Business name
9 Contact person
10 Business mailing address
11 Business phone number
12 Business facsimile number
13 Email address
14

15 Additional information, including Addenda, a list of Prime Bidders, and project budget can be
16 obtained from the following link.

17
18 <http://www.ryebread.com/bidding/>
19

20 Inquiries shall be directed to:

21
22 Angelo. P Butera, AIA, LEED AP
23 REGAN YOUNG ENGLAND BUTERA, PC
24 456 High Street
25 Mt. Holly, NJ 08060
26 (609) 265-2652/0333 Fax
27 apb@ryebread.com
28

29 **A NON-MANDATORY PRE-BID CONFERENCE** will be held at **10:00 AM** prevailing time, on
30 **Thursday, 09 January 2020** in the Main Lobby of the EVESHAM TOWNSHIP PUBLIC
31 WORKS BUILDING located at 100 Sharp Road; Marlton, New Jersey. Attendance at the Pre-Bid
32 Conference is encouraged but not mandatory. Bid documents will not be available at the pre-bid
33 conference.
34

35 Prime Bidder shall note that EVESHAM TOWNSHIP is scheduled to award this Project on or
36 about 04 February 2020 and that any long-lead shop drawings are required to be initiated
37 immediately after the Notice to Proceed is issued so that those items can be ordered as soon as
38 possible. Construction shall begin on or about 14 February 2020 and shall be substantially
39 completed on or before 30 June 2020.
40

41 Bids must be made upon the official Form of Bid and shall include Bid Security in the form of a
42 certified check, cashier's check, or by Bid Bond drawn to the order of the Owner in the amount of
43 not less than ten percent (10%) of the Base Bid but in no case in excess of \$20,000.00. The bid
44 shall also be accompanied by an executed Consent of Surety in accordance with N.J.S.A. 40A:11-
45 22, agreeing to furnish a Performance Bond and a Payment Bond, each in the stated principal
46 amount of one hundred percent (100%) of the contract amount, and a two-year Maintenance Bond
47 in the amount of ten percent (10%) of the contract amount.
48

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1 Contracts for work under these bids will obligate contractors and Subcontractors to (1) pay
2 Prevailing Wages in accordance with N.J.S.A. 34:11-56(a) et. seq., (2) comply with equal
3 opportunity laws in accordance with N.J.S.A. 10:5-31 et. seq., (3) comply with Affirmative Action
4 laws in accordance with N.J.A.C. 17:27 and comply with Exhibit B of the Department of the
5 Treasury, Guidelines for Administering EEO in Public Contracts), (4) provide ownership
6 disclosure information per N.J.S.A. 52:25-24.2, (5) comply with New Jersey Business Registration
7 laws in accordance with N.J.S.A. 52:32-44 and (6) comply with any and all successors,
8 amendments or additions thereto.

9
10 Registered Bidders must submit substitution requests or any questions concerning the project to the
11 Architect on Form 006001 BIDDER REQUEST FOR INFORMATION included in the Project
12 Manual no later than **1:00 PM Tuesday, 14 January 2020**. The Architect will not respond to
13 questions received by those other than Prime Bidders.

14
15 EVESHAM TOWNSHIP has the right to award the contracts within sixty (60) days of the bid
16 opening and reserves the right to reject any or all bids and to waive any non-material defects, as
17 may be permitted by law.

18
19 Directions to the Pre-Bid Conference and the Bid Opening can be obtained by calling:

20
21 Tom Kohl, Deputy Township Manager: (856) 983-2798

22
23 By Order of the EVESHAM TOWNSHIP.
24 Mary Lou Bergh, Township Clerk.

25
26
27 END OF SECTION 000100

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 SECTION 001000 - INSTRUCTIONS TO BIDDERS

2

3

4 PART 1 - GENERAL

5

6 Refer to Sections of Divisions 00 and 01 for additional information that may affect the preparation
7 of bids. These Sections contain information pertaining to:

8

9

Time, date and place for receipt of bids.

10

Time for completion.

11

Substitution of materials.

12

Alternate prices, allowances, unit prices.

13

Other conditions pertaining to the Work.

14

15 BIDDING DOCUMENTS

16

17 Bidding Documents consist of:

18

19 The Project Manual containing:

20

21 Table of Contents.

22

22 List of Drawings.

23

23 Instructions to Bidders.

24

24 Contract Forms.

25

25 Modified AIA General Conditions of the Contract.

26

26 Specifications as listed in the TABLE OF CONTENTS.

27

28 Drawings as listed in the PROJECT MANUAL.

29

30 Any Addenda as may be subsequently issued to Bidders of Record.

31

32 Bidding Documents will be available to Prime Contract Bidders as stated in the
33 ADVERTISEMENT. Sub-Contractors and vendors may obtain copies from registered Prime
34 Contract Bidders. All documents furnished to any person, under any condition, shall remain the
35 property of the Architect and shall not be reproduced or used on any other project without approval
36 of the Architect in writing.

37

38 BID UPDATES

39

40 Bidders should regularly visit the Architect's website at the link indicated in the Advertisement and
41 select the applicable project for relevant project information including, but not limited to, addenda,
42 prospective bidders, and budget.

43

44 SINGLE OVERALL BID

45

46 In accordance with Title 40A Local Public Contracts Law, the Contractor submitting a bid to
47 perform the work under a single contract shall furnish in writing at the time of Bid, the names of
48 persons or entities proposed as Prime subcontractors. In addition, submit evidence of performance
49 security of each Prime subcontractor simultaneously with the bid.

BUILDING-03 ADDITION & ALTERATIONS
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1 BID PREPARATION

2
3 Proposal for Contracts as listed in the Advertisement for Bids as hereinafter described, will be
4 received for the performance of the Project. The bids shall cover all cost of any nature, incident to
5 and growing out of the work. In explanation but not in limitation thereof, these costs shall include
6 the cost of all work, labor, materials, equipment, transportation and cost of all else necessary to
7 perform and complete the Project in the manner and within the time required, all incidental
8 expenses in connection therewith, all costs on account of loss by damage or destruction of the
9 Project, to the extent that the cost of such loss is not recovered from insurance carried by the Owner
10 and the Contractor, and any additional expenses for unforeseen difficulties encountered, for
11 settlement of damages and for replacement of defective work and materials.

12
13 Prior to submitting a bid, Bidder shall examine and thoroughly familiarize himself/herself with all
14 of the following:

15
16 The Bidding Documents.

17 All applicable laws, ordinances, rules and regulations which may affect the Work.

18 The Site and all existing Work, buildings, utilities, roads, etc.

19 That the bidding Contractor can secure the necessary labor and equipment and that the
20 materials specified herein may be obtained in the quantities and in the time required by the
21 Contract.

22 All other conditions that may affect the Work.

23
24 Drawings and Specifications have been prepared on the basis of surveys and inspections of the Site
25 and are intended to present an essentially accurate indication of the physical conditions at the Site.
26 This shall not relieve the Bidder of the necessity of fully informing himself/herself as to the existing
27 conditions at the site. The failure or omission of any Bidder to receive or examine any form
28 instrument or document or to visit the site and acquaint themselves with conditions there existing,
29 shall not relieve any Bidder from obligation with respect to his bid.

30
31 If a Bidder finds discrepancies or ambiguities in, or omissions from the Documents, or if he/she is
32 in doubt as to their meaning, he/she shall notify the Architect in writing by the time, date and
33 method indicated in the ADVERTISEMENT. Failure to report any discrepancies, ambiguities,
34 and/or omissions in the manner herein prescribed constitutes a waiver of any claim for additional
35 compensation arising out of any and all additional work and/or materials necessary as a result of
36 the Architect's decision(s) clarifying said discrepancies, ambiguities and/or omissions. If properly
37 notified, the Architect will, if necessary, send written Addenda to all Bidders of Record. Direct
38 inquiries to:

39
40 Angelo P. Butera, AIA, LEED AP
41 REGAN YOUNG ENGLAND BUTERA, PC
42 456 High Street
43 Mt. Holly, NJ 08060
44 (609) 265-2652/0300 Fax
45 apb@ryebread.com
46

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 PRE-BID CONFERENCE

2
3 A pre-bid conference will be conducted by the Architect as stated in the ADVERTISEMENT. It is
4 the responsibility of the bidders to obtain directions to the place of the meeting and for attendance.

5
6 VISITATION OF EXISTING SITE

7
8 Visit to the existing site may be arranged by calling:

9
10 Tom Kohl, Deputy Township Manager: (856) 983-2798.

11
12 REQUESTS FOR INFORMATION

13
14 Registered Prime Bidders requesting information or clarification to bidding or construction related
15 issues shall fax the request to the Architect at (609) 265-0333 by the date and time indicated in the
16 ADVERTISEMENT. Bidders must submit form 006001, BIDDER REQUEST FOR
17 INFORMATION included in this Project Manual. Only requests submitted on the BIDDERS
18 REQUEST FOR INFORMATION form will be answered.

19
20 Request must clearly identify the drawing number and/or specification section in question. All
21 requests must be received in writing no later than the date & time indicated in the
22 ADVERTISEMENT.

23
24 ORAL EXPLANATIONS

25
26 Oral explanations or instructions given before Award of Contract will not be binding. All
27 authorized interpretations will be made by written Addenda.

28
29 ADDENDA

30
31 Written Addenda making changes or corrections to the Bidding Documents after they have been
32 issued will be sent, if required, to Bidders of Record. Such Addenda shall take precedence over
33 that portion of the Bidding Documents concerned and shall become a part of the Contract
34 Documents. The failure to provide the additional notice to bidders shall not serve to void the award
35 of the Contract(s). In accordance with N.J.S.A 40A:11-23, Addenda shall be issued to reach
36 registered Bidders at least 7 days prior, Saturdays, Sundays and holidays excepted, to the Date for
37 Receipt of Bids. It is the responsibility of the Bidder to ascertain that he/she has received all issued
38 Addenda, prior to submission of the bid.

39
40 Receipt of all Addenda shall be acknowledged by the Bidder on the FORM OF BID in the space
41 provided. Failure to acknowledge Addenda may be cause for rejection of the bid.

42
43 BUSINESS REGISTRATION OF PUBLIC CONTRACTORS

44
45 Pursuant to N.J.S.A.52:32-44, as set forth above, the bidder shall submit a copy of their Business
46 Registration Certificate as well as each of their subcontractors or suppliers anticipated to be used
47 in the fulfillment of the contract.

48
49 For the term of the contract, the contractor and each of its affiliates and a subcontractor and each of its

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1 affiliates [N.J.S.A. 52:32-44(g)(3) shall collect and remit to the Director, New Jersey Division of
2 Taxation, the use tax due pursuant to the Sales and Use Tax Act on all sales of tangible personal
3 property delivered into this State, regardless of whether the tangible personal property is intended for
4 a contract with a contracting agency.
5

6 A business organization that fails to provide a copy of a business registration as required pursuant to
7 section 1 of P.L.2001, c.134 (C.52:32-44 et al.) or subsection e. or f. of section 92 of P.L.1977, c.110
8 (C.5:12-92), or that provides false business registration information under the requirements of either
9 of those sections, shall be liable for a penalty of \$25 for each day of violation, not to exceed \$50,000
10 for each business registration copy not properly provided under a contract with a contracting agency.
11

12 OWNER'S RIGHT TO ADDITIONAL INVESTIGATION
13

14 The Owner may make such additional investigations as it deems necessary to determine the ability
15 of the Bidder to perform the work, and the Bidder shall furnish to the Owner all such information
16 and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid
17 if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that he is
18 properly qualified to carry out the obligations of the Contract and to complete the work
19 contemplated therein.
20

21 TIME FOR COMPLETION
22

23 Time for completion as indicated in the ADVERTISEMENT. Bidders attention is directed to
24 MODIFIED AIA GENERAL CONDITIONS, Paragraph 8.1.
25

26 BIDDER'S LEGAL NAME
27

28 The Bidders legal name, address and telephone number shall be stated in full on the FORM OF
29 BID. The Bid shall be signed in ink by a Principal duly authorized to bind the Bidder in contracts.
30

31 Bids by Partnerships shall indicate the full names of all partners and shall be signed in the
32 partnership name by one of the partners or by a duly authorized representative followed by the
33 designation of the person signing.
34

35 Bids by Corporations shall have the name of the corporation followed by the State of Incorporation
36 and the designation of the corporate officer authorized to bind the corporation in this matter.

37 In accordance with N.J.S.A. 52:25-24.2, no corporation, partnership, or limited liability company
38 shall be awarded any contract nor shall any agreement be entered into for the performance of any
39 work or the furnishing of any materials or supplies, the cost of which is to be paid with or out of
40 any public funds, by the State, or any county, municipality or school district, or any subsidiary or
41 agency of the State, or of any county, municipality or school district, or by any authority, board, or
42 commission which exercises governmental functions, unless prior to the receipt of the bid or
43 accompanying the bid, of said corporation, said partnership, or said limited liability company there
44 is submitted a statement setting forth the names and addresses of all stockholders in the corporation
45 who own 10 percent or more of its stock, of any class, or of all individual partners in the partnership
46 who own a 10 percent or greater interest therein, or of all members in the limited liability company
47 who own a 10 percent or greater interest therein, as the case may be. If one or more such stockholder
48 or partner or member is itself a corporation or partnership or limited liability company, the
49 stockholders holding 10 percent or more of that corporation's stock, or the individual partners

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1 owning 10 percent or greater interest in that partnership, or the members owning 10 percent or
2 greater interest in that limited liability company, as the case may be, shall also be listed. The
3 disclosure shall be continued until names and addresses of every noncorporate stockholder, and
4 individual partner, and member, exceeding the 10 percent ownership criteria established in this act,
5 has been listed.

6
7 DOCUMENTS ACCOMPANYING BID

8
9 Refer to Section 002000 - FORM OF BID for a list of all documents required to be submitted with
10 the bid along with the required number of copies.

11
12 Failure to provide all required documents and required number of copies may be cause for
13 disqualification and rejection of bid.

14
15 MAILED BID PROPOSALS

16
17 If a Bid is to be mailed, the bid envelope shall be enclosed in another opaque envelope stating
18 "MAILED BID PROPOSAL" and addressed to:

19
20 Mary Lou Bergh Township Clerk
21 EVESHAM TOWNSHIP
22 984 Tuckerton Road
23 Marlton, New Jersey 08053
24

25 Electronic (e-mail) submissions shall not be accepted.

26
27 The Bidder assumes full responsibility for appropriate delivery (via whatever means, including
28 mail) on or before the designated time and to the designated location. The Owner is not responsible
29 for any bids that fail to be delivered on or before the designated time, and to the designated location
30 specified by this ADVERTISEMENT, regardless of fault.

31
32 BID OPENING

33
34 Bids shall be received and opened at the designated time and location as stated in the
35 ADVERTISEMENT.

36
37 The award of the Contract(s) or rejection of all bids must be made within sixty (60) days of the bid
38 opening.

39
40 The execution of the Contract(s) shall be done within twenty-one (21) days of award of bid.

41
42 Award made to a Bidder whom is not a resident of the State of New Jersey is conditioned upon
43 Bidder designating a proper agent in the State on whom service can be made in the event of
44 litigation.

45
46 If the successful bidder is a corporation not organized under the laws of New Jersey, the award of
47 Contract and payment of consideration thereunder shall be conditioned upon Corporation promptly
48 filing a certificate of doing business in the State of New Jersey pursuant to the provisions of New
49 Jersey law.

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1 WITHDRAW OR MODIFICATION OF BID

2
3 No Bids may be withdrawn or modified after the time set for receipt of bids and for a period of 60
4 calendar days thereafter without consent of the Owner.

5
6 INFORMALITIES IN BID PROPOSALS

7
8 The Owner reserves the right to reject any or all bids, and to waive any bid requirements and/or
9 any non-material bid defects, where such rejection or waiver is in the best interests of the Owner,
10 and where such rejection or waiver is permitted by law.

11
12 FORM OF AGREEMENT

13
14 The Form of Agreement shall be the Owner's Standard Form of Agreement between Owner and
15 Contractor (Stipulated Sum).

16
17 AMERICAN GOODS

18
19 In accordance with N.J.S.A. 40A:11-18, only manufactured products of the United States, wherever
20 available, and where possible are to be used with this project.

21
22 EQUIVALENT PRODUCTS: The use of manufacturers' brand names, catalogue numbers and
23 similar proprietary identifying data in the Contract Documents are not intended to eliminate from
24 consideration products that are equivalent in quality, appearance and function to those specified.

25
26 BONDING

27
28 Bid Security: Each bid shall include bid security by certified check, cashier's check or bid bond
29 drawn to the Owner in an amount of not less than ten percent (10%) of the base bid but in
30 no case in excess of \$20,000.00.

31
32 Contract Bonds: The Bidder to whom the Contract has been awarded shall, within ten (10)
33 days of the date of the award, furnish and deliver a Performance Bond and Payment Bond,
34 equal to one hundred percent (100%) of the Contract amount. The Bidder(s) to whom the
35 Contract(s) has been awarded shall, prior to requesting Final Payment, furnish and deliver
36 a TWO (2) year Maintenance Bond, equal to ten percent (10%) of the Final Contract
37 Amount. If, at any time after execution and approval of a Contract and Performance-
38 Payment Bond required by Contract Documents, such Bond shall cease to be adequate
39 security for the Owner, the Contractor shall, within five days after notice to do so, furnish
40 a new or additional Bond, in form, sum and signed by such Sureties as shall be satisfactory
41 to the Owner. No further payment shall be deemed due nor shall any further payment be
42 made to the Contractor unless and until such new or additional Bond shall be furnished and
43 approved.

44
45 Consent of Surety: All bids shall be accompanied by an executed Consent of Surety in
46 accordance with 40A:11-22, agreeing to furnish the required Performance, Labor and
47 Material Payment Bond and Maintenance Bond.

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1 The Contractor shall obligate their Surety to make periodic inquiries of the Board at
2 reasonable times, to determine whether its Principal has performed or was performing the
3 Contract in accordance with all of its terms and conditions, particularly in relation to the
4 progress payments scheduled under said Contract with the Board.
5

6 Bidder shall provide proof of executed consent with his/her bid from an approved surety company
7 licensed to conduct business in the State of New Jersey agreeing to furnish the required
8 Maintenance Bond.
9

10 BOND AND PERMIT COSTS
11

12 The cost of all Bonds shall be paid for and obtained by the Contractor. Permits shall be coordinated
13 by and obtained by the Contractor. If the municipality requires a fee for the review and release of
14 construction permits, the Contractor shall pay all required fees and submit evidence of such to the
15 Owner for full reimbursement of direct costs without any markup.
16

17 NON-COLLUSION AFFIDAVIT. Pursuant to N.J.S.A. 52:34-15, each bidder shall submit with
18 his bid a Non-Collusion Affidavit in the form bound herein.
19

20 LAW AGAINST DISCRIMINATION
21

22 All contracts related to the project, whether between Owner and Contractor or Contractor and
23 Subcontractors, shall comply with the anti-discrimination provisions of N.J.S.A. 10:2-1 *et seq.*, the
24 New Jersey Law Against Discrimination, N.J.S.A 10:5-31 *et seq.*, N.J.A.C. 17:27, N.J.A.C. 6A:7-
25 1.8.
26

27 Pursuant to N.J.S.A. 10:2-1:
28

- 29 a. In the hiring of persons for the performance of work under this contract or any subcontract
30 hereunder, or for the procurement, manufacture, assembling or furnishing of any such
31 materials, equipment, supplies or services to be acquired under this contract, no contractor,
32 nor any person acting on behalf of such contractor or subcontractor, shall, by reason of
33 race, creed, color, national origin, ancestry, marital status, gender identity or expression,
34 affectional or sexual orientation or sex, discriminate against any person who is qualified
35 and available to perform the work to which the employment relates;
36
- 37 b. No contractor, subcontractor, nor any person on his behalf shall, in any manner,
38 discriminate against or intimidate any employee engaged in the performance of work under
39 this contract or any subcontract hereunder, or engaged in the procurement, manufacture,
40 assembling or furnishing of any such materials, equipment, supplies or services to be
41 acquired under such contract, on account of race, creed, color, national origin, ancestry,
42 marital status, gender identity or expression, affectional or sexual orientation or sex;
43
- 44 c. There may be deducted from the amount payable to the contractor by the contracting public
45 agency, under this contract, a penalty of \$50.00 for each person for each calendar day
46 during which such person is discriminated against or intimidated in violation of the
47 provisions of the contract; and
48

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- 1 d. This contract may be canceled or terminated by the contracting public agency, and all
2 money due or to become due hereunder may be forfeited, for any violation of this section
3 of the contract occurring after notice to the contractor from the contracting public agency
4 of any prior violation of this section of the contract.
5

6 NEW JERSEY PREVAILING WAGE RATE: Bidders are required to comply with the State
7 prevailing wage rate for public works, Chapter 150 Laws of 1963, N.J.S.A. 34:11-56.25 et seq.
8

9 PUBLIC WORKS CONTRACTOR REGISTRATION: In accordance with the "Public Works
10 Contractor Registration Act" (N.J.S.A. 34:11-56.51) each bidder is required to be registered
11 pursuant to the Act at the time of the bid and in accordance with N.J.S.A. 34:11-56.55 shall submit
12 their certificate prior to awarding of the contract.
13

14 In accordance with N.J.S.A. 34:11-56.27, (a) bidders shall pay workers not less than the prevailing
15 wage rate; (b) in the event it is found that any worker, employed by the contractor or any
16 subcontractor covered by said contract, has been paid a rate of wages less than the prevailing wage
17 required to be paid by such contract, the Owner may terminate the contractor's or subcontractor's
18 right to proceed with the work, or such part of the work as to which there has been a failure to pay
19 required wages and to prosecute the work to completion or otherwise.
20

21 Pursuant to N.J.S.A. 34:11-56.51, a contractor must be registered pursuant to the Public Works
22 Contractor Registration Act in order to bid on a contract. All listed subcontractors must also be
23 registered at the time the bid is submitted.
24

25 PAY TO PLAY: Bidders are advised to comply with the disclosure requirements of Chapter 271.
26

27 RECORDS RETENTION
28

29 In accordance with N.J.A.C. 17:44-2.2 Bidders shall maintain all documentation related to
30 products, transactions or services under this contract for a period of five years from the date of final
31 payment. Such records shall be made available to the New Jersey Office of the State Comptroller
32 upon request.
33

34
35 PARTS 2 AND 3 (Not Applicable)
36

37
38 END OF SECTION 001000

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 SECTION 002000 - FORM OF BID

2

3 TO:

4 Mary Lou Bergh, Township Clerk

5 EVESHAM TOWNSHIP

6 984 Tuckerton Road

7 Marlton, New Jersey 08053

8

9 FROM:

10 _____ (NAME)

11 _____ (ADDRESS)

12 _____ (CITY, STATE, ZIP)

13 _____ (PHONE/FAX NUMBER)

14 _____ (EMAIL ADDRESS)

15

16 Operating as an individual, a partnership, corporation under the laws of the State of New Jersey

17

18

19 _____
(Input words that apply)

20

21 PROPOSAL FOR: RYEBREAD PROJECT NO. 5596E

22

23 BUILDING-03 ADDITION & ALTERATIONS

24 100 Sharp Road

25 Evesham Township

26 Marlton, New Jersey 08053

27

28 This proposal is based on Specifications and Drawings dated 11 December 2019 and prepared by:

29

30 ARCHITECTURAL, STRUCTURAL, MECHANICAL & ELECTRICAL

31 REGAN YOUNG ENGLAND BUTERA, PC

32 456 High Street

33 Mt. Holly, New Jersey 08060

34

35 **BASE BID:** Pursuant to and in compliance with your request for proposals for the above named
36 project and contract, and having examined the site where the work is to be located, and having
37 become familiar with local conditions as they may, in any way, affect the cost and/or execution of
38 the work, and having carefully examined the specifications and drawings named above, the
39 Undersigned Bidder hereby agrees to provide all plant, labor, materials, supplies equipment,
40 transportation and other facilities necessary and proper for, or incidental to, or required for
41 complete and satisfactory execution of work. For a one-time lump sum bid, which shall include the
42 allowance(s) and unit price total(s) listed below:

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45

_____ (\$_____)

ALLOWANCES below, which include labor, materials, taxes, insurance, overhead, profit and other costs in connection therewith, shall be included in the Base-Bid proposal for the quantities listed. Allowances listed shall include all incidental items required to render the allowance fully complete and operational whether specifically referenced or not. Any unused allowances shall be deducted from the contract value at the stated amount.

Contingency Allowance No. 01: Include in the Base-Bid a contingency allowance amount of \$36,000 for additional work as directed by the Architect and approved by the Owner.

METAL BUILDING MANUFACTURER: Bidders shall indicate the name of their proposed manufacturer:

LONG LEAD ITEMS: Bidders shall complete the procurement activities for each item listed below indicating the approximate delivery time, which shall include, but is not limited to, purchasing, fabrication, and delivery from the time of approved shop drawings.

Metal Building time: _____ weeks.

HVAC equipment delivery time: _____ weeks.

NO MATERIAL ADVERSE CHANGE IN QUALIFICATION: The undersigned bidder hereby certifies that there has been no material adverse change in the qualification information last submitted to the New Jersey Department of the Treasury pursuant to NJSA 18A: 18A-28.

HOLD HARMLESS AGREEMENT: By submitting and executing a bid proposal the Bidder, if corporation, also responsible individual of corporation signing individually agrees to indemnify and hold harmless the Owner, Architect, and their agents and employees, from all and against all claims, damages, losses, and expenses, including reasonable attorney's fees in case it shall be necessary to file an action, arising out of bodily injury, illness or death, or for property damage, by the Contractor negligent, reckless or intentional acts or omission or that of a Subcontractor, or that of anyone employed by them or for whose acts contractor or subcontractor may be liable. This indemnification and agreement shall apply in all instances whether Owner, Architect is made a party to the action by third-party in-pleading or is made party to a collateral action arising, in whole or in part, from any of the issues emanating from the original cause of action or claim.

TIME OF COMPLETION: The Undersigned Bidder agrees to complete the work as indicated in the Advertisement, (Bidder is referred to AIA GENERAL CONDITIONS, Par. 8.1).

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1 ATTACHED TO THIS PROPOSAL are **ONE** original hard copy and **ONE** PDF copy
2 on USB Flash Drive of all the following documents (Fill in all blank spaces, alternate
3 bids and unit prices. Failure to comply may be cause for rejection of bid.).
4

5 DOCUMENTS ACCOMPANYING BID
6

7 Failure to provide all required documents and required number of copies may be cause for
8 disqualification and rejection of bid.
9

10 **Bidder shall correlate the following required documents in the order**
11 **listed below & place an "X" in the box next to each item provided.**
12

13 In bid envelope:

- 14 1. Form of Bid.
- 15 2. Business Registration of Public Contractors from the New Jersey Division of
16 Taxation.
- 17 3. Bid Security in the form of a Bid Bond, certified check or cashier's check in the
18 amount of not less than 10% of the Base Bid, or \$500.00 whichever is more, but in
19 any event not more than \$20,000.00. The Bid Security must be in a form consistent
20 with the statutory requirements of the State of New Jersey.
- 21 4. Consent of Surety: Section 002800, or similar.
- 22 5. Surety Company & Agency Information: Section 002801.
- 23 6. Affirmative Action Evidence: Section 002850.
- 24 7. Ownership Certificate: Section 002900 or similar if Bidder is a partnership or a
25 corporation.
- 26 8. Non-Collusion Affidavit: Section 002950.
- 27 9. Form of certification stating that bidder is not currently debarred, suspended or
28 disqualified under N.J.A.C. section 19:32-1.8. Section 002970.
- 29 10. Disclosure of Investment Activities in Iran. Section 002980.
30

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1 11. Contractor's Sworn Contractor Certification. Section 004580; and

2

3

Credentials A, B & C listed below must be stapled to this certification.

4

5 A. "Contractor Registration Certificate" from the New Jersey
6 Department of Labor in accordance with the "Public Works
7 Contractor Registration Act."

8 B. "Certificate of Authority" issued by the Department of Treasury.

9 C. Contractor or trade license.

10 12. Prevailing Wages Certification Form: Section 004595.

11 13. Form of certification stating that bidder has the ability to perform the contract.
12 Section 005310.

13 14. Background Questionnaire. Section 005320.

14 15. W-9.

15 16. List of Prime Subcontractors: Section 005290.

16 For each Prime subcontractor listed, attached a copy of:

17 A. Business Registration of Public Contractors from the New Jersey
18 Division of Taxation.

19 B. Contractor's Sworn Contractor Certification. Section 004580; and

20

21 **Credentials 1, 2 & 3 listed below must be stapled to this certification.**

22

23 1. "Contractor Registration Certificate" from the New Jersey
24 Department of Labor in accordance with the "Public Works
25 Contractor Registration Act."

26 2. "Certificate of Authority" issued by the Department of
27 Treasury.

28 3. Contractor or trade license.

29 17. **ONE (1) original hard copy and ONE (1) PDF copy on USB Flash**
30 **Drive of all required documents.**

31

32 IF AWARDED CONTRACT, the Undersigned Bidder agrees to execute the AGREEMENT and
33 to furnish the required Performance and Payment Bonds and evidence of required insurance as soon
34 as practicable after Notice of Acceptance of Proposal or in any event not later than 10 calendar
35 days after receipt of such notification.

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1 If the Undersigned Bidder fails to execute AGREEMENT and furnish required bond and evidence
2 of insurance, the Bid Security accompanying this Proposal will be forfeited to the Owner as
3 liquidated damages for the delay and loss caused to the Owner by reason of such failure by the
4 Undersigned Bidder.

5
6 THE UNDERSIGNED BIDDER HAS COMPLIED with all requirements concerning licensing
7 and with all Local, State and Federal laws. No legal requirement has been violated in making this
8 Proposal nor will be violated in the execution of the Work if this Proposal is accepted.

9
10 IT IS UNDERSTOOD that the right is reserved by the Owner to reject any and all bids and to waive
11 all informalities in connection therewith as may be permitted by law.

12
13 AWARD OF CONTRACT(S)

14
15 A Single Prime Contract shall be awarded for all of the work and materials required to complete
16 the project, unless all bids are rejected, to the lowest responsible bidder based on the total amount
17 of the Base Bid and Alternates (if any), accepted by the Owner.

18
19 IT IS AGREED THAT THIS BID MAY NOT BE WITHDRAWN for a period of 60 days after the
20 actual date of receipt of bids.

21
22 RECEIPT OF THE FOLLOWING ADDENDA is acknowledged by the Undersigned bidder (List
23 by number and date):

24

<u>ADDENDUM NO.</u>	<u>DATED</u>	<u>ADDENDUM NO.</u>	<u>DATED</u>
_____	_____	_____	_____
_____	_____	_____	_____

25
26 Respectfully submitted this _____ day of _____ 20_____.

27
28 _____(Name of Firm)

29
30 By: _____ L.S.
31 Print

32 *(SEAL IF BIDDER
33 IS A CORPORATION)

34 _____
35 Signature

36 _____
37 Title

38 _____
39 Federal Employment Identification Number (FEIN)

40
41
42 END OF SECTION 002000

DOCUMENT 002600 - PROCUREMENT SUBSTITUTION PROCEDURES

1.1 DEFINITIONS

- A. Procurement Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Procurement and Contracting Documents, submitted prior to receipt of bids.
- B. Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Contract Documents, submitted following Contract award. See Section 012500 "Substitution Procedures" for conditions under which Substitution requests will be considered following Contract award.

1.2 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.3 PROCUREMENT SUBSTITUTIONS

- A. Procurement Substitutions, General: By submitting a bid, the Bidder represents that its bid is based on materials and equipment described in the Procurement and Contracting Documents, including Addenda. Bidders are encouraged to request approval of qualifying substitute materials and equipment when the Specifications Sections list materials and equipment by product or manufacturer name.
- B. Procurement Substitution Requests will be received and considered by Owner when the following conditions are satisfied, as determined by Architect; otherwise requests will be returned without action:
 - 1. Extensive revisions to the Contract Documents are not required.
 - 2. Proposed changes are in keeping with the general intent of the Contract Documents, including the level of quality of the Work represented by the requirements therein.
 - 3. The request is fully documented and properly submitted.

1.4 SUBMITTALS

- A. Procurement Substitution Request: Submit to Architect. Procurement Substitution Request must be made in writing by prime contract Bidder only in compliance with the following requirements:
 - 1. Requests for substitution of materials and equipment will be considered if received no later than the date and time for questions indicated in the ADVERTISEMENT.

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2. Submittal Format: Submit one pdf copy of each written Procurement Substitution Request, using form 012501 Substitution Request form of the Project Manual.
 - a. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specifications Sections and drawing numbers.
 - b. Provide complete documentation on both the product specified and the proposed substitute, including the following information as appropriate:
 - 1) Point-by-point comparison of specified and proposed substitute product data, fabrication drawings, and installation procedures.
 - 2) Copies of current, independent third-party test data of salient product or system characteristics.
 - 3) Samples where applicable or when requested by Architect.
 - 4) Detailed comparison of significant qualities of the proposed substitute with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - 5) Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - 6) Research reports, where applicable, evidencing compliance with building code in effect for Project, from New Jersey Uniform Construction Code.
 - c. Bidder shall provide certification by manufacturer that the substitute proposed is equal to or superior to that required by the Procurement and Contracting Documents, and that its in-place performance will be equal to or superior to the product or equipment specified in the application indicated.
 - d. Bidder, in submitting the Procurement Substitution Request, waives the right to additional payment or an extension of Contract Time due to any failure of the substitute to perform as represented in the Procurement Substitution Request.

B. Architect's Action:

1. Architect may request additional information or documentation necessary for evaluation of the Procurement Substitution Request. Architect will notify all bidders of acceptance of the proposed substitute by means of an Addendum to the Procurement and Contracting Documents.

- C. Architect's approval of a substitute during bidding does not relieve Contractor of the responsibility to submit required shop drawings and to comply with all other requirements of the Contract Documents.

END OF DOCUMENT 002600

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 SECTION 002800 - CONSENT OF SURETY

2
3

4 TO: EVESHAM TOWNSHIP (Owner).

5

6 herein called the Surety hereby agrees that if the Contract

7 for the construction of the _____ Addition and Alterations

8 _____ and approved Allowances, Alternates & Unit Prices (if any)

9 at the _____ Evesham Township Public Works Building-03

10 be awarded to _____

11 herein called the Bidder, the Surety will provide the Bidder

12 with such form and sums that are required by said Contract.

13 Signed, sealed and dated this _____ day of 20_____.

14

15 _____
(Surety)

16

17 _____
(Bond No.)

18 (SEAL)

19

20

21

22 Attest: _____ By: _____
23 (Attorney in fact)

24

25 **CONSENT OF SURETY MUST BE SIGNED BY AN AUTHORIZED AGENT OR**
26 **REPRESENTATIVE OF A SURETY COMPANY AND NOT BY THE INDIVIDUAL OR**
27 **COMPANY SUBMITTING THE BID.**

28

29

30 END OF SECTION 002800

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 SECTION 002801 - SURETY COMPANY & AGENCY INFORMATION

2

3

4 PRIME BIDDER:

5 _____ (NAME)

6 _____ (ADDRESS)

7 _____ (CITY, STATE, ZIP)

8 _____ (TELEPHONE NUMBER)

9 _____ (E-MAIL ADDRESS)

10

11 In accordance with the bidding requirements, the bidder hereby acknowledges the following
12 responsible surety data for this project:

13

14

15 SURETY COMPANY

16 _____ (NAME)

17 _____ (ADDRESS)

18 _____ (CITY, STATE, ZIP)

19 _____ (TELEPHONE NUMBER)

20 _____ (FACSIMILE NUMBER)

21 _____ (E-MAIL ADDRESS)

22

23

24 SURETY AGENCY

25 _____ (NAME)

26 _____ (ADDRESS)

27 _____ (CITY, STATE, ZIP)

28 _____ (TELEPHONE NUMBER)

29 _____ (FACSIMILE NUMBER)

30 _____ (E-MAIL ADDRESS)

31

32 END OF SECTION 002801

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 SECTION 002850 – AFFIRMATIVE ACTION EVIDENCE FOR CONSTRUCTION PROJECTS

2
3
4 Bidder shall complete this form and submit it with his/her bid proposal.

5
6 Pursuant to N.J.S.A.10:5-31 et. seq. and N.J.A.C.17:27, all successful bidders are required to
7 submit evidence of appropriate Affirmative Action compliance to the Division of Public Contracts
8 Equal Employment Opportunity Compliance (hereafter referred to as “Division”) and the awarding
9 Public Agency. During a review, the Division representatives will review the Public Agency files
10 to determine whether the Affirmative Action evidence has been submitted by the vendor/contractor.
11 Specifically, each vendor/contractor shall submit to the Public Agency, prior to execution of Public
12 Agency contract the following documents within seven (7) days after receipt of the notification of
13 intent to award the contract or receipt of the contract, whichever is sooner:

14
15 The construction contractors shall complete and submit an Initial Project Workforce Report Form
16 AA-201 upon notification of award. Proper completion and submission of this report shall
17 constitute evidence of the contractor’s compliance with the regulations. Failure to submit this form
18 may result in the contract being terminated. The contractor also agrees to submit a copy of the
19 Monthly Project Workforce Report Form AA-202 once a month thereafter for the duration of the
20 contract to the Division and to the public agency compliance officer.

21
22 After notification of award, but prior to signing a construction contract the EEO/AA evidence must
23 be submitted.

24
25 Upon award of a construction contract, it shall be the responsibility of the Public Agency to provide
26 the contractor with Form AA-201, Initial Project Workforce Report. The Division does not supply
27 this form to the contractor.

28
29 Failure on the Contractor’s part to comply with their requirements of N.J.S.A. 10:5-31 et. seq. and
30 N.J.A.C. 17:27 that result in sanctions and/or penalties against the Public Agency from the Division
31 agree to pay all costs and expenses incurred by the Public Agency.

32
33 The undersigned contractor certifies that he/she is aware of the commitment to comply with the
34 requirements of N.J.S.A. 10:5-31 et. seq. and N.J.A.C. 17:27 and agrees to furnish the required
35 documentation pursuant to the Law.

36
37 Signed, sealed and dated this _____ day of 20_____.

38 _____ (Company)

39 _____ (Signature)

40
41 _____ (Title)
42

EXHIBIT B

MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE

N.J.S.A. 10:5-31 et seq. (P.L.1975, c.127)

N.J.A.C.17:27 - 1.1 et seq.

CONSTRUCTION CONTRACTS

During the performance of this contract, the contractor agrees as follows:

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such equal employment opportunity shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor will send to each labor union, with which it has a collective bargaining agreement, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer, pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

When hiring or scheduling workers in each construction trade, the contractor or subcontractor agrees to make good faith efforts to employ minority and women workers in each construction trade consistent with the targeted employment goal prescribed by N.J.A.C. 17:27-7.2; provided, however, that the Dept. of LWD, Construction EEO Monitoring Program, may, in its discretion, exempt a contractor or subcontractor from compliance with the good faith procedures prescribed by the following provisions, A, B, and C, as long as the Dept. of LWD, Construction EEO Monitoring Program is satisfied that the contractor or subcontractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Dept. of LWD, Construction EEO Monitoring Program, that its percentage of active "card carrying" members who

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 are minority and women workers is equal to or greater than the targeted employment goal
2 established in accordance with N.J.A.C. 17:27-7.2. The contractor or subcontractor agrees that a
3 good faith effort shall include compliance with the following procedures:
4

5 (A) If the contractor or subcontractor has a referral agreement or arrangement with a union for a
6 construction trade, the contractor or subcontractor shall, within three business days of the
7 contract award, seek assurances from the union that it will cooperate with the contractor or
8 subcontractor as it fulfills its affirmative action obligations under this contract and in
9 accordance with the rules promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et. seq.,
10 as supplemented and amended from time to time and the Americans with Disabilities Act. If
11 the contractor or subcontractor is unable to obtain said assurances from the construction trade
12 union at least five business days prior to the commencement of construction work, the
13 contractor or subcontractor agrees to afford equal employment opportunities minority and
14 women workers directly, consistent with this chapter. If the contractor's or subcontractor's
15 prior experience with a construction trade union, regardless of whether the union has provided
16 said assurances, indicates a significant possibility that the trade union will not refer sufficient
17 minority and women workers consistent with affording equal employment opportunities as
18 specified in this chapter, the contractor or subcontractor agrees to be prepared to provide such
19 opportunities to minority and women workers directly, consistent with this chapter, by
20 complying with the hiring or scheduling procedures prescribed under (B) below; and the
21 contractor or subcontractor further agrees to take said action immediately if it determines that
22 the union is not referring minority and women workers consistent with the equal employment
23 opportunity goals set forth in this chapter.
24

25 (B) If good faith efforts to meet targeted employment goals have not or cannot be met for each
26 construction trade by adhering to the procedures of (A) above, or if the contractor does not
27 have a referral agreement or arrangement with a union for a construction trade, the contractor
28 or subcontractor agrees to take the following actions:
29

- 30 (1) To notify the public agency compliance officer, the Dept. of LWD, Construction EEO
31 Monitoring Program, and minority and women referral organizations listed by the Division
32 pursuant to N.J.A.C. 17:27-5.3, of its workforce needs, and request referral of minority and
33 women workers;
- 34 (2) To notify any minority and women workers who have been listed with it as awaiting
35 available vacancies;
- 36 (3) Prior to commencement of work, to request that the local construction trade union refer
37 minority and women workers to fill job openings, provided the contractor or subcontractor
38 has a referral agreement or arrangement with a union for the construction trade;
- 39 (4) To leave standing requests for additional referral to minority and women workers with the
40 local construction trade union, provided the contractor or subcontractor has a referral
41 agreement or arrangement with a union for the construction trade, the State Training and
42 Employment Service and other approved referral sources in the area;
- 43 (5) If it is necessary to lay off some of the workers in a given trade on the construction site,
44 layoffs shall be conducted in compliance with the equal employment opportunity and
45 nondiscrimination standards set forth in this regulation, as well as with applicable Federal
46 and State court decisions;
- 47 (6) To adhere to the following procedure when minority and women workers apply or are
48 referred to the contractor or subcontractor:
49

BUILDING-03 ADDITION & ALTERATIONS
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REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

- 1 (i) The contractor or subcontractor shall interview the referred minority or women
2 worker.
- 3 (ii) If said individuals have never previously received any document or certification
4 signifying a level of qualification lower than that required in order to perform the
5 work of the construction trade, the contractor or subcontractor shall in good faith
6 determine the qualifications of such individuals. The contractor or subcontractor
7 shall hire or schedule those individuals who satisfy appropriate qualification
8 standards in conformity with the equal employment opportunity and non-
9 discrimination principles set forth in this chapter. However, a contractor or
10 subcontractor shall determine that the individual at least possesses the requisite
11 skills, and experience recognized by a union, apprentice program or a referral
12 agency, provided the referral agency is acceptable to the Dept. of LWD, Construction
13 EEO Monitoring Program. If necessary, the contractor or subcontractor shall hire or
14 schedule minority and women workers who qualify as trainees pursuant to these
15 rules. All of the requirements, however, are limited by the provisions of (C) below.
- 16 (iii) The name of any interested women or minority individual shall be maintained on a
17 waiting list and shall be considered for employment as described in (i) above,
18 whenever vacancies occur. At the request of the Dept. of LWD, Construction EEO
19 Monitoring Program, the contractor or subcontractor shall provide evidence of its
20 good faith efforts to employ women and minorities from the list to fill vacancies.
- 21 (iv) If, for any reason, said contractor or subcontractor determines that a minority
22 individual or a woman is not qualified or if the individual qualifies as an advanced
23 trainee or apprentice, the contractor or subcontractor shall inform the individual in
24 writing of the reasons for the determination, maintain a copy of the determination in
25 its files, and send a copy to the public agency compliance officer and to the Dept. of
26 LWD, Construction EEO Monitoring Program.
- 27
- 28 (7) To keep a complete and accurate record of all requests made for the referral of workers in
29 any trade covered by the contract, on forms made available by the Dept. of LWD,
30 Construction EEO Monitoring Program and submitted promptly to the Dept. of LWD,
31 Construction EEO Monitoring Program upon request.
- 32
- 33 (C) The contractor or subcontractor agrees that nothing contained in (B) above shall preclude the
34 contractor or subcontractor from complying with the union hiring hall or apprenticeship
35 policies in any applicable collective bargaining agreement or union hiring hall arrangement,
36 and, where required by custom or agreement, it shall send journeymen and trainees to the union
37 for referral, or to the apprenticeship program for admission, pursuant to such agreement or
38 arrangement. However, where the practices of a union or apprenticeship program will result in
39 the exclusion of minorities and women or the failure to refer minorities and women consistent
40 with the targeted county employment goal, the contractor or subcontractor shall consider for
41 employment persons referred pursuant to (B) above without regard to such agreement or
42 arrangement; provided further, however, that the contractor or subcontractor shall not be
43 required to employ women and minority advanced trainees and trainees in numbers which
44 result in the employment of advanced trainees and trainees as a percentage of the total
45 workforce for the construction trade, which percentage significantly exceeds the apprentice to
46 journey worker ratio specified in the applicable collective bargaining agreement, or in the
47 absence of a collective bargaining agreement, exceeds the ratio established by practice in the
48 area for said construction trade. Also, the contractor or subcontractor agrees that, in

BUILDING-03 ADDITION & ALTERATIONS
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1 implementing the procedures of (B) above, it shall, where applicable, employ minority and
2 women workers residing within the geographical jurisdiction of the union.
3

4 After notification of award, but prior to signing a construction contract, the contractor shall submit
5 to the public agency compliance officer and the Dept. of LWD, Construction EEO Monitoring
6 Program an initial project workforce report (Form AA-201) electronically provided to the public
7 agency by the Dept. of LWD, Construction EEO Monitoring Program, through its website, for
8 distribution to and completion by the contractor, in accordance with N.J.A.C. 17:27-7. The
9 contractor also agrees to submit a copy of the Monthly Project Workforce Report once a month
10 thereafter for the duration of this contract to the Dept. of LWD, Construction EEO Monitoring
11 Program, and to the public agency compliance officer.
12

13 The contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is
14 necessary, for on-the-job and/or off-the job programs for outreach and training of minorities and
15 women.
16

17 (D) The contractor and its subcontractors shall furnish such reports or other documents to the Dept.
18 of LWD, Construction EEO Monitoring Program as may be requested by the Dept. of LWD,
19 Construction EEO Monitoring Program from time to time in order to carry out the purposes of
20 these regulations, and public agencies shall furnish such information as may be requested by
21 the Dept. of LWD, Construction EEO Monitoring Program for conducting a compliance
22 investigation pursuant to N.J.A.C. 17:27-1.1 et seq.
23

24 (Revised: January 2016)
25
26

27 END OF SECTION 002850

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 SECTION 002900 - STATEMENT OF OWNERSHIP DISCLOSURE

2 PART 1 - GENERAL

3 1.1 ORGANIZATION INFORMATION

4 A. Provide the following as per N.J.S.A. 52:25-24.2 (P.L. 1977, c.33, as amended by P.L.
5 2016, c.43).

6 B. This statement shall be completed, certified to, and included with all bid and proposal
7 submissions. Failure to submit the required information is cause for automatic rejection
8 of the bid or proposal.

9 Organization Name: _____

10 Organization Address: _____

11 _____

12 C. Type of Business Organization

13 1. Check the box that represents the type of business organization:

14 Sole Proprietorship (skip PARTS 2 and 3, execute certification in PART 4)

15 Non-Profit Corporation (skip PARTS 2 and 3, execute certification in PART
16 4)

17 For-Profit Corporation (any type) Limited Liability Company (LLC)

18 Partnership Limited Partnership Limited Liability
19 Partnership (LLP)

20 Other (be specific): _____

21

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 PART 2 - STOCKHOLDER INFORMATION

2 2.1 LIST OF CORPORATION STOCKHOLDERS

3 A. Percentage Amount

4 1. Check the box that represents the corporation's stockholder percentages:

5 The list below contains the names and addresses of all stockholders in the
6 corporation who own 10 percent or more of its stock, of any class, or of all
7 individual partners in the partnership who own a 10 percent or greater interest
8 therein, or of all members in the limited liability company who own a 10
9 percent or greater interest therein, as the case may be. **(COMPLETE THE
10 LIST BELOW IN THIS SECTION)**

11 (Please attach additional sheets if more space is needed):

Name of Individual or Business Entity	Home Address (for Individuals) or Business Address

12 No one stockholder in the corporation owns 10 percent or more of its stock,
13 of any class, or no individual partner in the partnership owns a 10 percent or
14 greater interest therein, or no member in the limited liability company owns
15 a 10 percent or greater interest therein, as the case may be. **(SKIP TO PART
16 4)**
17

BUILDING-03 ADDITION & ALTERATIONS
 EVESHAM TOWNSHIP
 REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 PART 3 - STOCKHOLDER DISCLOSURE

2 3.1 DISCLOSURE OF 10% OR GREATER OWNERSHIP

3 A. Disclosure of 10% or greater ownership in the stockholders, partners or llc members listed
 4 in PART 2.

5 1. If a bidder has a direct or indirect parent entity which is publicly traded, and any
 6 person holds a 10 percent or greater beneficial interest in the publicly traded parent
 7 entity as of the last annual federal Security and Exchange Commission (SEC) or
 8 foreign equivalent filing, ownership disclosure can be met by providing links to
 9 the website(s) containing the last annual filing(s) with the federal Securities and
 10 Exchange Commission (or foreign equivalent) that contain the name and address
 11 of each person holding a 10% or greater beneficial interest in the publicly traded
 12 parent entity, along with the relevant page numbers of the filing(s) that contain the
 13 information on each such person.

14 (Please attach additional sheets if more space is needed):

Website (URL) containing the last annual SEC (or foreign equivalent) filing	Page #'s

15 2. List the names and addresses of each stockholder, partner or member owning a 10
 16 percent or greater interest in any corresponding corporation, partnership and/or
 17 limited liability company (LLC) listed in PART 2 other than for any publicly
 18 traded parent entities referenced above. The disclosure shall be continued until
 19 names and addresses of every non-corporate stockholder, and individual partner,
 20 and member exceeding the 10 percent ownership criteria established pursuant to
 21 N.J.S.A. 52:25-24.2 has been listed.

22 (Please attach additional sheets if more space is needed):

Stockholder/Partner/Member & Corresponding Entity Listed In PART 2	Home Address (for Individuals) or Business Address

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 PART 4 - CERTIFICATION

2 4.1 I, being duly sworn upon my oath, hereby represent that the foregoing information and any
3 attachments thereto to the best of my knowledge are true and complete.

4 A. I acknowledge: that I am authorized to execute this certification on behalf of the
5 bidder/proposer; that the EVESHAM TOWNSHIP is relying on the information contained
6 herein and that I am under a continuing obligation from the date of this certification through
7 the completion of any contracts with the EVESHAM TOWNSHIP to notify them in writing
8 of any changes to the information contained herein;

9 B. that I am aware that it is a criminal offense to make a false statement or misrepresentation
10 in this certification, and if I do so, I am subject to criminal prosecution under the law and
11 that it will constitute a material breach of my agreement(s) with the, permitting the
12 EVESHAM TOWNSHIP to declare any contract(s) resulting from this certification void
13 and unenforceable.

14 Full Name (Print): _____

15 Title: _____

16 Signature: _____

17 Date: _____

18

19

20

21 END OF SECTION 002900

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 SECTION 002950 - NON-COLLUSION AFFIDAVIT

2
3
4 STATE OF NEW JERSEY

5 County of Burlington, Owner: EVESHAM TOWNSHIP

6 I, _____ of _____ (Municipality)

7 in the County of _____ and the State of _____
8 of full age, being duly sworn according to law on my oath depose and say that:

9 I am _____ of the firm of _____,
10 the bidder making the Bid for the above named Project, and that I have executed the said Bid with
11 full authority so to do; that said Bidder has not, directly or indirectly, entered into any agreement,
12 participated in any collusion, or otherwise taken any action in restraint of free, competitive bidding
13 in connection with the above named Project; and that all statements contained in said Bid and in
14 this affidavit are true and correct, and made with full knowledge that the above named Owner relies
15 upon the truth of the statements contained in said Bid and in the statements contained in this
16 affidavit in awarding contract for the said Project.

17
18 I further warrant that no person or selling agency has been employed or retained to solicit or secure
19 such contract upon an agreement or understanding for a commission, percentage, brokerage or
20 contingent fee, except bona fide employees or bona fide established commercial or selling agencies
21 maintained by

22 _____ (Bidder)

23 By: _____ (Type name)

24
25
26
27
28
29
30
31
32 Subscribed and sworn to before me this

33 _____ day of _____, 20_____.

34 State of _____

35 Notary Public: _____

36 My commission expires _____, 20_____.

37
38
39 END OF SECTION 002950

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 SECTION 002970 - CERTIFICATION REGARDING THE DEBARMENT, SUSPENSION,
2 DISQUALIFICATION, INELIGIBILITY AND VOLUNTARY EXCLUSION
3

4 I am _____ of the firm of _____
5 (title) (name of your organization)

6 _____
7 (state the address of your organization)

8 CHOOSE ONE OF THE FOLLOWING

9 () A. I hereby certify on behalf of _____ that
10 (name of your organization)

11
12 neither it nor its principals are included on any State or Federal Government's
13 List of Debarred, Suspended, or Disqualified Bidders as a result of action taken
14 by any State or Federal Agency.

15
16 () B. I am unable to certify to any of the statements set forth in this certification. I have
17 attached an explanation to this form.

18 _____ (SEAL)
19 (Signature)

20 _____
21 (Type Name & Title)

22 _____
23 (Date)
24

25 The Township may not enter into a Contract for work with any person, company, or firm that is on
26 the State Department of Labor and Workforce Development, Prevailing Wage Debarment List, or
27 State of New Jersey Consolidated Debarment Report (eee.state.nj.us/treasury/debarred), or the
28 Federal System for award –SAM.gov. By certifying this Form, the Contractor confirms neither it
29 nor its principals are included on any State or Federal Government's List of Debarred, Suspended,
30 or Disqualified Bidders as a result of action taken by any State or Federal Agency.

31
32 Subscribed and sworn to before me this

33 _____ day of _____, 20_____.

34 State of _____

35 Notary Public: _____

36 My commission expires _____, 20_____.

37
38 END OF SECTION 002970

**STATE OF NEW JERSEY -- DIVISION OF PURCHASE AND PROPERTY
DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN**

Quote Number: _____ **Bidder/Offeror:** _____

PART 1: CERTIFICATION
BIDDERS MUST COMPLETE PART 1 BY CHECKING EITHER BOX.
FAILURE TO CHECK ONE OF THE BOXES WILL RENDER THE PROPOSAL NON-RESPONSIVE.

Pursuant to Public Law 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete the certification below to attest, under penalty of perjury, that neither the person or entity, nor any of its parents, subsidiaries, or affiliates, is identified on the Department of Treasury's Chapter 25 list as a person or entity engaging in investment activities in Iran. The Chapter 25 list is found on the Division's website at <http://www.state.nj.us/treasury/purchase/pdf/Chapter25List.pdf>. Bidders **must** review this list prior to completing the below certification. **Failure to complete the certification will render a bidder's proposal non-responsive.** If the Director finds a person or entity to be in violation of law, s/he shall take action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party

PLEASE CHECK THE APPROPRIATE BOX:

I certify, pursuant to Public Law 2012, c. 25, that neither the bidder listed above nor any of the bidder's parents, subsidiaries, or affiliates is listed on the N.J. Department of the Treasury's list of entities determined to be engaged in prohibited activities in Iran pursuant to P.L. 2012, c. 25 ("Chapter 25 List"). I further certify that I am the person listed above, or I am an officer or representative of the entity listed above and am authorized to make this certification on its behalf. **I will skip Part 2 and sign and complete the Certification below.**

OR

I am unable to certify as above because the bidder and/or one or more of its parents, subsidiaries, or affiliates is listed on the Department's Chapter 25 list. **I will provide a detailed, accurate and precise description of the activities in Part 2 below and sign and complete the Certification below.** Failure to provide such will result in the proposal being rendered as non-responsive and appropriate penalties, fines and/or sanctions will be assessed as provided by law.

PART 2: PLEASE PROVIDE FURTHER INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN

You must provide a detailed, accurate and precise description of the activities of the bidding person/entity, or one of its parents, subsidiaries or affiliates, engaging in the investment activities in Iran outlined above by completing the boxes below.

EACH BOX WILL PROMPT YOU TO PROVIDE INFORMATION RELATIVE TO THE ABOVE QUESTIONS. PLEASE PROVIDE THOROUGH ANSWERS TO EACH QUESTION. IF YOU NEED TO MAKE ADDITIONAL ENTRIES, CLICK THE "ADD AN ADDITIONAL ACTIVITIES ENTRY" BUTTON.

Name _____	Relationship to Bidder/Offeror _____
Description of Activities _____	

Duration of Engagement _____	Anticipated Cessation Date _____
Bidder/Offeror Contact Name _____	Contact Phone Number _____

ADD AN ADDITIONAL ACTIVITIES ENTRY

Certification: I, being duly sworn upon my oath, hereby represent that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I acknowledge: that I am authorized to execute this certification on behalf of the bidder; that the State of New Jersey is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the completion of any contracts with the State to notify the State in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the State, permitting the State to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print): _____ **Signature:** _____

Do Not Enter PIN as a Signature

Title: _____ **Date:** _____

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 SECTION 004580 - SWORN CONTRACTOR CERTIFICATION REQUIREMENTS

2
3 Bidder and their listed Subcontractors shall submit this Sworn Contractor Certification regarding
4 qualifications and credentials.

5
6 By signing and submitting this Sworn Contractor Certification the principal Owner or Officer of
7 the Company or Corporation certifies that the firm has the following qualifications and credentials:
8

9 **Credentials 1, 2 & 3 listed below must be stapled to this certification.**

10
11 (1) A current, valid certificate of registration issued pursuant to “The Public Works Contractor
12 Registration Act”, P.L. 1999, c.238 (C.34:11-56.48 et seq), N.J.S.A. 34:11-56.48 et seq., a copy
13 of which is attached hereto;
14

15 (2) A current, valid “Certificate of Authority to perform work in New Jersey” issued by the
16 Department of Treasury, a copy of which is attached hereto;
17

18 (3) A current, valid contractor or trade license required under applicable New Jersey Law for any
19 trade or specialty area in which the firm seeks to perform work, a copy of which is attached
20 hereto;
21

22 (4) During the term of construction of the school facilities project, I as principal Owner or Officer
23 of the company or corporation, as contractor, will have in place a suitable quality control and quality
24 insurance program and an appropriate safety and health plan.
25

26 As the principal Owner or Officer of the company or corporation, I certify that, at the time of
27 bidding this project, the amount of the bid proposal and the value of all this firm’s outstanding
28 incomplete contracts does not exceed the firm’s existing aggregate rating limit.
29

30
31 Company: _____
32

33
34 _____
35 (Signature)
36

37
38 _____
39 (Print Name)
40

41 Date: _____
42
43
44
45

46
47 Corporate Seal
48

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 Sworn and subscribed before me this
2
3 _____ day of _____ 20__.
4
5 NOTARY PUBLIC _____
6 (Signature)
7
8 _____
9 (Print Name)
10 SEAL
11
12 Notary Public - State of _____
13
14 My Commission Expires _____
15
16
17 END SECTION 004580

SECTION 004595 – PREVAILING WAGES CERTIFICATION FORM

It is the determination of Evesham Township that this is a public works project that in total will exceed \$16,263.00 (sixteen thousand two hundred and sixty three dollars), therefore prevailing wages rules and regulations apply as promulgated by the New Jersey Prevailing Wage Act and in conformance with N.J.S.A. 34:11-56:25.

CERTIFICATION

1. I certify that our company understands that this project of Evesham Township requires prevailing wages to be paid in full accordance with the law.
2. I further certify that all subcontractors named in this bid understand that this project requires the subcontractor to pay prevailing wages in full accordance with the law.

NOTIFICATION OF VIOLATIONS – New Jersey Department of Labor

Has the bidder or any person having an “interest” with the bidder, been notified by the New Jersey Department of Labor by notice issued pursuant to N.J.S.A. 34:11-56:37 that he/she has been in violation for failure to pay prevailing wages as required by the New Jersey Prevailing Wage Act within the last five (5) years?

* Yes

No

*If yes, please attach a signed document explaining any/or all administrative proceedings with the NJDOL within the last five (5) years.

Please include any pending administrative proceedings with the NJDOL, if any.

Name of Company: _____

Authorized Agent: _____

Authorized Signature: _____

END OF SECTION 004595

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 SECTION 005290 - LIST OF PRIME SUBCONTRACTORS

2
3
4 BIDDER:

5
6 _____ (NAME)

7
8 _____ (ADDRESS)

9
10 _____ (CITY, STATE, ZIP)

11
12 _____ (PHONE/FAX NUMBER)

13
14 In accordance with N.J.S.A. 40A:11-16, where the Bid requires and/or permits more than one of
15 the specified branches of work to be under one contract, the bidder shall list below the applicable
16 name or names of their Prime Subcontractors. If none are required, the Bidder shall input "NONE"
17 on the list of those Subcontractors. **Subject to compliance with the Public Bidding Laws, if the**
18 **Overall Bidder elects to undertake one or more of the subcontracts listed with their own**
19 **forces, they MUST indicate their intentions on this form.**

20
21 LIST OF PRIME SUBCONTRACTORS

22
23 PLUMBING (C030)

24 _____ (NAME)

25 _____ (ADDRESS)

26 _____ (CITY, STATE, ZIP)

27 _____ (PHONE/FAX NUMBER)

28 _____ (LICENSE NUMBER)

29 _____ (DOLLAR VALUE)

30
31
32 HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION (HVACr) (C032)

33 _____ (NAME)

34 _____ (ADDRESS)

35 _____ (CITY, STATE, ZIP)

36 _____ (PHONE/FAX NUMBER)

37 _____ (LICENSE NUMBER)

38 _____ (DOLLAR VALUE)

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 ELECTRICAL WORK (C047), including any electrical power plant, tele-data, fire alarm, or
2 security

3 _____ (NAME)

4 _____ (ADDRESS)

5 _____ (CITY, STATE, ZIP)

6 _____ (PHONE/FAX NUMBER)

7 _____ (LICENSE NUMBER)

8 _____ (DOLLAR VALUE)

9

10

11 STRUCTURAL STEEL AND ORNAMENTAL IRON WORK (C029)

12 _____ (NAME)

13 _____ (ADDRESS)

14 _____ (CITY, STATE, ZIP)

15 _____ (PHONE/FAX NUMBER)

16 _____ (LICENSE NUMBER)

17 _____ (DOLLAR VALUE)

18

19

20 GENERAL CONSTRUCTION (C008 or C009), which shall include all other work goods and
21 services required for the completion of the project.

22 _____ (NAME)

23 _____ (ADDRESS)

24 _____ (CITY, STATE, ZIP)

25 _____ (PHONE/FAX NUMBER)

26 _____ (LICENSE NUMBER)

27 _____ (DOLLAR VALUE)

28

29

30 END OF SECTION 005290

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 SECTION 005310 - CERTIFICATE OF BIDDER SHOWING ABILITY TO PERFORM
2 CONTRACT

3
4
5 STATE OF NEW JERSEY

6 County of Burlington, Owner: EVESHAM TOWNSHIP

7 I, _____ of _____ (Municipality)

8 in the County of _____ and the State of _____
9 of full age, being duly sworn according to law on my oath depose and say that:

- 10 1. I am a(n) owner, partner, shareholder or officer of the company set forth below and am
11 duly authorized to execute this affidavit on its behalf.

12 (Check appropriate Statement(s))

13 _____ I own, lease or control the necessary equipment required by the plans,
14 specifications, addenda and advertisements under which bids are asked for.

15
16 _____ I do not own, lease or control the necessary equipment required by the plans,
17 specifications, addenda and advertisements under which bids are asked for.
18 If the bidder is not the actual owner or leasee of all the necessary equipment,
19 provide the source from which the equipment will be obtained. (Attach
20 additional sheets as required).

21
22 _____
23 _____
24 _____
25 _____

26 (Attached certification from the owner or person in control of the equipment definitely granting to
27 the bidder the control of the equipment required during such time as may be necessary for the
28 completion of that portion of the contract for which it is necessary).

29 _____
30 _____
31 _____
32 _____
33 (Insert Name, Phone No., Fax No., and Address of Contractor)

34 _____
35 (Insert Name & Title of Affiant)
36

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 Subscribed and sworn to before me this

2 _____ day of _____, 20_____.

3 State of _____

4 Notary Public: _____

5 My commission expires _____, 20_____.

6

7

8 END OF SECTION 005310

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 SECTION 005320 - BACKGROUND QUESTIONNAIRE

2

3

4 Date of Organization of Company: _____

5 Name and address of officers: _____

6 President: _____

7 Vice President: _____

8 Secretary: _____

9 Treasurer: _____

10 EXPERIENCE

11 1. How many years has your organization been in business as a general contractor under
12 your present business name? _____.

13 2. How many years experience in this type of construction work has your organization had?
14 _____.

15 3. What are the latest projects (within the last five years) your organization has completed?
16 (Attach additional pages if necessary).

17	<u>Contract Amount</u>	<u>Date Work Completed</u>	<u>For Whom</u>
18	A. \$ _____	_____	_____
19	B. \$ _____	_____	_____
20	C. \$ _____	_____	_____
21	D. \$ _____	_____	_____
22	E. \$ _____	_____	_____

23 Provide Names, Addresses and Telephone Numbers of Reference for items listed above:

24 A. _____

25 B. _____

26 C. _____

27 D. _____

28 E. _____

29 4. Have you ever failed to complete any work awarded to you (within the last ten years)? ___

30 If so, where and why? _____

31

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 5. Have you or bas any officer of your organization ever been an officer or partner of some
2 other contracting organization that failed to complete any work (within the last ten
3 years)? _____

4 If so, state the name of individual, position and the name of the other organization.
5 _____
6 _____

7 Did this other contracting organization ever fail to complete any work awarded it (within
8 the last ten years)? _____

9 If so, where and why? _____

10 6. Give list of uncompleted contracts at present held by you:

	<u>Name of Contract</u>	<u>Contracting Agency</u>	<u>Amount</u>
12	A. _____	_____	\$ _____
13	B. _____	_____	\$ _____
14	C. _____	_____	\$ _____
15	D. _____	_____	\$ _____
16	E. _____	_____	\$ _____

17
18 7. State approximately the largest amount of work you have done in any one year (within
19 the last five years)of a similar nature to the work being bid on.
20 _____
21 _____
22 _____
23 _____
24 _____

25
26 8. List the equipment available for the performance of work under the proposed contract
27 (attach additional sheets if necessary).
28 _____
29 _____
30 _____
31 _____
32 _____
33 _____
34 _____
35 _____
36 _____
37 _____
38 _____
39 _____

40
41 END OF SECTION 005320

SECTION 006000 - PROJECT FORMS

1.1 FORM OF AGREEMENT AND GENERAL CONDITIONS

- A. The following form of Owner/Contractor Agreement and form of the General Conditions shall be used for Project:
1. AIA Document A101-2017 "Standard Form of Agreement between Owner and Contractor Where the Basis of Payment is a Stipulated Sum."
 - a. The General Conditions as modified by the Owner for Project are AIA Document A201-2017 "General Conditions of the Contract for Construction."
 2. The General Conditions as modified by the Owner are included in the Project Manual.
 3. Form for Requests for Information (RFIs): Section 006001 – Bidder Request for Information is to be used during the Bidding Phase and is included in the Project Manual.
 4. Notice to Proceed: Section 007100 – Notice to Proceed is included in the Project Manual.
 5. Form of Agreement shall be the Owner's Standard Form of Agreement between Owner and Contractor (Stipulated Sum).

1.2 ADMINISTRATIVE FORMS

- A. Administrative Forms: Additional administrative forms are specified in Division 01 General Requirements.
- B. Copies of AIA standard forms may be obtained from the American Institute of Architects; www.aiacontractdocsaicontracts.org; (800) 942-7732.
- C. State of New Jersey WORKFORCE REPORTS may be obtained from the New Jersey Division of Public Contracts Equal Employment Opportunity Compliance at www.state.nj.us/treasury/contract compliance.
- D. Preconstruction Forms:
1. Form of Performance Bond and Labor and Material Bond: Bonding Company's standard form complying with the statutory requirements of the State of New Jersey. AIA Document A312-2010 "Performance Bond and Payment Bond."
 2. Form of Certificate of Insurance: Insurance Company's standard form complying with the statutory requirements of the State of New Jersey. AIA Document G715-2017 "Supplemental Attachment for ACORD Certificate of Insurance 25."
 3. Tracking Report: Initial Project Workforce Report - Building Construction (NJAAO Form AA-201).
- E. Information and Modification Forms:

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1. Form for Requests for Information (RFIs): Section 013100 – Contractor Request for Information is to be used during the Construction Phase and is included in the Project Manual.
2. Form for Requesting Substitutions: Section 012501 – Substitution Request is included in the Project Manual.
3. Form for Submitting Submittals: Section 013300 – Submittal Transmittal Form is included in the Project Manual.
4. Change Order Form: AIA Document G701-2017 "Change Order."
5. Prime Contractor Change Order Request Forms: Sections 012610 & 012610.1 - Prime Contractor COR Summary & Worksheet.
6. Subcontractor Change Order Request Forms: Sections 012620 & 012620.1 - Subcontractor COR Summary & Worksheet.
7. Form of Architect's Memorandum for Minor Changes in the Work: AIA Document G710-2017 "Architect's Supplemental Instructions."
8. Form of Change Directive: AIA Document G714-2017 "Construction Change Directive."

F. Payment Forms:

1. Schedule of Values Form: AIA Document G703-1992 "Continuation Sheet."
2. Payment Application: AIA Document G702-1992/703-1992 "Application and Certificate for Payment and Continuation Sheet."
3. Payroll Verification: Section 012910 – Payroll Verification Affidavit is included in the Project Manual.
4. Partial Release: Section 012911 – Partial Release of Liens is included in the Project Manual.
5. Stored Materials: Section 012920 – Bill of Sale/Certification for Stored Materials is included in the Project Manual.
6. Monthly Tracking Reports: Monthly Workforce Tracking - Building Construction (Form AA-202).

G. Close Out Forms:

1. Substantial Completion: AIA Document G704-2017, "Certificate of Substantial Completion."
2. Payment Application: AIA Document G702-1992/703-1992 "Application and Certificate for Payment and Continuation Sheet."
3. Form of Contractor's Affidavit: AIA Document G706-1994 "Contractor's Affidavit of Payment of Debts and Claims."
4. Form of Affidavit of Release of Liens: AIA Document G706A-1994 "Contractor's Affidavit of Payment of Release of Liens."
5. Form of Consent of Surety: AIA Document G707-1994 "Consent of Surety to Final Payment."
6. Maintenance Bond: Section 017721 - Maintenance Bond is included in the Project Manual.
7. Subcontractor Guaranty: Section 017722 – Subcontractor Guaranty is included in the Project Manual.

END OF SECTION 006000

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 SECTION 006001 - BIDDER REQUEST FOR INFORMATION

2

3 FROM: _____

4 REQUEST DATE: _____ EMAIL _____

5 BIDDER'S RFI NUMBER: _____

6

7 TO:

8 Angelo P. Butera, AIA, LEED AP

9 REGAN YOUNG ENGLAND BUTERA, PC

10 Fax: (609) 265-0333

Email: apb@ryebread.com

11

12

13 REFERENCES (List all applicable drawings & specifications):

14

15

16

17

18 PLEASE RESPOND TO THE FOLLOWING:

19

20

21

22

23

24

25

26

27

28

29

30

31 RESPONSE:

32

33

34

35

36

37

38

39

40

41 DATE OF RESPONSE: _____ BY: _____

42 DISTRIBUTION: _____

43

44 END OF SECTION 006001

BUILDING-03 ADDITION & ALTERATIONS
EVESHAM TOWNSHIP
REGAN YOUNG ENGLAND BUTERA, PC PROJECT #5596E

1 SECTION 007100 - NOTICE TO PROCEED

2

3

4 TO: _____ DATE: _____

5 _____ PROJECT: _____

6 _____

7 _____

8

9 You are hereby notified to commence WORK in accordance with

10 the Agreement dated _____, on or

11 before _____, and you are

12 to complete the WORK within _____ consecutive calendar days

13 thereafter. The date of completion of all WORK is

14 therefore _____.

15 _____

16 (OWNER)

17 By: _____

18 Title: _____

19

20 ACCEPTANCE OF NOTICE

21

22 Receipt of the above NOTICE TO PROCEED

23 is hereby acknowledged by:

24 _____,

25 (CONTRACTOR)

26 this the _____, 20_____

27 _____

28 By: _____

29 Title: _____

30 Employer ID #: _____

31

32

33 END OF SECTION 007100



AIA[®] Document A201[™] – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

5596E Public Works Bldg-03
100 Sharp Road
Marlton, NJ 08053

THE OWNER:

(Name, legal status and address)

EVESHAM TOWNSHIP
984 Tuckerton Road; Marlton, New Jersey 08060

THE ARCHITECT:

(Name, legal status and address)

REGAN YOUNG ENGLAND BUTERA, Professional Corporation
456 High Street
Mt. Holly, NJ 08060

TABLE OF ARTICLES

- 1 GENERAL PROVISIONS
- 2 OWNER
- 3 CONTRACTOR
- 4 ARCHITECT
- 5 SUBCONTRACTORS
- 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
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- 11 INSURANCE AND BONDS
- 12 UNCOVERING AND CORRECTION OF WORK
- 13 MISCELLANEOUS PROVISIONS

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503[™], Guide for Supplementary Conditions.

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User Notes:

(1768715877)

- 14 TERMINATION OR SUSPENSION OF THE CONTRACT
- 15 CLAIMS AND DISPUTES
- 16 NEW JERSEY REQUIREMENTS FOR PUBLIC WORK

The document is a contract for the design and construction of a building. It contains the terms and conditions of the contract, including the scope of work, the schedule, and the payment terms. The document is a legal instrument and should be read carefully.

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User Notes:

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. The Contract Documents shall also include the Bidding Requirements, including, but not limited to Advertisement or Invitation to Bid, Instructions to Bidders, the Contractor's Bid Proposal Form and other bidding forms, Addenda or portions of the Addenda relating to any Bidding Documents. The Contract Documents shall apply to all Contractors for the Project and each Contractor is responsible for the content of all.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.2.1 The Contractor acknowledges and warrants that it has closely examined all of the Contract Documents, that they are suitable and sufficient to enable the Contractor to complete the Work in a timely manner for the Contract Sum, and that they include all Work, whether or not shown or described, which reasonably may be inferred to be required or useful for the completion of the Work in full compliance with all applicable codes, laws, ordinances and regulations and that questions regarding the bid documents and any interpretation(s) regarding same have been asked by the Contractor, in the form and manner required in the instructions to bidders.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.3.1 The Work shall include the obligation of the Contractor to visit the site of the Project before submitting a bid.

Such site visit shall be for the purpose of familiarizing the Contractor with the conditions as they exist and the character of the operations to be carried on under the Contract Documents, including all existing site conditions, access to the site, physical characteristics of the site and surrounding areas.

§ 1.1.3.2 Nothing in these General Conditions shall be interpreted as imposing on either the Owner or Architect, or their respective agents, employees, officers, directors or consultants, any duty, obligation or authority with respect to any items that are not intended to be incorporated into the completed project, including but not limited to shoring, scaffolding, hoists, temporary weatherproofing, or any temporary facility or temporary activity, since these are the sole responsibility of the Contractor.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.5.1 The Drawings are diagrammatical and show the general arrangement and extent of the Work; exact locations and arrangements of parts shall be determined as the Work progresses and shall be subject to the Architect's approval.

- .1 The right is reserved by the Architect to make any reasonable change in location of equipment, ductwork, and piping prior to roughing in without involving additional expense to the Owner.

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- .2 Contractor shall coordinate his Work with the Work of others and shall be responsible for the coordination work, so that interference between mechanical, electrical and other work and architectural and structural work does not occur.
- .3 Contractor shall furnish and install supports, hangers, offsets, bends, turns, and the like in connection with this Work to avoid interference with work of other Contractors, to conceal Work where required, and to secure necessary clearance and access for operation and maintenance without involving additional expense to the Owner.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

(Paragraph deleted)

§ 1.2.1.1 The general character of the detail work is shown on the drawings, but minor modifications may be made in large-scale details. Where the word "similar" occurs on the drawings it shall be used in its general sense and not as meaning identical, and all details shall be worked out in relation to their location and their connection to other parts of the work.

- .1 Where on any drawings a portion of the work is drawn out and the remainder is indicated in outline, the parts drawn out shall apply also to other like portions of the work.
- .2 Where detail is indicated by starting only, such detail shall be continued throughout the courses or parts in which it occurs and shall also apply to all other similar parts in the work unless otherwise indicated.
- .3 In case of differences between small and large-scale drawings, the larger scale drawings shall take precedence. Dimensions given shall take precedence over scale measurements.
- .4 Any discrepancies or questions as to the application of, and interpretations related to 1.2.1.1, shall be referred to the Architect for adjustment before any work affected thereby has been performed.

§ 1.2.1.2 During the course of the work, should any ambiguities or discrepancies be found in the Specifications or on the Drawings; or should there be found any discrepancies between the Drawings and Specifications to which the Contractor has failed to call attention before submitting his bid, then the Architect will interpret the intent of the Drawings and Specifications; and the Contractor hereby agrees to abide by the Architect's interpretation and to carry out the work in accordance with the decision of the Architect.

§ 1.2.1.3 It is expressly stipulated that neither the Drawings nor the Specifications shall take precedence over the other, and it is further stipulated that the Architect may interpret or construe the Drawings and Specifications so as to secure in all cases the result most consistent with the needs and requirements of the Owner. In the event of such ambiguity or discrepancy subject to any Architect's interpretation, the Contractor shall comply with the more stringent requirement, and supply the better quality or greater quantity of work.

§ 1.2.1.4 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or

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unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.2.1 The various materials and products specified in the specifications by name or description are given to establish a standard of quality and of cost for bid purposes. It is not the intent to limit the acceptance to any one material or product specified, but rather to name or describe it as the absolute minimum standard that is desired and acceptable, all determinations as to equality of a proposed product or material shall be at the discretion of the Architect and/or the Owner.

- .1 A material or product of lesser quality will not be acceptable.
- .2 Where "Basis of Design" products or manufacturer's names are used, whether or not followed by the words "or approved equal," they shall be subject to approved equals and authorized only by the Architect and/or the Owner.

§ 1.2.2.2 Substitutions lowering performance, quality, method of assembly or installation, or in general not in keeping with details and specifications or the requirements of the Owner, will not be permitted. Refer to substitution procedure indicated elsewhere in the Contract Documents.

§ 1.2.2.3 It is understood when a bid for any product or material is submitted, the bidder is aware of specified requirements and all materials or products within his bid are equal or better than such specified items.

§ 1.2.2.4 In addition to the Specifications, it shall be understood that details on Drawings shall become part of the Specification in determining the required "standard of quality."

§ 1.2.2.5 If a conflict occurs between Drawing details and Specifications, bidder during bidding process and/or Contractor shall bring such conflicts to the attention of the Architect in accordance with applicable requirements indicated elsewhere in other sections of Contract Documents.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity, the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.4.1 Whenever in the Contract Documents an item of work is referred to in the singular number, such reference shall apply to as many such items as are required to complete the work.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely

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and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use the Electronic Indemnification Form provided by the Architect to establish the protocols for the development, use, transmission, and exchange of digital data.

(Paragraphs deleted)

§ 1.9 EXECUTION OF CONTRACT DOCUMENTS

§ 1.9.1 Execution of the Contract by the Contractor is a representation that said Contract Documents are full and complete, are sufficient to have enabled the Contractor to determine the cost of the Work therein to enter into the Contract and that the Contract Documents are sufficient to enable it to construct the Work outlined therein, and otherwise to fulfill all its obligations hereunder, including, but not limited to, Contractor's obligation to construct the Work for an amount not in excess of the Contract Sum on or before the date(s) of Substantial Completion established in the Agreement. The Contractor further acknowledges and declares that it has visited and examined the site, examined all physical, legal, and other conditions affecting the Work and is fully familiar with all of the conditions thereon and thereunder affecting the same. In connection therewith, Contractor specifically represents and warrants to Owner that it has, by careful examination, satisfied itself as to: (1) the nature, location and character of the Project and the site, including, without limitation, the surface and subsurface conditions of the site and all structures and obstructions thereon and thereunder, both natural and man-made, and all surface and subsurface water conditions of the site and the surrounding area; (2) the nature, location, and character of the general area in which the Project is located, including without limitation, its climatic conditions, available labor supply and labor costs, and available equipment supply and equipment costs; and (3) the quality and quantity of all materials, supplies, tools, equipment, labor, approvals, and professional services necessary to complete the Work in the manner and within the cost and time frame required by the Contract Documents. In connection with the foregoing, and having carefully examined all Contract Documents, as aforesaid, and having visited the site, the Contractor acknowledges and declares that it has no knowledge of any discrepancies, omissions, ambiguities, or conflicts in said Contract Documents and that if it becomes aware of any such discrepancies, omissions, ambiguities, or conflicts, it will promptly notify Owner and Architect of such fact.

§ 1.9.2 The Contract Documents include all items necessary for the proper execution and completion of the Work by the Contractor. The Work shall consist of all items specifically included in the Contract Documents as well as all additional items of work which are reasonable inferable from that which is specified in order to complete the Work in accordance with the Contract Documents. The Contract Documents are complementary, and what is required by any one Contract Document shall be as binding as if required by all. Any differences between the requirements of the Drawings and the Specifications or any differences noted within the Drawings themselves or within the Specifications themselves have been referred to the Owner and Architect by Contractor prior to the submission of bids and have been clarified by an Addendum issued to all bidders.

§ 1.9.2.1 If any such differences or conflicts were not called to the Owner's and Architect's attention prior to submission of bids, the Architect shall decide which of the conflicting requirements will govern based upon the most stringent of the requirements, and, subject to the approval of the Owner, the Contractor shall perform the Work at no additional cost and/or time to the Owner in accordance with the Architect's decision. Work not covered in the Contract

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Documents will not be required unless it is consistent therewith and is reasonable inferable therefrom as being necessary to produce the intended results.

§ 1.9.2.2 The term "reasonably inferable" includes work necessary to "provide" work indicated or specified, as defined in section: Definitions and Standards; that is: furnish and install, complete, in place and ready for use.

§ 1.9.2.3 Details referenced to portions of the Work shall apply to other like portions of the Work not otherwise detailed.

§ 1.9.2.4 The Contractor shall request, from the Architect's interpretation of apparent discrepancies, conflicts, or omissions in the Specifications and Drawings. Subcontractors shall forward such requests through the Contractor. Such requests, and the Architect's interpretation, shall be in written form; other forms of communications shall be used to expedite resolution of concerns, but will not be binding.

§ 1.9.3 Explanatory notes shall take precedence over conflicting drawn note indications. Large-scale drawings shall take precedence over small-scale drawings. Figured dimensions shall take precedence over scaled measurements. Should contradictions be found, the Architect shall determine which indication is correct.

§ 1.9.4 Where it is required in the specifications that materials, products, processes, equipment, or the like be installed or applied in accordance with manufacturers' instructions, directions, or specifications, or words to this effect, it shall be construed to mean that said application or installation shall be in strict accordance with printed material concerned for use under conditions similar to those at the job site.

§ 1.9.5 Any material specified by reference to the number, symbol, or title of a Commercial Standard, Federal Specification, ASTM Specification, trade association standard, or other similar standards, shall comply with the requirements in the latest revision thereof and any amendments or supplements thereto in effect one month prior to the date on which bids are opened and read, except as limited to type, class, or grade, or modified in such reference. The standards referred to, except as modified in the specifications, shall have full force and effect as though printed in the specifications.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

(Paragraphs deleted)

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Architect" means the Architect or the Architect's authorized representative.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work. The furnishing of these surveys and the legal description of the site shall not relieve the Contractor from its

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duties under the Contract Documents. Neither Owner nor the Architect shall be required to furnish Contractor with any information concerning subsurface characteristics or conditions of the areas where the Work is to be performed. When the Owner or Architect has made investigations of subsurface characteristics or conditions of the areas where the Work is to be performed, such investigations, if any, were made solely for the purposes of Owner's study and Architect's design. Neither such investigations nor the records thereof are a part of the Contract between Owner and Contractor. To the extent such investigations or the records thereof are made available to the Contractor by the Owner or Architect, such information is furnished solely for the convenience of Contractor. Neither Owner nor Architect assumes any responsibility whatsoever in respect of the sufficiency or accuracy of the investigations thus made, the records thereof, or of the interpretations set forth therein or made by the Owner or Architect in its use thereof, and there is no warranty or guaranty, either express or implied, that the conditions indicated by such investigations or records thereof are representative of those existing throughout the areas where the Work is to be performed, or any part thereof, or that unforeseen developments may not occur, or that materials other than or in proportions different from those indicated may not be encountered. The Contractor shall undertake such further investigations and studies as may be necessary or useful to determine subsurface characteristics and conditions. In connection with the foregoing, Contractor shall be solely responsible for locating (and shall locate prior to performing any Work) all utility lines, telephone company lines and cables, sewer lines, water pipes, gas lines, electrical lines, including, without limitation, all buried pipelines and buried telephone cables and shall perform the Work in such a manner so as to avoid damaging any such lines, cables, pipes, and pipelines.

(Paragraphs deleted)

§ 2.3.4.1 After award of Contract and for construction purposes, designated Contractors will be furnished with printed signed and sealed Drawings and Specifications free of charge for filing with public bodies.

- .1 Additional copies of Drawings and Specifications will be furnished upon receipt of the amount indicated in the Advertisement. Subcontractors and vendors shall obtain copies of the Drawings and Specifications through the Contractor from his/her allotment.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, or fails or refuses to provide a sufficient amount of properly supervised and coordinated labor, materials, or equipment so as to be able to complete the Work within the Contract Time or fails to remove and discharge (within ten days) any lien filed upon Owner's property by anyone claiming by, through or under Contractor, or disregards the instructions of Architect or Owner when based on the requirements of the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor and/or their Surety shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The term "Contractor" shall mean the respective Prime Contract person or entity identified as such in the Owner Contractor Agreement, for each respective Prime Construction Contract, as responsible for the supervisory control over allocation, coordination of all Subcontractors or trades, performance and

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completion of all portions of the Work, including cooperation with those doing portions of the Work under Separate Contract with the Owner.

§ 3.1.1.2 The term "Contractor" shall mean and apply with equal force to each respective Prime Contractor and all other Contractors having a direct Contract with the Owner, or with each respective Contractor or other Prime Contractor for other branches of the Work, or his authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.1.4 Regularly scheduled job meetings shall be held at a location and time convenient to the Contractor, Owner's representatives and the Architect. The Contractor shall attend such meetings or be represented by a person with knowledge of the Project and with the authority to speak for and make decisions for the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

- .1 If the Contractor requires clarification of the intent of the Contract Documents after award, the Contractor shall be responsible to issue a typewritten Request for Information (RFI) to the Architect utilizing the Architect's sample form via acceptable methods set forth in Article 4.2.

§ 3.2.2 In addition to and not in derogation of Contractor's duties under Paragraph 1.5.2, the Contractor shall carefully study and compare the Contract Documents with each other and shall at once report to the Architect errors, inconsistencies or omissions discovered. If the Contractor performs any construction activity involving an error, inconsistency or omission in the Contract Documents that the Contractor recognized or reasonably should have recognized without such notice to the Architect, the Contractor shall assume complete responsibility for such performance and shall bear the full amount of the attributable costs for correction. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents. However, any design errors or omissions noted by the Contractor during this review shall be reported promptly to the Architect.

§ 3.2.2.1 Conditions Precedent – Notice

- .1 Notice of any alleged Conflict that have been reasonably identified prior to submitting a Bid shall be provided to the Architect immediately in order that the Architect in its discretion, may issue an Addendum.
- .2 A Bidder's failure to do so constitutes an absolute waiver of any Conflict that may thereafter be asserted with respect thereto and shall bar any recovery regarding such Conflict.
- .3 If any errors, inconsistencies or omissions appear in the drawings, specifications or other Contract Documents, which should reasonably have been discovered and concerning which interpretation had not been obtained from the Architect during the Bidding Period, the Contractor shall within ten (10) days after receiving written "Notice of Award" notify the Architect in writing of such error, inconsistency or omission. In the event the Contractor fails to give such notice, Contractor and its Surety may be required to indemnify Owner for the costs of any such errors, inconsistencies or omissions and the cost of rectifying same including attorney's fees. Interpretation of this procedure after the ten-day period will be made by the Architect and his decision will be final. By Submission of a bid, the Contractor acknowledges that the Contract Documents are full and complete, are sufficient to have enabled it to determine the cost of the Work and that the Drawings, the Specifications and all addenda are sufficient to enable the Contractor to construct the Work outlined therein in accordance with applicable laws, statutes, ordinances, building codes and regulations, and otherwise to fulfill all of its obligations under the Contract Documents.
 - .a The Contract Documents are sufficiently complete and detailed for the Contractor to perform the Work and comply with all requirements of the Contract Documents;

- .b The Work required by the Contract Documents, including, without limitation, all construction details, construction means, methods, procedures, and techniques necessary to perform the Work, use of materials, selection of equipment, and requirements of products by manufacturers are consistent with;
 - .i Good and sound practices within the construction industry;
 - .ii Generally prevailing and accepted industry standards applicable to Work;
 - .iii Requirements of any warranties applicable to the Work; and
 - .iv All laws, ordinances, regulations, rules, and orders which bear upon the Contractor's performance of the Work.
- .c The Contractor has read, understands and accepts the Contract Documents and its bid was made in accordance with them;
- .d The Contract Sum is based upon the products, materials, systems and equipment required by the Contract Documents without exception. Where the Contract Documents list one or more manufacturer or brand name products, materials, systems and equipment as acceptable, the Contract sum is, in each instance, based upon one of the listed manufacturers or brand name products, materials, systems, and equipment, or, if the contract Sum is based upon the substitution of an "or equal" manufacturer or product, material, system or equipment, the Contractor has in each such instance sought and received the Architect's approval for the substitution either:
 - .i Prior to the Bid in accordance Architect's Addenda; and
 - .ii After commencement of the Work, under in conformance with substitution procedure elsewhere in the Contract Documents.
- .e The Contract Sum is firm and all inclusive, and no escalation is contemplated for any reason whatsoever.
 - .i The Contract Sum includes any and all costs associated with completion by those dates and times, including any and all costs associated with out-of-sequence work, come-back work, stand-by work, stacking of trades, coordination with the schedules and work of separate Contractors, allowing sufficient time, work and storage areas, and site access for separate Contractors to timely progress and complete their work, overtime, expediting and acceleration that may be required to complete the work by those dates and times.
 - .ii The Contractor has reviewed the completion dates and times, and milestone dates set forth in the Contract Documents, agrees that such dates and times are reasonable and commits to achieve them.
- .f The Contractor shall satisfy itself as to the accuracy of all dimensions and locations. In all cases of interconnection of its work with existing or other work, it shall verify at the site, all dimensions relating to such existing or other work. Any errors due to the Contractor's failure to verify all such locations or dimensions shall be promptly rectified by the Contractor without any additional cost to the Owner.

§ 3.2.2.2 Deviations from the construction documents must be noted by the Contractor at the time of shop drawing submission. Failure to do so will result in the implication of Section 3.2 of the General Conditions and Paragraph 3.2.1 and 3.2.1.1 above.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor and/or their Surety shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules

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and regulations, and lawful orders of public authorities; unless the Contractor recognized such error, inconsistency, omission or difference and knowingly failed to report it to the Architect.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.4 The Contractor, when requested by the Architect, shall meet with representative of the Architect at all times and furnish all information requested; he shall allow the Architect and Construction Code Officials to inspect the work at all times. Neither the Owner, nor the Architect shall be liable to the Contractor for extra compensation or damages for interference or delays on account of any such meetings, information, or inspections so requested or other acts of the Architect done in good faith and within the scope of their employment by the Owner.

- .1 In addition the Contractor is entrusted with the oversight, management control, and general direction of this project to ensure that all contract completion dates are met. In the event that there are any delays caused to any subcontractor on this project, liability shall lie with the Contractor and not with the Owner.

§ 3.3.5 The Contractor has the responsibility to ensure that all material suppliers and Subcontractors, their agents, and employees adhere to the Contract Documents, and that they order materials on time, taking into account the current market and delivery conditions and that they provide materials on time. The Contractor shall coordinate its Work with that of all others on the Project including deliveries, storage, installations, and construction utilities. The Contractor shall be responsible for the space requirements, locations, and routing of its materials and equipment. In areas and locations where the proper and most effective space requirements, locations and routing cannot be made as indicated, the Contractor shall meet with all others involved, before installation, to plan the most effective and efficient method of overall installation.

§ 3.3.6 The Contractor shall establish and maintain bench marks and all other grades, lines, and levels necessary for the Work, report errors or inconsistencies to the Architect before commencing Work and review the placement of the building(s) and permanent facilities on the site with the Owner and Architect after all lines are staked out and before foundation Work is started. Contractor shall provide access to the Work for the Owner, the Architect, other persons designated by Owner, and governmental inspectors. Any encroachments made by Contractor or its Subcontractor (of any tier) on adjacent properties due to construction as revealed by an improvement survey, except for encroachments arising from errors or omissions not reasonably discoverable by Contractor in the Contract Documents, shall be the sole responsibility of the Contractor, and Contractor shall correct such encroachments within thirty (30) days of the improvement survey (or as soon thereafter as reasonably possible), at Contractor's sole cost and expense, either by the removal of the encroachment (and subsequent reconstruction on the Project site) or agreement with the adjacent property owner(s) (in form and substance satisfactory to Owner in its sole discretion) allowing the encroachments to remain.

§ 3.3.7 Coordination:

- .1 In the case of a single prime Contract (single prime), the General Contractor becomes the sole

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responsible party for the coordination of the entire project, and all other contractors shall mean subcontractors. In the case of a multiple Prime Contract (separate prime), the General Contractor shall also be responsible to coordinate the relationships among the Prime Contractors.

- .2 The General Contractor shall be responsible to coordinate and expedite the total construction process and all of its parts. The Owner relies upon the organization, management, skill, cooperation and efficiency of the General Contractor to supervise, direct, control and manage the work and to coordinate and expedite the efforts of the other prime contractors and subcontractors so as to deliver the work conforming to the contract within the scheduled time. The General Contractor is responsible for proper sequence and coordination. It shall determine the location of work and resolve conflicts amongst Contractors.
- .3 The General Contractor shall provide a qualified full-time staff member or members to manage the project on site. This Construction Superintendent shall coordinate, organize and manage the project from the Contractor's on-site field office and oversee their own work and the work of their sub-contractors. Should the Prime Contractor be responsible for multiple projects at different sites, or multiple locations on one large site, then the Contractor shall provide a separate qualified superintendent for each of the projects or locations. This determination shall be made by and subject to the approval of the Owner, Architect who at all times may require additional manpower. The Superintendent shall be responsible for on-site safety, quality assurance, conformance with the Contract Documents and perform coordination with all on-site construction personnel and/or subcontractors. The Construction Superintendent shall be subject to the approval of the Owner and Architect who at all times have the right to require the contractor to replace this Construction Superintendent if they fail to perform.
- .4 The other prime contractors (separate prime) or subcontractor's (single prime) shall also have a designated Superintendent and/or Foreman who will at all times be subject to the approval of the Owner, Architect. The Owner and Architect reserve the right to require the Contractor to replace the Superintendent and/or Foreman if, in the opinion of the Owner or Architect, the Superintendent and/or Foreman is not performing satisfactorily.
- .5 Each prime contractor shall coordinate his activities with the activities of other contractors.
- .6 All questions pertaining to the work are to be made to the Architect sufficiently in advance (via an RFI Form) of construction to permit comparisons investigation or references to drawings and shop drawings as necessary.
- .7 The General Contractor is required to submit a site logistics plan coordinating all Owner functions with the access and safety of the job site.
- .8 The Contractor is required to coordinate all the inspection and material testing to meet the contract documents specifications.
- .9 The Contractor has full and sole responsibility for construction methods and implementation of a "quality control system" to insure coordination.
- .10 The Contractor is responsible for field verification of all dimensions/measurements for the coordination of materials and trades. Check field dimensions, clearances, relationships to available space, and anchors.
- .11 The Contractor shall make all necessary arrangements to conduct work so that all parts shall be carried on harmoniously and simultaneously or sequentially, so as components or increments of the same shall not interfere or retard the progress of others.
- .12 Minor changes in locations of equipment, parts, etc. due to field conditions shall be made, if so directed, at no additional cost.
- .13 The Contractor shall coordinate the delivery, unloading, movement, relocation, storage and protection of all materials.
- .14 The Contractor shall examine the drawings and dimensions and is responsible for satisfactory joining and fitting of all parts of the work.
- .15 Accurate dimensions, sleeved and opening drawings are to be submitted prior to placement in the field.
- .16 Prepare coordination drawings for all above ceiling areas throughout the entire project. Drawings showing all piping, duct, cable trays, electrical ductbanks, and similar items, but not electrical conduit less than 4 inches in diameter. Complete architectural, mechanical and electrical reflected ceiling layouts, (including ductwork, conduits, piping, lighting, etc.).
- .17 The Contractor is responsible for any omissions of the subcontractors and is required to provide a complete operating facility.
- .18 The General Contractor shall be responsible for preserving the integrity of ceiling heights and room

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sizes and shall:

- .a Check compatibility with equipment, other work, electrical characteristics, and operational control requirements. Check motor voltages and control characteristics. Coordinate controls, interlocks, wiring of pneumatic switches, and relays. Coordinate wiring and control wiring diagrams. Review the effect of changes on other work. Obtain and distribute installation data on each item of equipment requiring mechanical or electrical connections;
 - .b Coordinate and observe start-up and demonstration of equipment and systems. Observe and maintain record of tests and inspections. Coordinate maintenance of record documents;
 - .c Assist the Architect with final inspections;
 - .d Coordinate all mechanical, plumbing, electrical, food service and equipment/furnishings work, and coordinate that work with all other work; and
 - .e Inform the Owner via the Architect when coordination of his work is required.
- .19 Where space is limited, coordinate arrangement of mechanical, electrical, and other work to fit, show plan and cross-section dimensions of space available, including structural obstructions and ceilings as applicable.
- .20 Coordinate cutting and patching activities and sequencing.
- .21 The Architect and Owner shall assist in resolution of any coordination items.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.2.1 Not later than ten (10) days from the Notice to Proceed, the Contractor shall provide a list showing the names of the manufacturers proposed to be used for each of the products identified in the Specifications and the installing Subcontractor's name(s).

§ 3.4.2.2 STANDARD OF QUALITY: The various materials and products specified in the specifications by name or description are given to establish a standard of quality and of cost for bid purposes.

- .1 It is not the intent to limit the Contractor to any one material or product specified but rather to described as the minimum standard.
- .2 When proprietary names are used as the "Basis of Design", for specified products or equipment, they shall be followed by the words "or approved equal in quality necessary to meet the specifications," unless otherwise indicated elsewhere in the Contract Documents.

§ 3.4.2.3 The Architect will evaluate alternatives and substitutions and shall be the sole judge of whether the alternatives, (substitutions), are acceptable or not.

- .1 The burden of proving the alternatives, (substitutions), are equal, or better, to the specified product is that of the Contractor.
- .2 Contractor shall submit request for substitution in accordance with substitution procedures indicated elsewhere in the Contract Documents.
- .3 Any alternative names or products which do not meet the specifications will not be accepted.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.4.4 The Contractor will be held to be thoroughly familiar with all conditions affecting labor in the locale of the Project, including, but not limited to, trade jurisdictions and agreements, incentive and premium time, pay, procurement, living and commuting conditions. Contractor shall assume responsibility for costs resulting from his failure to verify conditions affecting his labor.

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§ 3.4.5 Contractor shall be responsible for labor peace on the Project and shall at all times make its best efforts and judgment as an experienced contractor to adopt and implement policies and practices designed to avoid work stoppages, slowdowns, disputes, or strikes where reasonably possible and practical under the circumstances and shall at all times maintain Project-wide labor harmony. Except as specifically provided in Subparagraph 8.3.1, Contractor shall be liable to Owner for all damages suffered by Owner occurring as a result of work stoppages, slowdowns, disputes, or strikes.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 The Contractor represents that all manufacturer and supplier warranties shall run directly to or be specifically assignable to the Owner. The Contractor warrants that all portions of the work that will be covered by a manufacturer's or supplier's warranty shall be performed in such a manner so as to preserve all rights under such warranties. The Contractor hereby assigns to the Owner effective upon the termination of this contract all manufacturer's and supplier's warranties relating to the Work, and the Contractor shall upon request of the Owner, execute any document reasonably requested by Owner to effectuate such assignment. If the Owner attempts to enforce a claim based upon a manufacturer's or suppliers warranty and such manufacturer or supplier refuses to honor such warranty based in whole or in part on a claim of defective installation by the Contractor, the Contractor shall be responsible for any resulting loss or damages incurred by the Owner as a result of the manufacturer's or supplier's refusal to honor such warranty. The Contractor's obligations under this Subparagraph 3.5.1.1 shall survive the expiration or earlier termination of the Contract. The warranty period for all work of each Contractor shall not be less than two (2) years from the date of Substantial Completion and acceptance by the Owner unless otherwise specified.

§ 3.5.3 The Contractor represents and warrants the following to the Owner (in addition to the other representations and warranties contained in the Contract Documents), as an inducement to the Owner to execute the Owner-Contractor Agreement, which representations and warranties shall survive the execution and delivery of the Owner-Contractor Agreement and the final completion of the Work:

- .1 That he/she is authorized to do business in the State, County, and/or City where construction will take place at the Project and is properly licensed by all necessary governmental and public authorities having jurisdiction over him/her and over the Work and the site of the Project;
- .2 That he/she is familiar with all Federal, State, Municipal and Department laws, ordinances and regulations, which may in any way affect the work of those employed herein, including but not limited to any special acts relating to the work or to the project of which it is a part;
- .3 That such temporary and permanent work required by the Contract Documents as is to be done by him/her, can be satisfactorily constructed and used for the purposes for which it is intended;
- .4 That he/she is familiar with local trade jurisdictional practices at the site of the project;
- .5 That he/she has carefully examined the plans; the specifications and the site of the work, and that from his own investigations, he/she has satisfied himself/herself as to the nature and location of the work, the character, quality and quantity of the surface and subsurface materials likely to be encountered, the character of equipment and other facilities needed for the performance of the work, and the general local conditions, and all other materials which may in any way affect the work or his/her performance; and
- .6 That he/she has determined what local ordinances, if any, will affect his work. That he/she has checked for any County, City, Borough, or Township rules or regulations applicable to the area in which the Project is being constructed and in addition, for any rules or regulations of other organizations having jurisdiction, such as planning commission, industries, or utility companies who have jurisdiction over property on which the Work will be performed. Any costs of compliance with local controls are included in the prices bid, even if documents of such local controlling agencies are not listed specifically in the Contract Documents.

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§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received, or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.6.1 The Owner is exempt from all taxes including Federal Excise Tax, fuel tax, transportation taxes and State Sales or Use Tax.

§ 3.6.2 The Contractor shall pay all social security taxes, unemployment insurance, contributions, or other taxes measured by wages of employees, attributable to, or performing the Work.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 The Contractor shall be required to secure permits or government approvals necessary for the proper execution and completion of the work. The Contractor shall obtain business licenses required by the State, County and/or City and shall give all notices and comply with all laws, ordinances, rules, regulations and orders of any public authority bearing on the performance of the work.

- .1 It shall be the obligation of the Contractor to review the Contract Documents and to determine and to notify the Owner and Architect of any discrepancy between building codes and regulations of which the Contractor has knowledge or should be reasonably able to determine.
- .2 The Contractor shall not violate any zoning, setback or other requirements of applicable laws, codes and ordinances, building codes, rules or regulations, the Contractor promptly shall notify the Architect, in writing, and necessary changes shall be accomplished by appropriate modification.
- .3 The required Building Permit or Permits shall be secured by the Contractor for his trade; or by the Prime Contractor in charge of the Work when the Contract combines more than one trade under a Single Contract. Fees shall be paid for by the Owner or reimbursed after submission of receipt to the Architect for Owner's payment without additional mark-up.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.2.1 Subject to the other terms and conditions of these General Conditions, it is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. However, if the Contractor observes that portions of the Contract Documents are at variance therewith, the Contractor shall promptly notify the Architect and Owner in writing, and necessary changes shall be accomplished by appropriate modification.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to the correction thereof or related thereto, including all fines and penalties.

§ 3.7.4 Concealed or Unknown Conditions

Claims for Concealed or Unknown Conditions: Subject to the Contractor's obligations under Articles 3.2, if conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than five (5) days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. Claims by either party in opposition to such determination must be made within 21 days after the Architect has given notice of the decision. If the conditions encountered are materially different, the Contract Sum and Contract Time shall be equitably adjusted, but if the Owner and Contractor cannot

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agree on an adjustment in the Contract Sum or Contract Time, the adjustment shall be referred to the Architect for initial determination, subject to further proceedings pursuant to Section 15.2.5.1.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts; and
- .2 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect the difference between actual costs and the allowances under in the Contract Documents.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent full-time superintendent and necessary assistants, acceptable to the Owner and Architect who shall be in attendance at the Project site during performance of the Work and until final completion of all work including all corrective and punch list items. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. If, in the Architect's opinion, the quality or progress of the work is adversely affected by the lack of adequate supervision, the Contractor shall increase the number of supervisory personnel at no increase in the Contract Sum. Each contractor must have supervisory personnel on site at all times during the execution of any work under their respective contract.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.9.4 A Superintendent for the contractor shall be required for the overall project and a Foreman shall be required at each project site. The number of necessary Assistants to the superintendent shall be determined by the areas where work is in progress so that the work areas are adequately supervised by the Contractor's superintendent or one of his assistants. If in the Architect's opinion, the quality or progress of the work are adversely affected by lack of adequate supervision, the Contractor shall be required to increase the number of supervisory personnel at no increase in the Contract sum.

§ 3.9.5 The Contractor shall provide a qualified full-time staff member or members to provide mechanical and electrical coordination and perform coordination with all their subcontractors.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of

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Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project. The schedule which is prepared by the General Contractor shall indicate the proposed starting and completion date for the various subdivisions of the Work as well as the totality of the Work. The schedule shall be updated every thirty (30) days and must be submitted to the Architect with Contractor's Applications for Payment. If the schedule is not submitted with the payment application, no payment will be processed. Each schedule shall contain a comparison of actual progress with the estimated progress for such point in time started in the original schedule. If any schedule submitted sets forth a date for Substantial Completion for the Work or any phase of the Work beyond the date(s) of Substantial Completion established in the Contract (as the same may be extended as provided in the Contract Documents), then Contractor shall submit to Architect and Owner for their review and approval a description of the means and methods which Contractor intends to employ to expedite the progress of the Work to ensure timely completion of the various phases of the Work as well as the totality of the Work. To ensure such timely completion, Contractor shall take all necessary action including, without limitation, increasing the number of personnel and labor on the Project and implementing overtime and double shifts. In that event, Contractor shall not be entitled to an adjustment in the Contract Sum or the schedule.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in

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accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors. Submittals which are not marked as reviewed for compliance with the Contract Documents and approved by the Contractor shall be returned by the Architect without action.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.12.11 After the Contract has been executed, the Owner and the Architect will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in "SUBSTITUTION PROCEDURES" and "PRODUCT REQUIREMENTS" in Division 01 of the Project Manual.

§ 3.12.12 All substitutions or deviations from the plans and specifications must be clearly noted as such on all Shop Drawings, Product Data, Samples or similar submittals. Contractor shall identify, coordinate and pay for any

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additional requirements as a result of substitutions, deviations, etc., including necessary change orders and additional work of other trades as a result of the substitution.

§ 3.12.13 All Shop Drawings, Product Data, Samples or similar submittals are to be submitted within the time frame indicated in the Contract Documents. Shop Drawings, Product Data, Samples or similar submittals logs shall be updated and submitted at each job meeting along with job meeting report form.

§ 3.12.14 All shop drawings are to include manufacturer's data. All shop drawings and samples are to be submitted by the Contractor to the Architect for review. Each sheet of the shop drawings shall identify the project, contractor, subcontractor, and fabricator or manufacturer and the date of the drawings. All shop drawings shall be numbered in consecutive sequence and each sheet shall indicate the total number of sheets in the set.

§ 3.13 Use of Site

§ 3.13.1 The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.13.2 The Contractor shall not place or maintain, or allow to be placed or maintained, any advertising matter, sign, bill, poster, etc., on or about the Site, except those required by law or by the Contract Documents, unless approved by the Architect.

§ 3.13.3 Contractor shall store materials on site only in areas as directed by the Owner and shall confine operations only to areas of new construction. The Contractor shall provide adequate protection around the designated storage areas. Workers will not be permitted in areas other than construction areas. When by exception, the Owner allows any room to be used as a shop, storeroom, etc., during the progress of the work, the Contractor making use of the space will be responsible for any repairs, patching, or cleaning arising from such use. Prior approval of Owner for use of such areas is mandatory and Contractor shall be required to provide full access to other trades for work activities. Contractors shall not be permitted to use partially completed spaces for storage areas or offices.

§ 3.13.4 If the Work is to be executed in areas occupied by the Owner, the Contractor shall inform the Owner in advance of the areas scheduled to be worked on so that the Owner's personnel may make proper preparations to protect equipment and records.

§ 3.13.5 All storage of materials at the site shall be subject to the approval or rejection of the Owner and such storage, even when approved, will be done as to minimize any impact upon the Owner's ongoing operations at the site.

§ 3.13.6 All materials delivered to the premises which are to form a part of the work are to be considered the property of the Owner and must not be removed without the Owner's consent; but the Contractor shall remove all surplus materials upon completion of each phase of the work and as directed by the Architect.

§ 3.13.7 The existing facilities may be in use during the progress of the work as indicated in the specifications. The Contractor shall schedule his work in conjunction with the use of the facility to permit operation by the Owner and cause the least disruption to the Owner's normal schedule.

§ 3.13.8 If the Contractor is required to work in areas that will also be occupied, he/she shall maintain adequate barricades, fences, etc. to protect the occupants and the work. Any work that is not possible to be completed while occupants are present shall be completed on weekends or evenings only with approval of the Owner. No work shall occur while the building is occupied without consent of the Owner.

§ 3.13.9 Construction shall be limited to the hours indicated in "SUMMARY" in Division 01 of the Project Manual.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

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§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.15.3 Each Prime Contractor shall perform a daily clean up and removal of debris from the site including that of his subcontractors. Each Prime Contractor shall maintain an adequate supply of laborers to accomplish daily clean up and removal of debris from the site and work areas. No debris will be allowed to accumulate in or around the building including masonry debris. The building site must be maintained free of all litter, dirt, dust and debris on a daily basis. The Owner's team may stop all work and require all personnel on site to clean up. Prior to installation of finishes, the floors shall be swept or vacuumed and kept free of dust and dirt until turned over to the Owner.

§ 3.15.4 Cleaning and debris removal may be considered a safety concern by judgment of the Owner or their agents, and as such the work may be stopped to provide time and labor for immediate clean up by the Contractor(s).

§ 3.15.5 Final Clean-Up: The Contractor has the responsibility for the final clean-up and policing of the entire site after other contractors have removed their own waste materials, rubbish, equipment, tools and plant. In addition, thereto, the General Construction Contractor shall have a professional cleaning company perform the following immediately prior to the Architect's inspection for Substantial Completion:

- .1 Removal of all manufacturer's temporary labels from materials, equipment and fixtures;
- .2 Removal of all stains from glass and mirrors; wash, polish, inside and outside;
- .3 Removal of marks, stains, finger prints, other soil, dust, dirt, from painted, decorated, or stained woodwork, plaster or gypsum wall board, metal, acoustic tile, and equipment surfaces;
- .4 Remove spots, paint, soil, from resilient flooring and carpeting;
- .5 Remove temporary floor protections; clean, strip and provide three (3) coats of wax on new VCT floors or otherwise treat as directed by the material manufacturers recommendation, all finished floors. Final vacuum all carpet;
- .6 Clean all interior finished surfaces, including doors and window frames, and hardware required to have a polished finish, of oil, stains, dust, dirt, paint, and the like; leave without finger prints, blemishes; and
- .7 Final site cleanup shall extend beyond the Contract Limit Lines as reasonably required to insure the complete removal of all construction debris from the entire site, including staging areas.

§ 3.15.6 No accumulation of flammable material shall be permitted.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.16.1 Contractor shall keep only necessary equipment on site and shall cooperate with the Owner regarding the location of stored material. Contractor shall not be allowed to unreasonably encumber the Project site (or building) with equipment and stored material and shall afford other contractors reasonable opportunity for introduction and storage of their materials and for execution of other work.

§ 3.16.2 General Contractor shall be responsible to maintain access/egress to building and site.

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§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Owner's consultant's and agents, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent, reckless or intentional acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

- 1 Contractor, for itself, its successors and assigns, agrees to indemnify and save Owner, the individual members (past, present and future), its successors, assigns, employees, agent, Architects, Engineers harmless from, and against any and all claims, demands, damages, actions or causes of action by any party, together with any and all losses, costs or expenses in connection therewith or related thereto, including, but not limited to, attorney fees and costs of suit, for bodily injuries, death or property damage arising in or in any manner growing out of the work performed, or to be performed under this Contract. Contractor and its successors and assigns agree to indemnify the Owner, its individual members (past, present and future), its successors, assigns, employees, agents, Architects, Engineers against all fines, penalties or losses incurred for, including, but not limited to, attorney fees and costs of suit, or by reason of the violation by Contractor in the performance of this Contract, or any ordinance, regulation, rule of law of any political subdivision or duly constituted public authority. Without limiting the foregoing, the Contractor, at the request of Owner, its individual members (past and present), its successors, assigns, employees, agents, Architects, Engineers agrees to defend at the Contractor's expense any suit or proceeding brought against Owner, its individual members (past, present and future), its successors, assigns, employees, agents, Architect, Engineers due to, or arising out of the work performed by the Contractor.
- 2 The Contractor assumes the entire risk, responsibility, and liability for any and all damage or injury of every kind and nature whatsoever (including death resulting therefrom) to all persons, whether employees of the Contractor or otherwise, and to all property (including the Work itself) caused by, resulting from, arising out of or occurring in connection with the execution of the Work, or in preparation for the Work, or any extension, modification, or amendment to the Work by the Change Order or otherwise. To the fullest extent permitted by law, the Contractor and its Surety shall indemnify and save harmless the Owner, the Architect, the Architect's consultants, and the respective agents and employees of any of them (herein collectively called the Indemnitees) from and against any and all liability, loss, damages, interest, judgments, and liens growing out of, and any and all costs and expenses (including, but not limited to, counsel fees and disbursements) arising out of, relating to or incurred in connection with the Work including, any and all claims, demands, suits, actions, or proceedings which may be made or brought against any of the Indemnitees for or in relation to any breach of the Contract for Construction or any violation of the laws, statutes, ordinances, rules, regulations, or executive orders relating to or in any way affecting the performance or breach of the Contract for Construction, whether or not such injuries to persons or damages to property are due or claimed to be due, in whole or in part, to any negligence, reckless or intentional acts of the Contractor or its employees, agents, subcontractors, or materialmen, excepting only such injuries and/or damages as are the result of the sole gross negligence of the Owner, Architect, or Engineer.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the

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indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

§ 3.19 Re-Design

§ 3.19.1 If the Contractor makes or causes to be made, due to approval of substitute equipment or otherwise, any substantial change in the form, type, system and details of construction from those shown on the drawings, he/she shall pay for all costs arising from such changes. The Contractor shall reimburse the Owner for all Architectural and engineering fees required to check the adequacy of and/or document such changes. Any changes or departures from the construction and details shown shall be made only after written approval from the Architect.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.1.1 The Architect is REGAN YOUNG ENGLAND BUTERA, PC, a professional corporation under the laws of the State of New Jersey, with principal offices at 456 High Street, Mount Holly, New Jersey 08060, and is identified as "the Architect" in the Owner-Contractor Agreement and is referred to throughout the Contract Documents as "the Architect" as though singular in number. The term "the Architect" means REGAN YOUNG ENGLAND BUTERA, PC or its authorized representative. Engineering Services for Civil, Structure, Mechanical, Plumbing, Electrical and Fire Protection are provided under the Architect's contract.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment and with the Owner's concurrence, from time to time during the two-year period for correction of Work described in Section 12.2. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents unless otherwise modified in writing in accordance with other provisions of the Contract.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

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§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4 and regulations regarding "Change Orders" promulgated under the Local Public Contracts Law, N.J.S.A. 40A:11-1 et seq.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the language and intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

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§ 4.2.15 Reference in the technical provisions of the specifications to standard specifications and test methods, including those of the American Society for Testing and Materials, the American Iron and Steel Institute, the American National Standards Institute, the American Society of Mechanical Engineers, the American Society of Heating, Refrigeration and Air Conditioning Engineers, the Factory Mutual System, the National Fire Protection Association, Federal Specifications, and other similar nationally recognized technical societies and agencies shall refer to the editions and revisions current with the date of the codes referenced in the Contract Documents.

§ 4.2.16 The Architect's decision with respect to proposed substitutions of material or equipment specified by trade name shall be final. The Architect reserves the right to waive specifications and to accept a proposed substitution, which in his opinion is superior to the material or product specified, or to limit the specification to the product specified.

§ 4.2.17 Approval of substitutions shall not relieve the Contractor of responsibility for adequate fulfillment of all the various parts of the work, nor from specified guarantees and maintenance. Modification of adjacent or connecting work required due to any substitution approval shall be provided as part of the substitution.

§ 4.2.18 Insofar as practicable, except as otherwise specified or shown, the material or product of one manufacturer shall be used throughout the work for each specified purpose.

§ 4.2.19 Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in strict accordance with the manufacturer's directions. Should such directions conflict with the Specifications, the Contractor shall request clarification from the Architect before proceeding.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.1.1 In accordance with Title 40A, Local Public Contracts Law, the Contractor submitting a bid to perform the work under a single contract shall furnish in writing at the time of Bid, the names of persons or entities proposed as Prime subcontractors. Prime subcontractors shall be qualified in accordance with N.J.S.A. 40A:11-16. In addition, submit evidence of performance security of each Prime subcontractor simultaneously with the bid.

§ 5.2.1.2 In accordance with Chapter 150, Laws of 1963: Prime subcontractors appearing on the Commissioner of Labor and Industry's current list of subcontractors who have failed to pay prevailing wages, will be automatically rejected.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.2.1 Failure of the Owner or Architect to voice objection to a Subcontractor or material supplier shall not relieve the Contractor of responsibility for compliance with the Contract Documents.

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§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.3.1 Prime Subcontractors or Subcontractors proposed by the Contractor will not be acceptable to either the Owner or Architect where evidence exists that such proposed Subcontractors (1) are unable or unwilling to comply with the requirements of the Contract Documents; (2) have experience, judged by the Owner or Architect, to be inconsistent with requirements for the Work; (3) or appear on the Department of Labor and Workforce Development Prevailing Wage Debarment List. In these instances, the Contractor will not be entitled to a change in the Contract Sum as provided in Subparagraph 5.2.3 and shall propose substitute Subcontractors for those not accepted for causes stated herein.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.2.5 No work shall take place on site by a subcontractor unless a qualified Contractor, responsible for the subcontractor's work, is on site to manage the work of their subcontractor.

§ 5.3 Subcontractual Relations

(Paragraphs deleted)

§ 5.3.1 By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.3.1.1 Where the Contractor sublets portions of the Work, the entire responsibility for the subdividing of Work rests with the Contractor. The Owner and Architect are not responsible for the manner of the subdivision of the Work and neither will enter into nor settle disagreements or disputes between Contractor and Subcontractors.

§ 5.3.2 The Contractor shall obligate each Subcontractor specifically to comply with the New Jersey Plan of Affirmative Action to avoid discriminatory practice in employment.

§ 5.3.3 The Contractor shall obligate each Subcontractor to comply with the applicable prevailing wage schedule of the Department of Labor of the State of New Jersey per 16.2.1 and 16.2.2.

§ 5.3.4 The Contractor shall obligate each Subcontractor to comply with the Public Works (the Public Works Contractor Registration Act of the State of New Jersey).

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the

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Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Contractor shall be responsible to coordinate all Work. All trades have a mutual obligation to coordinate their work with the other trades and cooperate as necessary with the Contractor and the Construction Schedule to complete the work as required by the Owner. The Contractor is required to have their Superintendent or Foreman on site at all times when their work or that of their Subcontractors is in progress.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent. Should the Contractor be damaged by any other separate Contractor on the work by reason of such other Contractor's failure to perform properly his Contract with the Owner, no action will lie against the Owner or Architect, and the Owner and the Architect shall have no liability therefore, but the Contractor may assert his claim for damage against such separate Contractor as a third-party beneficiary under the Contract between such other Contractor and the Owner.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5 or to other completed or partially completed construction or property on the site or to property of any adjoining Owner or other party.

§ 6.2.4.1 Should the Contractor cause damage to the work or property of any separate Contractor on the Project, the Contractor shall, upon due notice, settle with such other Contractor by agreement or Court of Law if he will so settle. If such separate Contractor sues the Owner or Architect, or initiates a Court of Law proceeding on account of any damage alleged to have been so sustained, the Contractor agrees that he will hold the Owner and Architect harmless against any such suit, and that he will reimburse to the Owner or Architect, as the case may be, the cost of defending such suit, including reasonable attorney's fee and if judgment against Owner or Architect arises therefrom, the Contractor shall pay all judgment cost incurred by the Owner and Architect.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

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§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible as the Owner determines to be just, based on the recommendation of the Architect.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.1.1 A field directive or field order shall not be recognized as having any impact upon the Contract Sum or the Contract Time and the Contractor shall have no claim therefore unless it shall, prior to complying with same and in no event no later than 10 working days from the date such direction or order was given, submit to the Owner for the Owner's approval its change proposal.

§ 7.1.1.2 When submitting its Change Order request, the Contractor shall include and set forth in clear and precise detail breakdowns of labor and materials for all trades involved and the estimated impact on the Construction Schedule. The Contractor shall use the Prime Contractor Change Order Request forms, 012610 and the Subcontractor Change Order Request forms, 012620 of the Project Manual.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone in accordance with Section 7.4.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.1.4 Notwithstanding anything to the contrary contained in this article, all Change Orders shall be subject to the requirements of N.J.A.C. 6A:26-4.9 (2006).

§ 7.1.5 A directive or order from the Owner or Architect, other than a Change Order, a Construction Change Directive or any order for a minor change pursuant to this article 7, shall not be recognized as having any impact on the contract sum or the contract time and the Contractor shall have no claim therefore. If the Contractor believes that a directive or order would require it to perform work not required by the contract documents, the Contractor shall so inform the Owner and Architect in writing prior to complying with the same and in no event any later than five (5) working days from the day such direction or order was given and shall submit to the Owner and Architect for the Owner's and Architect's approval its change proposal.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.2.2 Change Orders shall include all costs, including cost of preparation of the Change Order, all impact and ripple costs associated with modifications or delays to the work an assessment of the amount and impact of any perceived potential delays, and all costs associated with modifications to other work.

- .1 The Prime Contractor shall furnish all necessary documentation to support the additional cost, including but not limited to the following:
 - .a Copy of subcontractor's proposal;
 - .b Complete breakdown for all costs for labor and material;
 - .c Complete breakdown of related costs; and
 - .d Other information as may be requested by the Architect.

§ 7.2.3 The overall cost of the Change Order shall be inclusive, and once accepted by the Owner it shall be considered full and final.

§ 7.2.4 When a Change Order involves both additions and deletions in material, the net quantity is to be determined and the appropriate overhead and profit is to be applied to the net quantity.

§ 7.2.5 When any change in the Work, regardless of the reason therefore, requires or is alleged to require an adjustment in Contract Time, such request for time adjustment shall be submitted by the Contractor as part of the change proposal. Any Change Order approved by the Owner and for which payment is accepted by the Contractor, in which no adjustment in Contract Time is stipulated, shall be understood to mean that no such adjustment is required by reason of the change, and any and all rights of the Contractor or any subsequent request for adjustment of Contract Time by reason of the change is waived.

§ 7.2.6 Request by the Contractor for adjustment of the Contract Amount regardless of the reason therefore, shall be submitted to the Owner and Architect with itemized labor and material quantities and unit prices to permit proper evaluation of the request. A submission by the Contractor containing unsubstantiated lump sum requests for adjustment of the Contract Amount will not be considered by the Owner and Architect. The Owner and Architect will not be liable for any delay incurred by reason of the Contractor's failure to submit satisfactory justification and back-up with any request for adjustment to the Contract Amount.

§ 7.2.7 Agreement on any Change Order shall constitute a final settlement of all matters relating to the change in the initial Work which is the subject to the Change Order, including, but not limited to, all direct, indirect and impact costs associated with such change and any and all adjustment to the Contract Sum and the Construction Schedule. The Contractor will not be entitled to any compensation for additional work, impact costs or delays in the Construction Schedule not included in the Change Order.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance shall be in accordance with the Prevailing Wage Rates at the time the Contract is signed with no additional "labor burden", future increases or any other considerations;

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- .2 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others; and
- .3 The allowance for overhead and profit combined, included in the total cost to the Owner, shall be based upon the following schedule, may only include a Contractor, his Subcontractor and shall be limited to a total of 15% of the cost:
 - .a In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs, including labor, materials and subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are subcontractors, they shall be itemized.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

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§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.2.3.1 Contract Time shall start and end on the dates indicated in the Agreement plus any authorized extension(s) of time as approved by written Change Order.

§ 8.2.4 The Contractor shall have sole responsibility for any and all costs, charges, fees or expenses of any and all kinds from the failure to complete the work within the preceding time period, and such sums shall be deducted from the Contract Sum.

§ 8.2.5 Owner, or his representative, in coordination with the Contractor, shall set work hours. Contractor may be required to work nights, weekends or holidays as necessary to complete the work in accordance with the Schedule or in coordination with the Owner's activities. Under no circumstances shall the Contractor begin or continue with work that is adversely impacting the Owner's activity or operations. All utility shutdowns, interruptions, work in or adjacent to existing buildings will be coordinated through the Owner, or his representative, and may have to be performed during hours when the building is not in operation. All cutting, hammering or other activity that is noisy, produces smoke or fumes or is otherwise disruptive to the building occupants may have to be done during hours when the building is not in operation. Work required to be performed during non-operating hours, as determined by the Owner or his representative, will be performed at no additional cost to the Owner. Contractor agrees to increase manpower, increase work hours, and to increase equipment necessary to maintain the Project Construction Schedule, and when also requested by the Architect and the Owner, and shall be without additional cost or charge to the Owner.

§ 8.2.6 Work shall commence in accordance with the Notice to Proceed and shall proceed uninterrupted to Final Completion. The Contractor acknowledges and recognizes that the Owner is entitled to full and beneficial occupancy and use of all or part of the completed Work in accordance with the milestone dates set forth in other sections of the Contract Documents, as per approved Schedule, and that the Owner has made arrangements to discharge its public obligations based upon the Contractor's achieving Substantial Completion of all of the Work within the Contract Time. The Contractor further acknowledges and agrees that if the Contractor fails to complete substantially or cause the Substantial Completion of any portion of the Work as required by the Project Construction Schedule and/or within the Contract Time, the Owner will sustain extensive damages and serious loss as a result of such failure. The exact amount of such damages will be extremely difficult to ascertain. Therefore, the Owner and the Contractor agrees as set forth below:

- .1 If the Contractor fails to achieve partial completion within the requirements of the milestone dates or the approved Schedule or to achieve Substantial Completion of all or part of the Work when and as required by the Project Construction Schedule and/or within the Contract Time, the Owner shall be entitled to retain or recover from the Contractor and its Surety, as liquidated damages and not as a penalty, the amounts indicated in other sections of the Contract Documents and commencing upon the first day following expiration of the Project Construction Schedule and/or the Contract Time, as the case may be, and continuing until the actual Date of Substantial Completion.
- .2 Adherence to Schedule:
 - .a Monthly progress payments will only be released after the Contractor reaches the status of completion for that month contemplated by the construction schedule.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes

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ordered in the Work; or by occurrences beyond the control and without the fault or negligence of the Contractor and which by the exercise of reasonable diligence the Contractor is unable to prevent or provide against, including labor disputes (other than disputes limited to the work force of, or provided by, the Contractor or its Subcontractors), fire, unusual delay in deliveries not reasonably anticipatable, unavoidable casualties, or by other occurrences which the Architect, subject to the Owner's approval, determines may justify delay, then, provided that the Contractor is in compliance with Subparagraph 8.3.3 hereof, the Contract Time shall be extended by Change Order or Construction Change Directive for the length of time actually and directly caused by such occurrence as determined by the Architect and approved by the Contractor and Owner (such approval not to be unreasonably withheld, delayed, or conditioned); provided, however, that such extension of Contract Time shall be net of any delays caused by or due to the fault or negligence of the Contractor or which are otherwise the responsibility of the Contractor and shall also be net of any contingency or "float" time allowance included in the Contractor's construction schedule. The Contractor shall, in the event of any occurrence likely to cause a delay, cooperate in good faith with the Architect and Owner to minimize and mitigate the impact of any such occurrence and do all things reasonable under the circumstances to achieve this goal.

§ 8.3.2 Claims relating to time shall be made as follows:

- .1 Any claim for extension of time should be made in writing to the Architect not more than five (5) days after the commencement of the delay, otherwise, it shall be waived. The Contractor shall provide an estimate of the probable effect of such delay on the progress of the work. No claim made beyond the five (5) days shall be considered valid; and
- 2 The Contractor agrees that if any delay in the Contractor's works unnecessarily delays the work of any other Contractor or Contractors, the Contractor shall in that case pay all costs and expenses incurred by such parties due to such delays and hereby authorizes the Owner to deduct the amount of such costs and expenses from any moneys due or to become due the Contractor under this Contract. The Architect shall be responsible for ascertaining whether the Contractor is responsible for delaying any of the work of any other Contractor. The Architect's decision shall be final.

§ 8.3.3 Notwithstanding anything to the contrary in the Contract Documents, any extension of the Contract Time, to the extent permitted under Paragraph 8.3.1, shall be the sole remedy of the Contractor for any (1) delay in the commencement, prosecution or completion of the Work, (2) hindrance or obstruction in the performance of the Work, (3) loss of productivity or (4) other similar claims (collectively referred to in this Paragraph 8.3.3 as "delays"), whether or not such delays are foreseeable, unless a delay is caused by acts of the Owner constituting active interference with the Contractor's performance of the Work and only to the extent such acts continue after the Contractor furnishes the Owner and Architect with written notice of such interference. In no event shall the Contractor be entitled to any compensation or recovery of any damages in connection with any delay including without limitation consequential damages, lost opportunity cost, impact damages or other similar remuneration. The Owner's exercise of any of its rights or remedies under the Contract Documents (including without limitation ordering changes in the Work or directing suspension, rescheduling or correction of the Work) regardless of the extent or frequency of the Owner's exercise of such rights or remedies shall not be construed as an act of interference with the Contractor's performance of the Work.

§ 8.3.4 The Contractor agrees that the Owner can deduct from the Contract Sum, any wages paid by the Owner to any Inspector, Architect, or other professional necessarily employed by the Owner for any number of days in excess of the number of days allowed in the specifications for completion of work.

§ 8.3.5 Where the cause of delay is due to weather conditions, an extension of time shall be granted only for unusually severe weather, as determined by reference to historical data. The term "historical data" as used in the previous sentence shall be construed according to this formula: Average rainfall (or snow or low temperature) for the past five years.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

§ 9.2.1 Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work which in the aggregate equals the total Contract Sum, divided so as to facilitate payments to Subcontractors, supported by such evidence of correctness as the Architect may direct or as required by the Owner. It will be necessary for all Contractors to divide their contract into a separate schedule for the work performed at the project. These schedules, when approved by the Architect and Owner, shall be used to monitor the progress of the Work and as a basis for Certificates for Payment. All items with entered values will be transferred by the Contractor to the "Applications and Certificate for Payment," and shall include the latest approved Change Orders and Construction Change Directives. Change Order values and Construction Change Directive values shall be broken down to show the various subcontracts. The Application for Payment shall be on AIA Document G702 and G703. The approved Voucher is obtainable from the Owner. Each item shall show its total scheduled value, value of previous applications, value of the application, percentage completed, value completed and value yet to be completed. All blanks and columns must be filled in, including every percentage complete figure.

§ 9.2.2 Each Prime Contractor shall include the following separate items in their schedule of values:

- .1 Punch List Work - Minimum of 1% of contract value.
- .2 Value for testing.
- .3 Value for Record Drawings and manuals.
- .4 Value for final clean-up and monthly value for daily clean up by General Contractor.
- .5 Value for equipment start-up and commissioning.
- .6 Value for shop drawings.
- .7 Safety protections.
- .8 Project Schedule and monthly updates.
- .9 Allowances.
- .10 TAB coordination shiv, belts and modifications as required.
- .11 Value for Owner's attic stock.
- .12 Winter Protection.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values for their Contract on AIA Document G702 and G703 and the Contract Documents.

(Paragraphs deleted)

§ 9.3.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

(Paragraph deleted)

§ 9.3.3 Until substantial completion, the Owner will pay 98% of the amount due the Contractor on account of progress payments until a balance of \$500,000 is due the Contractor. The retainage will then be increased to Five Percent (5%) of the \$500,000.00 balance of the contract until final completion. The retainage will be held until final acceptance of the project by the Architect and the Owner. The Contractor shall submit a separate voucher for the full amount of the retainage along with the Consent of Surety, A.I.A. Form G707A and the Contractor shall be required to furnish a Maintenance Bond for 10% of the Project Cost for a period of two (2) years from the Date of Substantial Completion.

§ 9.3.4 Upon acceptance of the work performed pursuant to this Contract for which the Contractor has agreed to the withholding of payments pursuant to Article 9 of this Contract, all amounts being withheld by the Owner shall be paid in accordance with Paragraph 9.3.3 without further withholding of any amounts for any purposes whatsoever, provided that the Contract has been satisfactorily completed.

§ 9.3.5 Each application for payment shall be accompanied by the following, all in form and substance satisfactory to the Owner and Architect:

- .1 A current contractor's lien waiver and duly executed and acknowledged sworn statement by an officer of the Contractor showing all subcontractors and material supplier with whom the Contractor has

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entered into subcontracts, the amount of each such subcontract, the amount requested for any subcontractor and material supplier in the requested progress payment and the amount to be paid to the Contractor from such progress payment together with similar sworn statements from all such subcontractors and material supplier.

- 2 Duly executed waivers of mechanics and material supplier's liens from all subcontractors and when appropriate, from material supplier and lower tier subcontractors establishing payment or satisfaction of payment of all amounts requested by the Contractor on behalf of such entities or persons in any previous application for payment.
- 3 A Purchase Order or Voucher if required by the Owner.
- 4 Payroll Verification Affidavit.
- 5 Bill of Sale/Certification for Stored Materials.
- 6 Monthly Project Workforce Report (AA-202).

§ 9.3.6 At the Owner's option, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with Paragraphs 9.3.1, 9.3.2, 9.3.3, 9.3.4 and 9.3.5 satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.6.1 With each Application for Payment the Contractor shall submit to the Architect and Owner Section 012920 Bill of Sale/Certification for Stored Materials as found in the Project Manual identifying each location where materials are stored off the Project site and the value of materials at each location. The Contractor shall procure insurance satisfactory to the Owner for materials stored off the Project site in an amount not less than the total value thereof. The Contractor shall also provide picture(s) of the stored material(s).

§ 9.3.6.2 The consent of any surety shall be obtained to the extent required prior to the payment for any materials stored off the Project site.

§ 9.3.6.3 Representatives of the Owner shall have the right to make inspections of the off-site storage areas at any time.

§ 9.3.6.4 Materials stored off site shall be protected from diversion, destruction, theft and damage to the satisfaction of the Owner, shall specifically be marked for use on the Project and shall be segregated from other materials at the storage facility.

§ 9.3.7 The Contractor warrants and agrees that title to all Work will pass to the Owner either by incorporation in the construction or upon receipt of payment therefor by the Contractor; whichever occurs first, free and clear of all liens, claims, security interests, or encumbrances whatsoever, that the vesting of such title shall not impose any obligation on Owner or relieve Contractor of any of its obligations under the Contract, that the Contractor shall remain responsible for damages to or loss of the Work, whether completed or under construction, until responsibility for the Work has been accepted by Owner in the manner set forth in the Contract Documents, and that no Work covered by an Application for Payment will have been acquired by the Contractor, or by any other person performing Work at the site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, after receipt of the Contractor's Application for Payment, and as indicated in the Form of Agreement Between Owner and Contractor either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1 The Contractor warrants and agrees that title to all Work will pass to the Owner either by incorporation in the construction or upon receipt of payment therefor by the Contractor, whichever occurs first, free and clear of all liens, claims, security interests, or encumbrances whatsoever, that the vesting of such title shall not impose any obligation on Owner or relieve Contractor of any of its obligations under the Contract, that the Contractor shall remain responsible for damages to or loss of the Work, whether completed or under construction, until responsibility for the Work has been accepted by Owner in the manner

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set forth in the Contract Documents, and that no Work covered by an Application for Payment will have been acquired by the Contractor, or by any other person performing Work at the site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.
- .8 avoidable delay in the progress of the work;
- .9 failure to cooperate with the Architect relative to the construction schedule, material storage, coordination with the Owner and/or other contractors, clean up and site safety;
- .10 failure to submit shop drawings as required by the Contract Documents;
- .11 failure of any Contractors to comply with mandatory requirements for maintaining record drawings. The Contractor shall be required to check record drawings each month. Written confirmation that the record drawings are up-to-date shall be required by the Architect before approval of the Contractor's monthly payment requisition will be considered;
- .12 safety violations; or
- .13 insurance lapses.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

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§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

- .1** If the Contractor disputes any determination by the Architect with regard to any Certificate of Payment, the Contractor nevertheless expeditiously shall continue to prosecute the Work.
- .2** The failure of the Owner to retain any percentage payable to the Contractor or any change in or variation of the time, method or condition of payments to the Contractor shall not release or discharge to any extent whatsoever the Surety upon any bond given by Contractor hereunder. The Owner shall have the right, but not the duty, to disregard any schedule of items and costs that the Contractor may have furnished and defer or withhold in whole or in part any payment if it appears to the Owner, in its sole discretion, that the balance available in the Contract Sum as adjusted and less retained percentages, may be insufficient to complete the Work.
- .3** Notwithstanding any provision of any law to the contrary, the Contractor agrees that the time and conditions for payment under the Contract for Construction shall be as stated in the Contract for Construction and in the Contract Documents. The Contractor specifically agrees that Owner's failure to give, or timely give, notice of:
 - .a** Any error in an invoice or application for payment submitted by the Contractor for payment; or;
 - .b** any deficiency or non-compliance with the Contract Documents with respect to any Work for which payment is requested, shall not waive or limit any of the Owner's rights or defenses under the Contract for Construction and the Contract Documents, or require the Owner to make a payment in advance of the time, or in an amount greater than, as provided by the Contract for Construction.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents and shall so notify the Architect. Notwithstanding Certification by the Architect, the Owner may refuse to make payment based on any default by the Contractor including, but not limited to those defaults set forth in Subparagraphs 9.5.1 through 9.5.1.13. The Owner shall not be deemed in default by reason of withholding payment while any of such defaults by the Contractor remain uncured.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than fourteen (14) days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors and suppliers (of any tier) within the same time.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both,

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under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.6.9 The Owner will issue timely payments to the Contractor in accordance with the requirements of "The Prompt Payment Act", N.J.S.A. 2A:30A-1, et seq. The Contractor is hereby notified that the Owner, as a public entity, requires all payments to be approved at scheduled public meetings. The vote on authorization for payments will be made at the first public meeting of the Owner, following the Owner's receipt of the Architect's authorization for payment, and paid during the subsequent payment cycle.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within fourteen days after receipt of the Contractor's Application for Payment, or if the Owner does not, for reasons other than a default of the Contract, including but not limited to those defaults set forth in Subparagraphs 9.5.1.1 through 9.5.1.12, pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof which the Owner agrees to accept separately is sufficiently complete in accordance with this definition and the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The Work will not be considered substantially complete until all project systems included in the Work are operational as designed and scheduled, all designated or required inspections, certifications, permits, approvals, licenses and other documents from any governmental authority having jurisdiction thereof necessary for the beneficial use and occupancy of the Project are received, designated instruction of Owner's personnel has been completed, and all final finishes within the Contract are in place. In general, the only remaining Work shall be minor in nature, so that the Owner can occupy the building on that date and the completion of the Work by the Contractor would not materially interfere or hamper the Owner's (or those claiming by, through or under the Owner) normal operations. Contractor recognizes that normal operations requires the use and occupancy of the Work by building's intended occupants without interruption and that any punch list or corrective work shall be done at times when the Work is not so occupied. As a further condition of substantial completion acceptance, the Contractor shall certify that all remaining Work will be completed within thirty (30) consecutive calendar days or as agreed upon following the date of substantial completion. In addition to any other definitions of Substantial Completion as defined by the contract documents, the following is required before the project is considered "Substantially Complete":

- .1 All required final inspections have been completed by the authority having jurisdiction resulting in a Temporary Certificate of Occupancy, Certificate of Occupancy or a Certificate of Approval.
2. Air Balancing Reports can be hand written field notes but must be reviewed and approved via the shop drawing process by the Mechanical Engineer. Final Air and Water Balancing Reports certified by the licensed balancer are required for "Final Acceptance" and the start of the warranty period. (These reports must be submitted in accordance with the shop drawing process to the Architect so that they can be tracked and approved and distributed to all applicable parties).
3. Equipment Start Up Reports can be hand written field notes but must be reviewed and approved via the shop drawing process by the Mechanical Engineer. (These reports must be submitted in accordance with the shop drawing process to the Architect so that they can be tracked and approved and distributed to all applicable parties).

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4. Owner On-Site ATC Training: Refer to the ATC specifications for training requirements on-site and off-site. The Owner does not have beneficial use of the mechanical system until they can operate it following this training.

§ 9.8.2 Before the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list (Punch List) of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.2.1 The Contractor shall perform a Quality Control/Quality Assurance QC/QA Punch List of all work prior to requesting Substantial Completion and a Punch List from the Architect. The Architect shall take the lead and conduct an onsite review with the Contractor's superintendent and representation from every major sub prime contractor. Notification of this onsite walk-thru shall be provided from the Architect and Owner who may or may not choose to attend. The Architect shall record and distribute this Punch List to the Contractor for their use and who shall document the completion of the work and the date. After successful completion of the Punch List and all work, the Contractor shall request the Architect to perform a Punch List review walk thru. Substantial Completion shall be requested in accordance with paragraph 9.8.1.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents and the requirements above so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate.

§ 9.8.5.1 The Architect's Certificate of Substantial Completion shall be subject to the Owner's final approval.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, who shall obtain all necessary modifications to its insurance coverage to permit such occupancy or use. In addition, Contractor shall obtain consent of those public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete pursuant to the terms of that Agreement.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of any Work not complying with the requirements of the Contract Documents; and

.1 except as hereinafter stated, nor does it waive the Owner's right to Liquidated Damages. Final Acceptance of the Work shall be for the whole Work only and not part.

§ 9.9.4 As portions of the Project are completed, and occupied, Contractor shall ensure the continuing construction activity will not unreasonably interfere with the use, occupancy and quiet enjoyment of the completed portions thereof.

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- .1 The Contractor agrees to coordinate the Work with the Architect and the Owner in order to minimize disturbance to occupied portions of the structure.
- .2 In the event performances or scheduled events by the Owner are conducted in close proximity to the Work in progress, the Contractor agrees to cease all work which may disturb the Owner's occupants at the site.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. All required close out documentation pursuant to the Contract Documents, shall be assembled and delivered by the Contractor to the Architect as part of the final Application for Payment. The Architect will not issue the final Application for Payment to the Owner until all required close out documentation has been received and approved by the Architect and accepted by the Owner.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner, and (6) evidence of compliance with all requirements of the Contract Documents: notices, certificates, affidavits, other requirements to complete obligations under the Contract Documents, including but not limited to (a) instruction of Owner's representatives in the operation of mechanical, electrical, plumbing and other systems, (b) delivery of keys to Owner with keying schedule, master, sub-master and special keys, (c) delivery to Architect of Contractor's General Warranty as described in section 3.5 and each written warranty and assignment thereof prepared in duplicate, certificates of inspections, and bonds for Architect's review and delivery to Owner, (d) delivery to Architect a printed or typewritten operating, servicing, maintenance and cleaning instructions for all Work; parts lists and special tools for mechanical and electrical Work, in approval form, (e) delivery to the Architect of specified Project record documents, (f) delivery to the Architect all required "Attic Stock" and spare parts, and (g) delivery to Owner of a Final Waiver of Liens (AIA Document G-706 or other form satisfactory to Owner), covering all Work including that of all Subcontractors, vendors, labor, materials and services, executed by an authorized officer and duly notarized. In addition to the foregoing, all other submissions required by other articles and paragraphs of the Project Manual shall be submitted to the Architect before approval of final payment. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If a lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

9.11 Liquidated Damages

§ 9.11.1 The Contractor understands and agrees that all work must be performed in an orderly and closely coordinated sequence so that the date for substantial completion is met.

§ 9.11.2 If the Contractor fails to complete his/her work or fails to complete a portion of his/her work, he/she shall pay the Owner, as liquidated damages and not as a penalty, the sum as specified in sub-paragraphs 9.11.5. Such amount is agreed upon as a reasonable and proper measure which the Owner will sustain each calendar day by failure of the Contractor to complete work within the stipulated time. Liquidated damages shall also apply to all Phased construction milestone dates as established by the Phasing Schedule.

§ 9.11.3 Substantial completion will be determined by the Architect as defined in paragraph 9.8.1.

§ 9.11.4 For damage occurring at the time of delay, the Owner may retain the amount due to him/her under this clause from any payments due to the Contractor.

§ 9.11.5 The Owner will suffer financial loss if the project is not substantially complete on the date set forth in the Contract Documents. The Contractor and the Contractor's Surety shall be liable for and pay to the Owner the sums hereinafter stipulated and fixed, agreed as liquidated damages for each calendar day of delay as follows:

- .1 TWO THOUSAND FIVE HUNDRED DOLLARS (\$2,500.00) per calendar day of delay beyond the date of Substantial Completion.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract and the following:

- .1 The Contractor must fully comply with the job safety requirements in addition to all Federal, State and Local safety guidelines. All cost associated with complying with all safety requirements shall be included in each contractor's bid.
- .2 The Contractor will serve as the overall Project Safety Coordinator and shall be responsible for all issues of safety and protection. The Contractor shall designate a safety person at the job site while the contractor is working on the project site. The designated safety person shall be responsible for the safety of their work and for their workers and to make continuous inspections for all safety issues relating to his work. Each Contractor must comply with job Safety Requirements in addition to the Federal Occupational Safety and Health Act (OSHA) and local agency requirements. Failure to comply with safety issues will be grounds for withholding of payments.
- .3 Contractor will comply with all reasonable requests of the Owner with respect to additional security and protections required for work interfacing with Facility Operations. Safety is of utmost importance on this project and all issues relative to safety and protection of the Facility, Staff and Occupants will be treated as emergency needs and will not be subject to the seven-day notice requirements of Article 14.
- .4 Contractor shall provide, relocate and /or maintain barricades, signage, provide flagmen etc. as necessary to ensure public safety and safe egress. Contractor to provide, maintain, relocate and remove in coordination with the Owner, the perimeter security fence.
- .5 The proper execution of the required safety provisions is directly related to the general condition safety line item on the Schedule of Values. The failure to provide a competent person on site to properly identify and take immediate corrective action may result in deductions to the general condition safety line item of the Schedule of Values.
- .6 The Contractor shall be responsible for the immediate investigation and resolution of all safety and

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- environmental complaints/issues generated by Contractor employees, Owners, Owner's representatives or members of the public.
- .7 The Contractor shall be responsible for providing and maintaining all temporary emergency egress routes. The Contractor shall obtain the approval of the Building and Fire Departments for all temporary emergency egress routes. General Contractor to provide for fire separation walls between occupied areas as required by local officials.
 - .8 Contractor shall maintain all egress routes throughout building. Contractor shall post exit signs as coordinated with the Owner. Contractor shall provide wall hung fire extinguishers throughout building as deemed necessary by the fire officials.
 - .9 The Contractor shall supply (2) two OSHA approved means of access/egress to each floor and roof for the course of the entire project for use by all applicable parties. The Contractor shall erect and maintain OSHA approved pedestrian walking bridges, for emergency access/egress and as necessary to protect personnel from overhead work.
 - .10 Contractor shall provide OSHA approved pedestrian walking bridges as required to protect against overhead hazards.
 - .11 Contractor's safety representative shall perform a daily safety inspection walk through to ensure that all requirements of the OSHA Standards, Fire Protection Standards and Safe Work Practices are being complied with and/or corrected. The responsibility of the Contractor is to provide a safe and healthy work environment for construction personnel, Owner's personnel and representative, and the public.
 - .12 Upon written receipt of safety concerns and/or issues, the Contractor shall respond in writing addressing how the safety concerns or issues were resolved. The Owner shall be copied on all safety-related correspondence.
 - .13 The Contractor's response and compliance with correction of deficiencies noted in the safety concerns notice issued by the Authority having jurisdiction is mandatory. Failure to comply will be grounds for withholding of progress payments until the conditions are acceptable to OSHA or Authority having local jurisdiction.
 - .14 The Contractor shall provide, when requested by the Architect a copy of all licenses (welding, asbestos, etc.) as required by applicable agencies.
 - .15 The Contractor shall provide, when requested by the Architect a copy of all testing and inspection reports.
 - .16 Contractor shall have all required personal protective equipment and materials available for use by each employee as required by Federal, State and Local guidelines.
 - .17 Contractor shall supply proper equipment and crew sizes as necessary to safely complete the work.
 - .18 Notify Owner immediately upon arrival of OSHA to the site.
 - .19 Contractor shall submit to the Owner all Material Safety Data Sheets and shall cooperate in the posting of all required notifications relative to the use of hazardous substances on the property. Contractor shall comply with New Jersey Law regarding the use or storage of hazardous substances in Schools.
 - .20 For the safety of occupants, staff, and the public, the steel erection must be scheduled and coordinated with the Owner and Architect. Swinging of steel and crane boom over occupied space will not be allowed. Steel contractor shall provide additional barricades and fencing around his crane and steel at all times.
 - .21 The speed limit within the project property is 5 MPH. Contractor employees operating vehicles in excess of the speed limit or in any otherwise unsafe manner will be directed to leave the site and will not be permitted to return.
 - .22 Contractor shall submit an acceptable OSHA compliant site specific written safety plan to the Owner for the project files within fourteen (14) days from the Notice to Proceed or prior to mobilizing on site, whichever comes first.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction as well as any other real or personal property of the Owner; and

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- 4 The Contractor shall provide a third-party Insurance Safety Site Inspection Report monthly and remedy all issues promptly.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss and further, the Contractor shall give immediate notice to the Owner and Architect of the onset of any hazardous conditions at the site which could require the implementation of safety programs or measures by personnel on site.

§ 10.2.2.1 Contractor shall comply with all regulations required by the Federal Occupational Safety and Health Act (OSHA).

§ 10.2.2.2 The Contractor shall conform to all applicable New Jersey Department of Environmental Protection regulations.

§ 10.2.2.3 Contractor shall comply with Construction and Environmental Standards contained in Federal and State Regulations and other applicable laws.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities consistent with applicable laws, statutes, ordinances, codes, rules and regulations and lawful orders of public authorities, and prevailing industry practice.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods not prohibited by the Contract Documents are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.2.9 The Contractor shall provide and maintain in good operating condition suitable and adequate fire protection equipment and shall comply with all reasonable recommendations regarding fire protection made by the representatives of the fire insurance company carrying insurance on the Work or by the local fire chief or fire marshal. The area within the site limits under the Contractor's control shall be kept orderly and clean, and all combustible rubbish shall be promptly removed from the site. Contractor will comply with all reasonable requests of the Owner with respect to additional security and protections required for work interfacing with Owner's operations. Safety is of

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utmost importance on this project and all issues relative to safety and protection of the building and its occupants will be treated as emergency needs and will not be subject to the seven-day notice requirements of Article 14.

§ 10.2.10 The Contractor shall remove snow and/or ice, which may accumulate on the site within areas under his/her control which might result in damage or delay.

§ 10.2.11 The Contractor shall take all precautions necessary to prevent loss and/or damage caused by vandalism, theft, burglary, pilferage, or unexplained disappearance of property of the Owner and Contractor, whether or not forming part of the Work, located within those areas of the Project to which the Contractor has access. Whenever unattended, including nights and weekends, mobile equipment and operable machinery shall be kept locked and made inoperable and immovable.

§ 10.2.12 Neither the Owner or Architect shall be responsible for providing a safe working place for the Contractor, the Subcontractors or their employees, or any individual responsible to them for the work.

§ 10.2.13 The Contractor shall conform to requirements of OSHA, the Construction Safety Code of the State Department of Labor, those of the AGC Manual, and any other governing body having jurisdiction. The requirements of the New Jersey and Local Building Construction Codes shall apply where they are equal to or more restrictive than the requirements of the Federal Act.

§ 10.2.14 When all or a portion of the Work is suspended for any reason, the Contractor shall securely fasten down all coverings and protect the Work as necessary from damage or any cause.

§ 10.2.15 The Contractor shall promptly report in writing to the Owner and Architect all accidents arising out of or in connection with the Work which caused death, personal injury or property damage giving full details and statements of any witnesses. In addition, if death, serious personal injury or serious property damage is caused, the accident shall be reported immediately by telephone or messenger to the Owner and Architect.

§ 10.2.16 Contractor is required to follow and enforce the work rules set forth below. Failure to comply with or enforce any of these rules will be grounds for suspension and/or termination of their Contract:

- .1 No use of alcoholic beverages prior to or during working hours. Anyone found impaired will be removed from the Project site.
- .2 No use of illegal drugs or prescription medications which could induce drowsiness or otherwise impair perception or performance. Use of illegal drugs may result in prosecution to the fullest extent of the law. Any warning associated with use of prescription drugs must be complied with, particularly warning against operation of machinery and equipment.
- .3 Horseplay or rough-housing will not be allowed.
- .4 Sexual, racial, or ethnic harassment, or similar conduct will not be tolerated.
- .5 All employees shall use proper sanitation habits including use of toilet and trash facilities.
- .6 All employees shall dress in clothing that identifies their company and is appropriate for the work they are to perform. All personnel are to wear hardhats, safety shoes, glasses, gloves, masks or respirators, noise protection devices, and other protective clothing and equipment as required by OSHA standards.
- .7 All equipment is to be properly stored and/or secured at the end of the workday or if it is to remain idle for greater than one hour.
- .8 All personnel are to be made aware of the availability of Material Safety Data Sheets for materials used at the Project site. This information is available from the Contractor using the product. The Contractor shall maintain a copy of all MSDS at the construction site for all personnel to review.
- .9 Enforce a full time no smoking or alcohol use policy for all employees during the entire course of the project. Any worker found violating these restrictions, or being belligerent, will be subject to removal from the site. (Contractors shall post required signs).

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or

polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

(Paragraph deleted)

§ 10.4 Emergencies

(Paragraph deleted)

§ 10.4.1 In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

§ 10.4.2 – Emergency/Safety Plan

1. All parties involved in the construction process should be aware of emergency services that may be required during the construction process.
2. Contractor shall establish the site-specific Emergency Action Plan and, after approval by the local authorities, shall display at site trailers and various locations at the site.
3. In case of an accident, emergency, or injury on the job site, the Contractor shall immediately follow the Site-Specific Emergency Action Plan. Following the incident, the Contractor shall submit to the Owner a complete written accident report detailing the circumstances which caused the accident, extent of injuries, damage to the building, time of accident, corrective action required, etc.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 All insurance provisions shall be confirmed with Owner's Insurance Agent. Contractor shall, without in any way altering Contractor's liability under the Contract or applicable law, obtain, pay for and maintain insurance for the

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coverages and amounts of coverage not less than those set forth below in the Schedule of Insurance Coverages and shall provide to Owner certificates issued by insurance companies satisfactory to Owner to evidence such coverage no later than seven days of the date of the execution of this Contract and prior to any personnel or equipment being brought onto and/or before any work commences at the job site. The coverage afforded under any insurance obtained pursuant to this paragraph shall be primary and non-contributory to any valid and collectible insurance carried separately by any of the indemnities. Such certificates shall provide that there shall be no cancellation, non-renewal or material change of such coverage without thirty (30) days prior written notice to Owner. In the event of any failure by Contractor to comply with the provisions of this Paragraph 11.1, Owner may, at its option, on notice to Contractor, suspend the Contract for cause until there is full compliance with this Paragraph 11.1 and/or terminate the Contract for cause. Alternatively, Owner may purchase such insurance at Contractor's expense, provided that Owner shall have no obligation to do so, and if Owner shall do so, Contractor shall not be relieved of or excused from the obligation to obtain and maintain such insurance amounts and coverages. Contractor shall provide the Owner and Architect a copy of any and all applicable insurance policies.

- .1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless all parties or persons described in Section 3.18.

§ 11.1.2 The Contractor shall require all Subcontractors to carry similar insurance coverages and limits of liability as required under this Article 11, adjusted to the nature of Subcontractors' operations and submit same through Contractor to Owner and Architect for approval, before any personnel or equipment is brought onto the site and/or before any work commences.

§ 11.1.3 In the event Contractor fails to obtain the required certificates of insurance from the Subcontractor and a claim is made or suffered, the Contractor shall indemnify, defend and hold harmless all parties or persons described in Section 3.18 from any and all claims for which the required insurance would have provided coverage. This indemnity obligation is in addition to any other indemnity obligation provided in the Contract.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) all parties or persons described in Section 3.18 as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner and Architect as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.2 Schedule of Insurance Coverages

§ 11.2.1

- .1 **Commercial General Liability** of not less than \$5,000,000, naming all parties or persons described in Section 3.18 as additional insureds on a primary and non-contributory basis.
- .2 **Worker's Compensation** in the Statutory amount together with Employer's Liability Insurance of \$1,000,000 for each accident.
- .3 **Comprehensive Automobile Liability Insurance** of \$1,000,000, naming all parties or persons described in Section 3.18 as additional insureds on a primary and non-contributory basis.
- .4 **Sexual Harassment** of not less than \$1,000,000, naming all parties or persons described in Section 3.18 as additional insureds on a primary and non-contributory basis.

§ 11.2.2 Contractors Pollution Liability Insurance including limits of \$1,000,000 each Incident/\$2,000,000 aggregate and including full coverage for mold, legionella, asbestos, and lead. All parties or persons described in Section 3.18 are to be included as additional insureds on a primary and non-contributory basis.

§ 11.2.3 Builder's Risk Insurance Contractor shall provide for all risk of physical loss or damage to the property described hereunder in an amount equal to the Total Project Value and furnished under Construction Contracts for the School Facilities Project; excepting excavations, foundations and other structures customarily excluded by such insurance. The Policy shall name all parties or persons described in Section 3.18 as loss payee as their interests may appear on a primary and non-contributory basis. The Builders Risk Policy is to include coverage for the perils of Earthquake, Flood, Full Windstorm, Equipment Breakdown and Theft (excluding employee theft), contain an endorsement allowing permission to occupy and include coverage for both transit and offsite storage. The policy is also to include all Contractors, Subcontractors and Sub-subcontractors as well as all parties or persons described in Section 3.18 as additional insureds on a primary and non-contributory basis. The contractor and all subcontractors are responsible for all policy deductibles and uninsured or underinsured losses.

§ 11.3 Bonds, Performance and Payment

§ 11.3.1 Contractor shall furnish a performance bond and labor and material payment bond meeting all statutory requirements of the State of New Jersey in form and substance satisfactory to the Owner and without limitation complying with the following specific requirements:

- .1 Except as otherwise required by statute, the form and substance of such bonds shall be satisfactory to the Owner in the Owner's sole judgment;
- .2 The bonds shall be executed by a responsible surety licensed in the State of New Jersey Best's rating of no less than A-/X and shall remain in effect for a period of not less than two years following the date of final acceptance or the time required to resolve any items of incomplete or inadequate work and the payment of any disputed amounts, whichever time period is longer;
- .3 The performance bond and the labor and material payment bond shall each be in an amount equal to the Contract Sum;
- .4 The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of his power of attorney indicating the monetary limit of such power;
- .5 Any bond under this Paragraph 11.3.1 must display the surety's bond number. A rider including the following provisions shall be attached to each bond:
 - .a Surety hereby agrees that it consents to and waives notice of any addition, alteration, omission, change or other modification of the Contract Documents which singularly or in the aggregate equals or is less than 20% of the Contract Sum. Except as to increases in the Contract Sum in excess of the percentage set forth in this clause 11.3.1.5.a. Any other alterations, change, extension of time or other modification of the Contract Documents or a forbearance on the part of either the Owner or the Contractor to the other shall not release the surety of its obligations hereunder and notice to surety of such matter is hereby waived.
 - .b Surety further agrees that in the event of any default by the Owner in the performance of the Owner's obligations to the Contractor under the Contract, the Contractor or surety shall cause written notice of such default (specifying said default in writing) to be given to the Owner, and the Owner shall have 30 days after receipt of such notice within which to cure such default of such additional reasonable time as may be required if the nature of such default is such that it cannot be cured within 30 days. Such notice of default shall be sent by certified or registered U.S. mail, return receipt requested, first class postage prepaid to the Owner.

§ 11.4 Maintenance of Insurance

§ 11.4.1 If any of the foregoing insurance coverages are required to remain in force after final payment, including, but not limited to coverage for completed operations, an additional certificate evidencing continuation of such coverage shall be submitted to the Architect with the Final Application for Payment.

§ 11.4.2 In no event shall any failure of the Owner to receive certificates of policies required under paragraph 11.1 or to demand receipt of such certificates prior to the Contractor commencing Work be construed as a waiver of the Owner or the Architect of the Contractor's obligations to obtain insurance pursuant to this Article 11. The obligation to procure and maintain any insurance required by this Article 11 is a separate responsibility of the Contractor and independent of the duty to furnish a certificate of such insurance policies.

§ 11.4.3 If the Contractor fails to purchase and maintain or require to be purchased and maintained any insurance required under this Article 11, the Owner may, but shall not be obligated to, upon five days written notice to the Contractor, purchase such insurance on behalf of the Contractor and shall be entitled to deduct said cost from the Contractor's Contract Sum.

(Paragraphs deleted)

§ 11.4.4 When any required insurance due to the attainment of a normal expiration date or renewal date shall expire the Contractor shall supply the Owner with certificates of insurance and amendatory riders or endorsements that clearly evidence the continuation of all coverage in the same manner, limits of protection and scope as was provided by the previous policy. In the event any renewal or replacement policy for whatever reason obtained or required is written by a carrier other than that with whom the coverage was previously placed, or the subsequent policy differs in any way from the previous policy, the Contractor shall also furnish replacement policy unless the Owner provides the Contractor with prior written consent to submit only a certificate of insurance for any such policy. All renewal and or

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replacement policies shall be in form and substance satisfactory to the Owner and written by carriers acceptable to the Owner.

§ 11.4.5 The Contractor shall cause each subcontractor to (1) procure insurance in the amounts set for in Paragraph 11.2 and (2) name the indemnities under Paragraph 3.18 as additional insureds under the subcontractor's comprehensive general liability policy. The additional insured endorsement included on the subcontractor's comprehensive general liability policy shall state that coverage is afforded the additional insureds with respect to claims arising out of operations performed by or on behalf of the Contractor. If the additional insureds have other insurance, which is applicable to the claims, such other insurance shall be on an excess or contingent basis. The amount of the insurance liability under this insurance policy shall not be reduced by the existence of such other insurance.

§ 11.4.6 Property insurance provided by the Owner shall not cover any tools, apparatus, machinery, scaffolding, hoists, forms, staging, shoring, or other similar items commonly referred to as construction equipment which may be on the site and the capital value of which is not included in the work. The Contractor shall make its own arrangements for any insurance it might require on such construction requirement. Any such policy obtained by the Contractor under this Paragraph 11.4.6 shall include a waiver of subrogation.

§ 11.4.7 The Contractor may carry whatever additional insurance he/she deems necessary to protect him/herself against hazards not covered for theft, collapse, water damage, materials and equipment stored on the site, and for materials and equipment stored off site, and against loss of owned or rented capital equipment and tools owned by mechanics or any tools, equipment, scaffolding, staging, towers and forms owned or rented by the Contractor, the capital value of which is not included in the cost of the Work.

§ 11.4.8 All insurance coverage procured by the Contractor shall be provided by insurance companies having policy holder ratings no lower than "A-" and financial rating no lower than, "X" in the Best's Insurance guide, latest edition in effect as the date of the Contract and subsequently in effect at the time of the renewal of the policies required by the Contract Documents which coverage shall be maintained for no less than two (2) years following Substantial Completion.

§ 11.4.9 If the Owner or the Contractor is damaged by the failure of the other party to purchase or maintain insurance required under Article 11, then the party who failed to purchase or maintain the insurance shall bear all reasonable costs (including attorney's fees and court and settlement costs) properly attributable thereto.

§ 11.4.10 The Contractors must remove all "X, C & U" exclusions from their policies.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense. If prior to the date of Substantial Completion, the Contractor, a subcontractor or anyone for whom either is responsible, uses or damages any portion of the Work or existing conditions, including without

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limitation, mechanical, electrical, plumbing and other building systems, machinery, equipment or other mechanical device, the Contractor shall cause each such item to be restored to "like new condition" at no expense to the Owner.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within two (2) years after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the two-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

- .1** The obligations under Paragraph 12.2 shall cover any repairs and replacement to any part of the Work or other property caused by the defective Work.
- .2** Upon completion of any work under or pursuant to this Paragraph 12.2., the two-year correction period in connection with the work requiring correction shall be renewed and recommenced.

§ 12.2.2.2 The two-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The two-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the two-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

§ 12.3.1 If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be affected whether or not final payment has been made. This Subparagraph relates exclusively to the knowing acceptance of nonconforming work by the Owner. It has no applicability to work accepted by the Owner or Architect without the knowledge that such work fails to conform to the requirements of the Contract Documents.

§ 12.3.2 The Contractor and its Surety guaranty to make good, repair and/or correct, at no cost or expense to the Owner, any and all latent defects hereafter discovered, provided only that notice in writing, shall be given by the Owner to the Contractor within two years of the discovery of such defects.

- .1** This obligation shall survive the termination of any or all other obligation or obligations under the contract Documents and it is agreed by the Contractor and its Surety that in the event the Owner is required to bring suit under this provision against the Contractor or its Surety to enforce this obligation, the contractor and its Surety hereby waive any defense of the status of limitations.

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ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of New Jersey.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense. The Contractor also agrees that the cost of testing services required for the convenience of the Contractor in his/her scheduling and performance of the Work and the cost of testing services related to remedial operations performed to correct deficiencies in the Work shall be borne by the Contractor.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

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User Notes:

§ 13.5 Interest

§ 13.5.1 The Contractor shall not be entitled to any payment of interest for any reason, action or inaction by the Architect or the Owner.

§ 13.5.2 Any payments withheld for time delays, faulty materials, or workmanship, shall not bear interest for period of delay or non-acceptance.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract in the manner provided in Subparagraph 14.1.2 if repeated suspensions, delays or interruptions by the Owner as described in Paragraph 14.3 constitute in the aggregate more than 100% of the total number of days scheduled for completion or 120 days in any 365-day period, whichever is less, or if all the Work is entirely stopped for a continuous period of 45 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents.

§ 14.1.2 If one of the above reasons exist, the Contractor may, upon fourteen (14) days written notice to the Owner and Architect, terminate the Contract, unless this reason is cured prior to the expiration of the notice, and recover from the Owner payment of work properly executed in accordance with the Contract Documents (the basis for such payment shall be as provided in the Contract) and for payment for cost directly related to work thereafter performed by Contractor in terminating such work including reasonable demobilization and cancellation charges provided said work is authorized in advance by Architect and Owner.

§ 14.1.3 The Owner shall not be responsible for damages for loss of anticipated profits on work not performed on account of any termination described in Subparagraph 14.1.1 and 14.1.2.

§ 14.1.4 If the Work is stopped for a period of 45 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials and/or equipment;
- .2 fails to make prompt payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority;
- .4 disregards the instructions of Architect or Owner (when such instructions are based on the requirements of the Contract Documents);
- .5 is adjudged bankrupt or insolvent, or makes a general assignment for the benefit of Contractor's creditors, or a trustee or a receiver is appointed for Contractor or for any of its property, or files a petition to take advantage of any debtor's act, or to recognize under bankruptcy or similar laws;
- .6 breaches any warranty made by the Contractor under or pursuant to the Contract Documents;
- .7 fails to furnish the Owner with assurances satisfactory to the Owner evidencing the Contractor's ability to complete the Work in compliance with the requirements of the Contract Documents;
- .8 fails after the commencement of the Work to proceed continuously with the construction and

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- .9 completion of the work for more than 10 days except as permitted under the Contract Documents; or otherwise does not fully comply with the Contract Documents.

§ 14.2.2 When

(Paragraphs deleted)

the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.3 If the costs of finishing the Work, including compensation for the Architect's and any other Consultant's services and expenses made necessary thereby, and other costs and expenses identified hereinafter, exceed the unpaid balance of the Contract Sum, the Contractor and its Surety shall pay the difference to the Owner upon demand. The costs of finishing the Work include, without limitation, all reasonable attorney's fees, additional title costs, insurance, additional interest because of any delay in completing the Work, and all other direct and indirect consequential costs, including, without limitation, Liquidated Damages for untimely completion as specified in the Contract Documents, incurred by the Owner by reason of, or arising from, or relating to the termination of the Contractor as stated herein.

(Paragraph deleted)

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor shall be entitled to Owner payment for Work performed as of the date of termination in accordance with the contract Documents. The Contractor shall, as a condition of receiving the payments referred to herein, execute and deliver all such papers, turn over all plans, documents and files of whatsoever nature required by the Owner, and take all such steps, including the legal assignment of its contractual rights, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Contractor. The Contractor warrants that it will enter into no subcontracts or other agreements that would adversely impact the Owner's rights or increase the Owner's obligations under this paragraph. In no event shall the Owner be liable to the Contractor for lost or anticipated profits or consequential damages, or for any amount in excess of the compensation due to the Contractor in accord with the Contract Documents for the Work performed as of the date of termination. The warranty and indemnity obligations of the Contractor and Surety shall survive and continue, notwithstanding any termination pursuant to this paragraph, with respect to the Work performed as of the date of termination.

§ 14.4.4 If Owner terminates the Contract for cause pursuant to Paragraph 14.2 and it is subsequently determined that the Owner was not authorized to terminate the Contract as provided in Paragraph 14.2, the Owner's termination shall be treated as a termination for convenience under this Paragraph 14.4 and the rights and obligations of the parties shall be the same as if the Owner has issued a notice of termination to the Contractor as provided in this Paragraph 14.4.

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ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

§ 15.1.2.1 Issues involving the applicable statute of limitations shall be governed by New Jersey Law.

§ 15.1.2.2 No act or omission by the Owner or Architect, or by anyone acting on behalf of either shall be deemed or construed as a waiver or limitation of any right or remedy under the Contract Documents, or as an admission, acceptance, or approval with respect to any breach in the Contract for Construction or failure to comply with the Contract Documents by the Contractor, unless the Owner expressly agrees in writing.

§ 15.1.2.3 The Owner's exercise or failure to exercise any rights, claims or remedies it may have arising out of or relating to the Contract Documents shall not release, prejudice, or discharge the Owner's other rights and remedies, nor shall it give rise to any right, claim, remedy or defense by any other person, including the Contractor, its Surety, any Subcontractor, or any other person or entity.

§ 15.1.2.4 Whenever possible, each provision of the Contract Documents shall be interpreted in a manner as to be effective and valid under applicable law. If, however, any provision of the Contract Documents or portion thereof is prohibited or found invalid by law, only such invalid provision or portion thereof shall be ineffective and shall not invalidate or affect the remaining provision of the Contract Documents or valid portions of such provision, which shall be deemed severable. Further, if any provision of this Contract is deemed inconsistent with applicable law, applicable law shall control.

§ 15.1.2.5 Contractor shall promptly pay to Owner all costs and reasonable attorney's fees incurred in connection with any action or proceeding in which Owner prevails, based on a breach of the Contract or other dispute arising out of or in connection with the Contract.

§ 15.1.2.6 In the event of the appointment of a trustee and/or receiver or any similar occurrence affecting the management of the account of the Contractor pertaining to the Work, it shall be the obligation of the Contractor, its representatives, receivers, sureties, or successors in interest to continue the progress of the Work without delay and specifically to make timely payment to Subcontractors and Suppliers of all amounts that are lawfully due them and to provide the Owner and all Subcontractors and Suppliers whose work may be affected with timely notice of the status of receivership, bankruptcy, etc., and the status of their individual accounts.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within five days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.3.3 Injury or Damage to Person or Property. If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding five days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

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§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given to the Owner and Architect before proceeding to execute the Work and within five days after the occurrence of the event giving rise to such Claim for increase in the Construct Sum. The foregoing written notice shall contain a written statement from the Contractor setting forth in detail the nature and cause of the Claim and an itemized statement of the increase requested. No such written notice shall form the basis of an increase to the Contract Sum unless and until such increase has been authorized by a written Change Order executed and issued according to the terms and conditions set forth herein. The Contractor hereby acknowledges that the Contractor shall not have any right to, and the Owner will not consider any requests for an increase in the Contract Sum that is not submitted in compliance with the foregoing requirements. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided herein shall be given. Said notice shall itemize all claims and shall contain sufficient detail and substantiating data to permit evaluation of same by the Owner and Architect. No such claim shall be valid unless so made. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary. Any change in the Contract Sum resulting from such claim shall be authorized only by Change Order or Construction Change Directive, as the case may be. All required notices for additional costs shall be made in writing.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

(Paragraphs deleted)

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision

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Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.5.1 All claims and disputes and other matters in question between the Contractor and the Owner arising out of or relating to the Contract Documents or a breach thereof with regard to the Initial Decision Maker's decision, shall be decided through suit in New Jersey Superior Court and Contractor consents to the jurisdiction of the New Jersey Superior Court. The Contractor shall carry on all work and maintain its progress during such suit and the Owner shall continue to make payments not related to the dispute of the Contractor in accordance with Contract Documents.

§ 15.2.6 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

(Paragraph deleted)

§ 15.2.7 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

(Paragraphs deleted)

ARTICLE 16 NEW JERSEY REQUIREMENTS FOR PUBLIC WORK

(Paragraph deleted)

§ 16.1 Overtime

The Contractor or any subcontractor shall not employ any mechanic, worker or laborer engaged in the performance of the Work more than 8 hours in any one day in accordance with and subject to the exceptions named in Revised Statutes of New Jersey, Title 34, Chapter 10 and any and all revised statutes thereof.

(Paragraph deleted)

§ 16.2 Prevailing Wage

(Paragraph deleted)

§ 16.2.1 Pursuant to Revised Statutes of New Jersey, Title 34, Chapter 11, Article 28 as amended, wages for all laborers, workers and mechanics employed by the Contractor or any Subcontractor for the Work shall not be less than the prevailing wages for work of a similar nature in the vicinity of the Project Site as fixed by the Commissioner of Labor and Industry and made a part of Division 01 - Conditions of the Contract. Contractors are referred to Section 010001-PREVAILING WAGE RATES for wage determination.

(Paragraph deleted)

§ 16.2.2 The Contractor and Subcontractors shall do the following:

- .1 Pay to all workers engaged in the performance of services directly upon the Work, the prevailing rate of wages specified in the Contract.
- .2 Keep an accurate record showing the name, craft or trade and actual hourly rate of wages paid to each worker employed by him in connection with the Work. Records shall be preserved two years from the date of payment.
- .3 Post the prevailing wage rates for each craft and classification involved, as determined by the Commissioner of Labor and Industry, including the effective date of any changes thereof, in prominent

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and easily accessible places at the site of the Work and at such place or places as are used by the employer to pay workers their wages.

- .4 Before final payment, file written statements certifying to the amounts then due and owing to any and all workers for wages due on account of the Work. The statements shall set forth the names of the persons whose wages are unpaid and the amount due to each. The statement shall be verified by the oath of the Contractor or Subcontractor, as the case may be.

§ 16.3 Business Registration of Public Contractors

(Paragraph deleted)

§ 16.3.1 Pursuant to P.L. 2004, c.57, bidders shall include proof of its own business registration and proofs of business registration of those subcontractors required to be listed in the bidder's submission (i.e., "named subcontractors.") The proof of business registration shall be provided at the time the bid or proposal is officially received and opened by the contracting agency. If there are no subcontractors on a job, the Contractor must certify to that effect.

(Paragraphs deleted)

§ 16.3.2 After award of the contract, the Contractor shall obtain proof of business registration of subcontractors and suppliers through all tiers of a contract, when the value of the goods or services to be provided by the subcontractor or supplier exceeds 15% of the contracting agency's bid threshold.

(Paragraph deleted)

§ 16.3.3 The Contractor shall provide written notice to its subcontractors and suppliers of the responsibility to submit proof of business registration to the Contractor. The requirement of proof of business registration extends down through all levels (tiers) of the project.

§ 16.3.4 Before final payment on the Contract is made by the contracting agency, the Contractor shall submit an accurate list and the proof of business registration of each subcontractor or supplier used in the fulfillment of the Contract or shall attest that no subcontractors were used.

§ 16.3.5 A contractor or a contractor with a subcontractor that has entered into a contract with a contracting agency, and each of their affiliates, shall collect and remit to the Director of the Division of Taxation in the Department of the Treasury the use tax due pursuant to the "Sales and Use Tax Act," P.L.1966, c.30 (C.54:32B-1 et seq.) on all their sales of tangible personal property delivered into this State.

§ 16.3.6 A business organization that fails to provide a copy of a business registration as required pursuant to Section 1 of P.L.2001, c.134 (C.52:32-44 et al.) or subsection e. or f. of Section 92 of P.L.1977, c.110 (C.5:12-92), or that provides false business registration information under the requirements of either of those sections, shall be liable for a penalty of \$25 for each day of violation, not to exceed \$50,000 for each business registration copy not properly provided under a contract with a contracting agency."

§ 16.4 Workers and Community Right to Know Act

§ 16.4.1 Contractors shall be required to submit copies of all Material Safety Data Sheets to the Owner and shall cooperate in the posting of all required notifications relative to the use of hazardous substances on Owner's property. Contractor shall comply with New Jersey Law regarding the use or storage of hazardous substances in Schools and as follows:

§ 16.4.2 New Jersey Administrative Code 8:59 - 6.5

.1 Subcontractors:

- .a When a public or private subcontractor produces, uses or stores hazardous substances at a public employer's facility in such a way that the employees of the public employer are or may be exposed to the hazardous substances, the public employer shall find out the identity of the hazardous substances and provide health hazard and protective procedure information about the substances to exposed and potentially exposed employees during the annual education and training program or upon request of an employee or employee representative, whichever occurs sooner.
- .b If not part of the annual training program, such information may be provided to exposed and potentially exposed employees in writing. The public employer shall provide exposed and potentially exposed employees with appropriate hazardous substance fact sheets or Material

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Safety Data Sheets, if requested.

- .c Contractor shall retain a copy of the Material Safety Data Sheet and Hazardous Substance Fact Sheets on the job site.

§ 16.5 Meghan's Law

During the performance of this contract, neither the Contractor nor any Subcontractor, where applicable, shall knowingly allow any employee registered pursuant to N.J.S.A. 2C:7-1, et seq. "Meghan's Law", as a Tier 3 offender (sex offenders determined to pose a relatively high risk of re-offense") or a Tier 2 offender (sex offenders determined to pose a moderate risk of re-offense), upon the Owner's property or the Project site.

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1 SECTION 010002 - PREVAILING WAGE RATES

2
3
4 NEW JERSEY DEPARTMENT OF LABOR & WORKFORCE DEVELOPMENT PREVAILING
5 WAGE RATES:

6
7 The Prevailing Wage Rate Determination by the New Jersey Department of Labor and Workforce
8 Development pursuant to Chapter 150 of the New Jersey Laws of 1963.

9
10 **Website:**

11
12 https://www.nj.gov/labor/wagehour/wagehour_index.html

13
14 **Wage & Hour - General Information**

15
16 Tel. (609) 292-2305

17 Tel. (609) 292-2337

18 Fax (609) 695-1174

19 **Public Contracts** – For information about prevailing wage rates on public works projects:

20 Tel. (609) 292-2259

21 Fax (609) 695-1174

22 **Contractor Registration** – For information about registering with the Department of Labor and
23 Workforce Development in order to bid on or engage in the performance of any public works
24 project:

25 Tel. (609) 292-9464

26 Fax (609) 633-8591

27
28 The Prevailing Wage Rates in the locality is for each craft or trade or classification of all workers
29 needed to perform the contract during the anticipated term thereof are hereby made a part of each
30 Contract to be performed under this Project Manual.

31
32 It is the responsibility of the Contractor and each Subcontractor to use the current Prevailing Wage
33 Rates when bidding this Project and, if awarded the Contract, to pay their employees the minimum
34 amounts mandated by such Prevailing Wage Rate Determination and to submit all certified payroll
35 records to the Owner in accordance with the regulations.

36 In the event it is found that any worker employed by the contractor, or any subcontractor covered
37 by said contract, has been paid a rate of wages less than the prevailing wages required to be paid
38 by such contract, the public body, the lessee to whom the public body is leasing a property or
39 premises or the lessor from whom the public body is leasing or will be leasing a property or
40 premises may terminate the contractor's or subcontractor's right to proceed with the work, or such
41 part of the work as to which there has been a failure to pay required wages and to prosecute the
42 work to completion or otherwise.

43
44 END OF SECTION 010002

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Work performed by Owner.
2. Contractor's use of site and premises.
3. Coordination with occupants.
4. Work restrictions.
5. Specification and Drawing conventions.
6. Warranty
7. Miscellaneous provisions.

B. Related Requirements:

1. Section 000100 "Advertisement" for project information and work covered by the contract documents.
2. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.
3. Section 017300 "Execution" for coordination of Owner-installed products.

- C. All specification divisions and drawings listed are part of the Contract Documents. It is ultimately the responsibility of the Contractor and their subcontractors to review all the Contract Documents and all field conditions to determine the full extent of work for this project.

- D. The Contractor shall provide all labor, materials, equipment and services for the complete and proper installation and operation of the work as indicated, required or implied by the Contract Documents.

- E. The submission of a proposal by the Contractor will be considered an indication that a thorough review of the conditions, materials, and the Contract Documents have been made by the Contractor and their subcontractors, and the results of such investigations have been included in their proposal and accepted.

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1.3 WORK PERFORMED BY OWNER

- A. Cooperate fully with Owner, so work may be carried out smoothly, without interfering with or delaying Work under this Contract or work by Owner. Coordinate the Work of this Contract with work performed by Owner.
- B. Subsequent Work: Owner will perform the following additional work at site after Substantial Completion. Completion of that work will depend on successful completion of preparatory Work under this Contract.
 - 1. Installation of “Owner-furnished/Owner-installed” (OFOI) products noted on the drawings.

1.4 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Restricted Use of Site: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- B. Limits on Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Driveways, Walkways and Entrances: Keep driveways parking, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.
- D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.
- E. Partial Owner Occupancy: Owner will occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated.
 - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.

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2. Provide not less than 72 hours' notice to Owner and Architect of activities that will affect Owner's operations.

1.5 WORK RESTRICTIONS

- A. Comply with restrictions on construction operations.
 1. Comply with limitations on use of public streets, work on public streets, rights of way, and other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work to between 7:00 a.m. to 3:30 p.m., Monday through Friday, unless otherwise indicated. Work hours may be modified to meet Project requirements if approved by Owner and authorities having jurisdiction.
 1. Weekend Hours: 72 hours notice and Owner approval.
 2. Early Morning/Evening Hours: 7:00 a.m. to 7:00 p.m. or as per regulations by authorities having jurisdiction for restrictions on noisy work.
 3. Hours for Utility Shutdowns: 72 hours notice and Owner approval.
 4. Contractors shall clean the work areas on a daily basis and properly secure all work areas in a safe and professional manner to protect the health, safety and welfare of the general public and the building occupants.
 - a. Under no condition shall an open sitework trench be left overnight. All excavations shall be opened and backfilled (in proper lifts and compacted) the same day.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging for temporary utility services according to requirements indicated:
 1. Notify Architect and Owner not less than three days in advance of proposed utility interruptions.
 2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. Smoking and Controlled Substance Restrictions: Use of tobacco products, alcoholic beverages, and other controlled substances on Owner's property is not permitted.
- E. Employee Identification: Contractor employees shall be required to have company shirts clearly displayed at all times that indicating their company of employment. Anyone on site without proper credentials visibly displayed at all times shall be asked to leave the project site.

1.6 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

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1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 2. Text Color: Text used in the Specifications, including units of measure, manufacturer and product names, and other text may appear in multiple colors or underlined as part of a hyperlink; no emphasis is implied by text with these characteristics.
 3. Hypertext: Text used in the Specifications may contain hyperlinks. Hyperlinks may allow for access to linked information that is not residing in the Specifications. Unless otherwise indicated, linked information is not part of the Contract Documents.
 4. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 00 Contracting Requirements: General provisions of the Contract, including General and Supplementary Conditions, apply to all Sections of the Specifications.
- C. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- D. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 2. Abbreviations: Materials and products are identified by abbreviations and scheduled in Section 000030 - Abbreviations of the Project Manual and/or scheduled on Drawings.

1.7 WARRANTY

- A. Equipment and material warranties, as described in the various sections of the specifications, will only take effect on the date indicated in the Certificate of Substantial Completion issued by the Architect. The ordering, delivery, installation or start-up of equipment and materials, or a manufacturer's self-imposed warranty start date, shall not determine the beginning of a warranty period.
- B. All equipment and materials provided shall be warrantied for a minimum of two-years or as indicated in individual sections of the specifications, whichever is greater, on all parts and labor.

1.8 MISCELLANEOUS PROVISIONS

- A. The Contractor shall not perform any work or provide any services materials or supplies until an executed Notice to Proceed and an approved Purchase Order has been received from the Owner.

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PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
- B. Types of allowances include the following:
 - 1. Contingency allowances.
- C. Related Requirements:
 - 1. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.

1.3 DEFINITIONS

- A. Allowance: A quantity of work or dollar amount included in the Contract, established in lieu of additional requirements, used to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.

1.4 ACTION SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances on forms in Section 012610 "Prime Contractor Change Order Request Summary" and Section 012620 "Subcontractor Request Summary."

1.5 INFORMATIONAL SUBMITTALS

- A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.

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- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.6 CONTINGENCY ALLOWANCES

- A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.
- B. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit.
- C. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

- A. Refer to Section 002000 – Form of Bid, for Schedule of Allowances.

END OF SECTION 012100

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Document 002600 "Procurement Substitution Procedures" for requirements for substitution requests prior to award of Contract.
 - 2. Section 012100 "Allowances" for products selected under an allowance.
 - 3. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.
 - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 ACTION SUBMITTALS

- A. Substitution Requests: Submit pdf documentation identifying product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use Section 012501 – Substitution Request provided in Project Manual.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

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- a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
 - b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project, from current edition of the New Jersey Uniform Construction Code.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.7 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

- 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

- a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
- b. Substitution request is fully documented and properly submitted.
- c. Requested substitution will not adversely affect Contractor's construction schedule.
- d. Requested substitution has received necessary approvals of authorities having jurisdiction.
- e. Requested substitution is compatible with other portions of the Work.
- f. Requested substitution has been coordinated with other portions of the Work.
- g. Requested substitution provides specified warranty.

- B. Substitutions for Convenience: Architect will consider requests for substitution if received within 30 days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Architect.

- 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

- a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.

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- b. Requested substitution does not require extensive revisions to the Contract Documents.
- c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
- d. Substitution request is fully documented and properly submitted.
- e. Requested substitution will not adversely affect Contractor's construction schedule.
- f. Requested substitution has received necessary approvals of authorities having jurisdiction.
- g. Requested substitution is compatible with other portions of the Work.
- h. Requested substitution has been coordinated with other portions of the Work.
- i. Requested substitution provides specified warranty.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012501 – SUBSTITUTION REQUEST

Project: _____ Substitution Request Number: _____

From: _____
To: _____ Date: _____

A/E Project Number: _____
Re: _____ Contract For: _____

Specification Title: _____ Description: _____
Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____
Manufacturer: _____ Address: _____ Phone: _____
Trade Name: _____ Model No.: _____
Installer: _____ Address: _____ Phone: _____
History: New product 2-5 years old 5-10 yrs old More than 10 years old
Differences between proposed substitution and specified product: _____

Point-by-point comparative data attached - REQUIRED BY A/E

Reason for not providing specified item: _____

Similar Installation:
Project: _____ Architect: _____
Address: _____ Owner: _____
_____ Date Installed: _____

Proposed substitution affects other parts of Work: No Yes; explain _____

Savings to Owner for accepting substitution: _____ (\$ _____).
Proposed substitution changes Contract Time: No Yes [Add] [Deduct] _____ days.

Supporting Data Attached: Drawings Product Data Samples Tests Reports _____

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- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution is compliant with the building code in effect for Project.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

Telephone: _____

Attachments: _____

A/E's REVIEW AND ACTION

- Substitution approved - Make submittals in accordance with Specification Section 013300.
- Substitution approved as noted - Make submittals in accordance with Specification Section 013300.
- Substitution rejected - Use specified materials.
- Substitution Request received too late - Use specified materials.

Signed by:

Date:

Additional Comments: Contractor Subcontractor Supplier Manufacturer A/E _____

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Requirements:
 - 1. Section 012500 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.

1.3 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710.

1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within time specified in Proposal Request or 10 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish

times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

- e. Quotation Form: Use Section 012610 "Prime Contractor Change Order Request Summary" and Section 012620 "Subcontractor Change Order Request Summary." These documents will be provided by the Architect, in digital format to the Contractor.

B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Proposal Request Form: Use Section 012610 "Prime Contractor Change Order Request Summary" and Section 012620 "Subcontractor Change Order Request Summary." These documents will be provided by the Architect, in digital format to the Contractor.

1.5 ADMINISTRATIVE CHANGE ORDERS

- A. Allowance Adjustment: See Section 012100 "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.

1.6 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Change Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

1.7 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

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1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012610 - PRIME CONTRACTOR CHANGE ORDER REQUEST SUMMARY

PRIME CONTRACTOR: _____ C.O.R. NO.: _____

NUMBER OF DAYS REQUESTED FOR CONTRACT EXTENTION: _____ DATE: _____

DESCRIPTION OF CHANGE: _____

**PRIME CONTRACTOR DIRECT COSTS
 ADDITIONS**

A	Material & Equipment	<input type="text"/>	
B	Labor	<input type="text"/>	
C	Subtotal of Additive Cost		<input type="text" value="\$0.00"/>

DEDUCTIONS (use minus sign for all deduct figures)

D	Material & Equipment	<input type="text"/>	
E	Labor	<input type="text"/>	
F	Subtotal of Deductive Cost		<input type="text" value="\$0.00"/>

G Contractor's Total Direct Cost (C+F)

H Prime Contractor's Mark-up

Line "H" mark-up is calculated in accordance with Article 7 of the General Conditions of the Contract for Construction. Mark-up percentages applied to the line "G" subtotal are as follows: Not to exceed 15% on first \$50,000, 10% on balance beyond \$50,000, 6% for credits.

I Total Prime Contractor Direct Costs + Mark-up (Line G + H)

J Total Subcontractor Direct Costs

(Note: If there are two or more subcontractors for this change item, then use a separate form for each subcontractor.)
 Sum of Lines "I" and "L" from Subcontractor Change Order Request Summary 012620

K Subcontractor Mark-up

Sum of Lines "J", "M", "N" and "O" from Subcontractor Change Order Request Summary 012620

L General Contractor's Mark-up on Subcontractor Direct Costs

Line "L" mark-up is calculated in accordance with Article 7 of the General Conditions of the Contract for Construction. Mark-up percentages applied to the line "J" subtotal are as follows: Not to exceed 5% on first \$50,000, 3% on balance beyond \$50,000, 4% for credits.

M Total Prime Contractor Change Request (Line I + J + K + L)

Note: Include detailed breakdown of material, labor and equipment cost for each trade using Sections 012611 and 012621. Refer to AIA Document A201 General Conditions of the Contract for Construction, Article 7.

<i>To the best of my knowledge and belief, I certify that all costs listed above are correct.</i>	
Contractor Name _____	Date _____
Contractor Signature _____	

SECTION 012610.1 - PRIME CONTRACTOR CHANGE ORDER REQUEST WORKSHEET

PRIME CONTRACTOR: _____

C.O.R. NO.: _____

DATE: _____

Complete and attached this Worksheet to Section 012610 - Prime Contractor Change Order Request Summary.

**PRIME CONTRACTOR DIRECT COSTS
 ADDITIONS**

	DESCRIPTION	MATERIAL & EQUIPMENT			LABOR			TOTAL
		QTY	COST	SUBTOTAL	HRS	RATE/HR	SUBTOTAL	
1				\$0.00			\$0.00	\$0.00
2				\$0.00			\$0.00	\$0.00
3				\$0.00			\$0.00	\$0.00
4				\$0.00			\$0.00	\$0.00
5				\$0.00			\$0.00	\$0.00
6				\$0.00			\$0.00	\$0.00
7				\$0.00			\$0.00	\$0.00
8				\$0.00			\$0.00	\$0.00
9				\$0.00			\$0.00	\$0.00
10				\$0.00			\$0.00	\$0.00
	ADDITIONS TOTAL			\$0.00			\$0.00	\$0.00

DEDUCTIONS

	DESCRIPTION (Use minus sign for all deduct dollar figures)	MATERIAL & EQUIPMENT			LABOR			TOTAL
		QTY	COST (-)	SUBTOTAL	HRS	RATE/HR (-)	SUBTOTAL	
1				\$0.00			\$0.00	\$0.00
2				\$0.00			\$0.00	\$0.00
3				\$0.00			\$0.00	\$0.00
4				\$0.00			\$0.00	\$0.00
5				\$0.00			\$0.00	\$0.00
6				\$0.00			\$0.00	\$0.00
7				\$0.00			\$0.00	\$0.00
8				\$0.00			\$0.00	\$0.00
9				\$0.00			\$0.00	\$0.00
10				\$0.00			\$0.00	\$0.00
	DEDUCTIONS TOTAL			\$0.00			\$0.00	\$0.00

GRAND TOTAL (Additions & Deductions)	\$0.00
---	---------------

SECTION 012620 - SUBCONTRACTOR CHANGE ORDER REQUEST SUMMARY

SUBCONTRACTOR: _____ C.O.R. NO.: _____

NUMBER OF DAYS REQUESTED FOR CONTRACT EXTENTION: _____ DATE: _____

DESCRIPTION OF CHANGE: _____

SUBCONTRACTOR DIRECT COSTS

ADDITIONS

A	Material & Equipment	<input type="text"/>	
B	Labor	<input type="text"/>	
C	Subtotal of Additive Cost		<input type="text" value="\$0.00"/>

DEDUCTIONS (use minus sign for all deduct figures)

D	Material & Equipment	<input type="text"/>	
E	Labor	<input type="text"/>	
F	Subtotal of Deductive Cost		<input type="text" value="\$0.00"/>

G Subcontractor's Total Direct Cost (C+F)

H Subcontractor's Mark-up

Line "H" mark-up is calculated in accordance with Article 7 of the General Conditions of the Contract for Construction. Mark-up percentages applied to the line "G" subtotal are as follows: Not to exceed 15% on first \$50,000, 10% on balance beyond \$50,000, 6% for credits.

I **Total Subcontractor Direct Costs + Mark-up**(Line G + H)

J Total of all Sub-subcontractor Direct Costs

K Sub-subcontractor Mark-up

Line "K" mark-up is calculated in accordance with Article 7 of the General Conditions of the Contract for Construction. Mark-up percentages applied to the line "J" subtotal are as follows: Not to exceed 15% on first \$50,000, 10% on balance beyond \$50,000, 6% for credits.

L Subcontractor's Mark-up on Sub-subcontractor Direct Costs

Line "L" mark-up is calculated in accordance with Article 7 of the General Conditions of the Contract for Construction. Mark-up percentages applied to the line "J" subtotal are as follows: Not to exceed 5% on first \$50,000, 3% on balance beyond \$50,000, 4% for credits.

M **Total Subcontractor Change Request**(Line I + J + K + L)

Note: Include detailed breakdown of material, labor and equipment cost for each trade using Section 012621. Refer to AIA Document A201 General Conditions of the Contract for Construction, Article 7.

<i>To the best of my knowledge and belief, I certify that all costs listed above are correct.</i>	
Contractor Name _____	Date _____
Contractor Signature _____	

SECTION 012620.1 - SUBCONTRACTOR CHANGE ORDER REQUEST WORKSHEET

SUBCONTRACTOR: _____

C.O.R. NO.: _____

DATE: _____

Complete and attached this Worksheet to Section 012620 - Subcontractor Change Order Request Summary.

**SUBCONTRACTOR DIRECT COSTS
 ADDITIONS**

	DESCRIPTION	MATERIAL & EQUIPMENT			LABOR			TOTAL
		QTY	COST	SUBTOTAL	HRS	RATE/HR	SUBTOTAL	
1				\$0.00			\$0.00	\$0.00
2				\$0.00			\$0.00	\$0.00
3				\$0.00			\$0.00	\$0.00
4				\$0.00			\$0.00	\$0.00
5				\$0.00			\$0.00	\$0.00
6				\$0.00			\$0.00	\$0.00
7				\$0.00			\$0.00	\$0.00
8				\$0.00			\$0.00	\$0.00
9				\$0.00			\$0.00	\$0.00
10				\$0.00			\$0.00	\$0.00
	ADDITIONS TOTAL			\$0.00			\$0.00	\$0.00

DEDUCTIONS

	DESCRIPTION (Use minus sign for all deduct dollar figures)	MATERIAL & EQUIPMENT			LABOR			TOTAL
		QTY	COST (-)	SUBTOTAL	HRS	RATE/HR (-)	SUBTOTAL	
1				\$0.00			\$0.00	\$0.00
2				\$0.00			\$0.00	\$0.00
3				\$0.00			\$0.00	\$0.00
4				\$0.00			\$0.00	\$0.00
5				\$0.00			\$0.00	\$0.00
6				\$0.00			\$0.00	\$0.00
7				\$0.00			\$0.00	\$0.00
8				\$0.00			\$0.00	\$0.00
9				\$0.00			\$0.00	\$0.00
10				\$0.00			\$0.00	\$0.00
	DEDUCTIONS TOTAL			\$0.00			\$0.00	\$0.00

GRAND TOTAL (Additions & Deductions)	\$0.00
---	---------------

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
 - 1. Section 012100 "Allowances" for procedural requirements governing the handling and processing of allowances.
 - 2. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
 - 3. Section 012910 "Payroll Verification Affidavit" to be completed and attached to each application for payment.
 - 4. Section 012911 "Partial Release of Liens" to be completed and attached to each application for payment.
 - 5. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Architect at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

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- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Owner's name.
 - c. Name of Architect.
 - d. Architect's Project number.
 - e. Contractor's name and address.
 - f. Date of submittal.
 2. Arrange schedule of values consistent with format of AIA Document G703.
 3. Arrange the schedule of values in tabular form, with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or division.
 - b. Description of the Work.
 - c. Change Orders (numbers) that affect value.
 - d. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent. Round dollar amounts to whole dollars, with total equal to Contract Sum.
 - 1) Labor.
 - 2) Materials.
 4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
 5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site.
 6. Overhead Costs, Proportional Distribution: Include total cost and proportionate share of general overhead and profit for each line item.
 7. Closeout Costs. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.
 8. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments, as certified by Architect and paid for by Owner.

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- B. Payment Application Times: The date for each progress payment is indicated in the Owner/Contractor Agreement. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
1. Submit draft copy of Application for Payment seven days prior to due date for review by Architect.
- C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
 4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
- E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.
 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
 3. Provide summary documentation for stored materials indicating the following:
 - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
 - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
 - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- F. Transmittal: Submit one signed and notarized original copy of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

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- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Waiver Forms: Use Section 012911 – “Partial Release of Liens” of the Project Manual.
- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. Schedule of values.
 2. Contractor's construction schedule (preliminary if not final).
 3. List of Contractor's staff assignments.
 4. List of Contractor's principal consultants.
 5. Copies of building permits.
 6. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 7. Initial progress report.
 8. Certificates of insurance and insurance policies.
 9. Performance and payment bonds.
 10. Copies of Initial Project Workforce Report.
 11. Copies of Monthly Workforce Tracking.
- I. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 - a. Complete administrative actions, submittals, and Work preceding this application, as described in Section 017700 "Closeout Procedures."
 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Certification of completion of final punch list items.
 3. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 4. Updated final statement, accounting for final changes to the Contract Sum.

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5. AIA Document G706.
6. AIA Document G706A.
7. AIA Document G707.
8. Evidence that claims have been settled.
9. Final liquidated damages settlement statement.
10. Waivers and releases.
11. Letter on Contractor's letterhead stating that all Workforce Tracking forms and Weekly Certified Payroll Records have been submitted to the proper recipients.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

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SECTION 012910 - PAYROLL VERIFICATION AFFIDAVIT

State of New Jersey

County of _____

_____ being duly sworn, on its oath deposes and says:

I swear that the payroll on the Project indicated below,

under contract with _____ (Owner) and for the payroll period indicated, was fully paid and that nothing is due and owing to any worker thereunder, and that the wages paid were, in no case, less than the applicable wage rates contained in the wage determination decision of the Secretary of Labor of New Jersey, and that the job classification for each worker conformed to the actual work he/she performed.

In addition, I have submitted to the Owner for their files one copy of all weekly-certified payroll records for this pay period.

The above statement applies in full to all of the sub-contractors under this contract.

Project Name & Location: _____

Pay Period: _____

Contract No. _____ - _____ (Name)

Contractor _____

BY: _____

TITLE: _____

Subscribed and sworn to before me this

_____ day of _____, 20_____.

State of _____

Notary Public: _____

My commission expires _____, 20_____.

END OF SECTION 012910

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SECTION 012911 - PARTIAL RELEASE OF LIENS

STATE OF NEW JERSEY

I, _____ of _____ (Municipality)
in the County of _____ and the State of _____
_____ of full age, being duly sworn according to law on
my oath depose and say:

I am _____ (Title)
of the firm of _____

(strike two of the three options below, which do not apply)

- 1.(Prime Contractor _____)
- 2.(Subcontractor to _____)
- 3.(Material supplier to _____)

in connection with construction of the _____

(Project name and location)

To be completed by Prime Contractor

To the date hereof, all labor and/or material(s) installed, including all applicable sales or use taxes furnished for this project has been fully paid for, and there are no sums due or to become due therefore, except as follows:

All labor directly employed by us for this project has been fully paid as of the date of our last payroll period

_____(Date), except as follows:

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To be completed by Prime Contractor

To the date hereof, all labor and/or material(s) installed, including all applicable sales or use taxes furnished for this project has been fully paid for, and there are no sums due or to become due therefore, except as follows:

To be completed by Subcontractor and/or Material Supplier

All labor directly employed by us for this project has been fully paid as of the date of our last payroll period

_____ (Date), except as follows:

All withholding, Social Security, or Unemployment Taxes, all Union benefits and Welfare Funds, all Workman's Compensation, Public Liability, and accumulations of Withholding taxes are separately deposited in trust funds.

This affidavit is made with the full knowledge that _____

_____ (Owner)

relies hereon in making partial (final) payment \$ _____
(Amount of payment) to us for labor and or material furnished and installed for the project named herein.

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By: _____ L.S.

*(SEAL IF BIDDER
IS A CORPORATION)

Subscribed and sworn to before me this

_____ day of _____, 20_____.

State of _____

Notary Public: _____

My commission expires _____, 20_____.

END OF SECTION 012911

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1 SECTION 012920-BILL OF SALE/CERTIFICATION FOR STORED MATERIAL
2
3

4 OWNER: _____

5 CONTRACTOR: _____
6

7 IN ACCORDANCE WITH THE CONTRACT DOCUMENTS on the above Project, the Owner
8 has allowed the Contractor to purchase materials and/or equipment in advance of the time required
9 for the installation of said materials and/or equipment and to requisition the Owner for payment of
10 such material and/or equipment properly stored. The following is mutually agreed:
11

- 12 1. The Contractor certifies that he/she is the legal owner of the materials and/or equipment
13 listed below and provides the Owner with a certificate of insurance naming the Owner as
14 loss beneficiary for the full dollar amount representing the materials stored.
15
- 16 2. The Contractor agrees to transfer to the Owner the materials and/or equipment listed below
17 and to transfer all rights, title and interest therein to the Owner.
18
- 19 3. The materials and/or equipment listed below has been properly stored where listed below
20 and has been designated by a tag or other appropriate notice affixed thereto stating:
21
- 22 4. Nothing in these provisions shall be construed as relieving the Contractor from the sole
23 responsibility for the care, custody and protection of such materials and/or equipment or as
24 a waiver of the right of the Owner to require fulfillment of all terms and conditions of the
25 Contract Documents.
26
- 27 5. When materials and/or equipment are stored off the Project Site, the Contractor certifies
28 that such materials and/or equipment, listed below, are fully insured against the perils of
29 fire, theft, extended coverage, vandalism and malicious mischief.
30
- 31 6. The Owner and Architect reserve the right to inspect materials and/or equipment, wherever
32 stored, at their convenience during normal working hours.
33
- 34 7. The cost and expense, if any, involved in the storage and/or delivery to the Project Site will
35 be borne by the Contractor.
36

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1 LIST OF MATERIALS AND/OR EQUIPMENT STORED:

2

3	<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>TOTAL VALUE</u>
4	1.			
5	2.			
6	3.			
7	4.			
8	5.			

9
10
11 PLACE AND METHOD OF STORAGE:

12

<u>LOCATION</u>	<u>STORED BY</u>	<u>PROTECTED BY</u>
() Warehouse	() Contractor	() Building Cover
() Storage Yard	() Distributor	() Plastic Cover
() On Project Site	() Manufacturer	() Not Required

13
14
15 NAME AND ADDRESS OF PARTY STORING MATERIALS AND/OR EQUIPMENT

16
17 NAME: _____

18 ADDRESS: _____

19 CITY, STATE, ZIP: _____

20
21 BILL OF SALE:

22
23 In consideration of the sum or sums listed above in lawful money of the United States to be paid as
 24 provided in the Contract Documents, The Contractor does grant and convey unto the Owner title
 25 of ownership of all materials and/or equipment listed above to have and to hold the same unto the
 26 Owner forever.

27
28 The Contractor does, for himself/herself, his/her successors and assigns covenant and agree to
 29 warrant and defend the sale of the above listed materials and/or equipment hereby sold unto the
 30 Owner, against all claims or any claims or any person or persons whomsoever.

31

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1 SWORN TO AND SUBSCRIBED

2

Contractor

3 BEFORE ME THIS _____ DAY

4 OF _____, 20____.

5

By: _____
Name

6

Notary Public of the State of

7

New Jersey.

8

Title

9

10 My Commission Expires: _____

11

12

13

14

Date

15

16

17

18

19 Accepted for Project Owner:

20

21

22

Signature

Title

Date

23

24

25

26

END OF SECTION 012920

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project, including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Coordination drawings.
 - 3. RFIs.
 - 4. Digital project management procedures.
 - 5. Project meetings.
- B. Related Requirements:
 - 1. Section 013200 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
 - 2. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 3. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

- A. RFI: Request for Information. Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results, where installation of one part of the Work depends on installation of other components, before or after its own installation.

2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's construction schedule.
 2. Preparation of the schedule of values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Preinstallation conferences.
 7. Project closeout activities.
 8. Startup and adjustment of systems.

1.5 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely indicated on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
 - b. Coordinate the addition of trade-specific information to coordination drawings in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
 - c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
 - e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
 - f. Indicate required installation sequences.

- g. Indicate dimensions shown on Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternative sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordination Drawing Organization: Organize coordination drawings as follows:

1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
2. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
3. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
4. Mechanical and Plumbing Work: Show the following:
 - a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
 - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
 - c. Fire-rated enclosures around ductwork.
5. Electrical Work: Show the following:
 - a. Runs of vertical and horizontal conduit 1-1/4 inches (32 mm) in diameter and larger.
 - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
 - c. Panel board, switchboard, switchgear, transformer, busway, generator, and motor-control center locations.
 - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
6. Fire-Protection System: Show the following:
 - a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
7. Review: Architect will review coordination drawings to confirm that, in general, the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Architect determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Architect will so inform Contractor, who shall make suitable modifications and resubmit.
8. Coordination Drawing Prints: Prepare coordination drawing prints according to requirements in Section 013300 "Submittal Procedures."

- C. Coordination Drawing Process: Prepare coordination drawings in the following manner:
1. Schedule submittal and review of Fire Sprinkler, Plumbing, HVAC, and Electrical Shop Drawings to make required changes prior to preparation of coordination drawings.
 2. Commence routing of coordination drawing files with HVAC Installer, who will provide drawing plan files denoting approved ductwork. HVAC Installer will locate ductwork and piping on a single layer, using orange color. Forward drawings to Plumbing Installer.
 3. Plumbing Installer will locate plumbing and equipment on a single layer, using blue color.
 4. Fire Sprinkler Installer will locate piping and equipment, using red color. Fire Sprinkler Installer shall forward drawing files to Electrical Installer.
 5. Electrical Installer will indicate service and feeder conduit runs and equipment in green color. Electrical Installer shall forward drawing files to Communications and Electronic Safety and Security Installer.
 6. Contractor shall perform the final coordination review. As each coordination drawing is completed, Contractor will meet with Architect to review and resolve conflicts on the coordination drawings.
- D. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:
1. File Submittal Format: Submit or post coordination drawing files using PDF format.
 2. Architect will furnish Contractor one set of digital data files of Drawings for use in preparing coordination digital data files.
 - a. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
 - b. Contractor shall execute a data licensing agreement form that can be obtained from the Architect.

1.6 REQUEST FOR INFORMATION (RFI)

- A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
1. Each Request for Information shall be limited to a single subject of inquiry.
 2. Architect will return without response those RFIs submitted to Architect by other entities controlled by Contractor.
 3. Coordinate and submit RFIs in a prompt manner to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Clearly and concisely set forth the issue for which clarification or interpretation is sought and why a response is needed and when it is needed. Contractor shall provide their own interpretation or understanding of the requirement along with their reasons for how they reached such an understanding. Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.

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2. Owner name.
 3. Name of Architect.
 4. Architect's Project number.
 5. Date.
 6. Name of Contractor.
 7. RFI number, numbered sequentially.
 8. RFI subject.
 9. Specification Section number and title and related paragraphs, as appropriate.
 10. Drawing number and detail references, as appropriate.
 11. Field dimensions and conditions, as appropriate.
 12. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 13. Contractor's signature.
 14. Potential cost impact & potential estimate.
 15. Potential time impact & potential delay.
 16. Change order required.
 17. Date response needed.
 18. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: Use Contractor's Request for Information included at end of Part 3.
1. Attachments shall be electronic files in PDF format.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action and shall not be entered into the RFI Log:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."

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- a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within five working days of receipt of the RFI response. Failure to provide such written notice shall waive the Contractor's right to seek additional time or cost.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log when requested by the Architect. Include the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect.
 4. RFI number, including RFIs that were returned without action or withdrawn.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.

1.7 DIGITAL PROJECT MANAGEMENT PROCEDURES

- A. Use of Architect's Digital Data Files: Digital data files of Architect's CAD drawings will be provided by Architect for Contractor's use during construction.
1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project Record Drawings.
 2. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
 3. Contractor shall execute a data licensing agreement in the form of Electronic Files Indemnification form provided by the Architect.
 - a. Subcontractors and other parties granted access by Contractor to Architect's digital data files shall execute a data licensing agreement in the form of Electronic Files Indemnification form provided by the Architect.
- B. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:
1. Assemble complete submittal package into a single indexed file, incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.

3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.8 PROJECT MEETINGS

- A. General: Architect will schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times a minimum of 10 working days prior to meeting.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, Contractor(s) and Architect, within three days of the meeting.
4. Contractor Progress Status Report: Prime Contractors shall distribute their progress report at each meeting to all invited attendees. Copy of form is included at end of Part 3.

- B. Preconstruction Conference: Architect will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Responsibilities and personnel assignments.
 - b. Tentative construction schedule.
 - c. Permits.
 - d. Critical work sequencing and long lead items.
 - e. Designation of key personnel and their duties.
 - f. Lines of communications.
 - g. Procedures for processing field decisions and Change Orders.
 - h. Procedures for RFIs.
 - i. Procedures for testing and inspecting.
 - j. Procedures for processing Applications for Payment.
 - k. Distribution of the Contract Documents.
 - l. Submittal procedures.
 - m. Preparation of Record Documents.
 - n. Use of the premises and existing building.
 - o. Work restrictions.
 - p. Working hours.
 - q. Owner's occupancy requirements.
 - r. Responsibility for temporary facilities and controls.
 - s. Procedures for moisture and mold control.
 - t. Procedures for disruptions and shutdowns.

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- u. Construction waste management and recycling.
 - v. Parking availability.
 - w. Office, work, and storage areas.
 - x. Equipment deliveries and priorities.
 - y. First aid.
 - z. Security.
 - aa. Progress cleaning.
3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other Sections and when required for coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
 - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Possible conflicts.
 - i. Compatibility requirements.
 - j. Time schedules.
 - k. Weather limitations.
 - l. Manufacturer's written instructions.
 - m. Warranty requirements.
 - n. Compatibility of materials.
 - o. Acceptability of substrates.
 - p. Temporary facilities and controls.
 - q. Space and access limitations.
 - r. Regulations of authorities having jurisdiction.
 - s. Testing and inspecting requirements.
 - t. Installation procedures.
 - u. Coordination with other work.
 - v. Required performance results.
 - w. Protection of adjacent work.
 - x. Protection of construction and personnel.
 - 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.

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4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Architect will conduct progress meetings at biweekly intervals or as deemed necessary by the Architect.
1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site use.
 - 8) Temporary facilities and controls.
 - 9) Progress cleaning.
 - 10) Quality and work standards.
 - 11) Status of correction of deficient items.
 - 12) Field observations.
 - 13) Status of RFIs.
 - 14) Status of Proposal Requests.
 - 15) Pending changes.
 - 16) Status of Change Orders.
 - 17) Pending claims and disputes.
 - 18) Documentation of information for payment requests.

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3. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting, where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PROJECT MANAGEMENT FORMS

- A. The Architect shall furnish the Contractor with digital forms of the following documents.

END OF SECTION 013300

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CONTRACTOR REQUEST FOR INFORMATION

FROM: _____

REQUEST DATE: _____ EMAIL _____

CONTRACTOR'S RFI NUMBER: _____

TO:
Angelo P. Butera, AIA, LEED AP
REGAN YOUNG ENGLAND BUTERA, PC
Fax: (609) 265-0333

Email: apb@ryebread.com

REFERENCES (List all applicable drawings & specifications):

PLEASE RESPOND TO THE FOLLOWING:

POTENTIAL COST IMPACT & POTENTIAL ESTIMATE: _____

POTENTIAL TIME IMPACT & POTENTIAL DELAY: _____

CHANGE ORDER REQUIRED: Yes No

DATE RESPONSE NEEDED: _____

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DESIGN PROFESSIONAL'S RESPONSE:

DATE OF RESPONSE: _____ BY: _____

DISTRIBUTION: _____

Note: This reply is not an authorization to proceed with work involving additional cost, time or both. If any reply requires a change to the Contract Documents, a Change Order, Construction Change Directive, or a Minor Change in the work must be executed in accordance with the Contract Documents.

CONTRACTOR PROJECT STATUS REPORT

(To be submitted at each Job Meeting)

CONTRACTOR: _____ DATE _____

EST. % OF COMPLETION: _____ CONFORMANCE W/ SCHED(+,=-,-): _____

WORK IN PROGRESS: (List main work items and % completion for each item)

A. _____

B. _____

C. _____

D. _____

E. _____

F. _____

G. _____

H. _____

PROJECTED WORK: (List only what you expect to perform in the next two weeks & include % of completion for each item)

A. _____

B. _____

C. _____

D. _____

E. _____

F. _____

G. _____

POINTS OF RECORD: (be brief)

A. _____

B. _____

C. _____

D. _____

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

- 1. Informational submittals.
- 2. Coordination.
- 3. Contractor's Construction Schedule.
- 4. Gantt-chart schedule requirements.
- 5. Site condition reports.
- 6. Unusual event reports.

- B. Related Requirements:

- 1. Section 014000 "Quality Requirements" for schedule of tests and inspections.
- 2. Section 012900 "Payment Procedures" for schedule of values and requirements for use of cost-loaded schedule for Applications for Payment.

1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a construction schedule consume time and resources.

- 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
- 2. Predecessor Activity: An activity that precedes another activity in the network.
- 3. Successor Activity: An activity that follows another activity in the network.

1.4 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:

- 1. Working electronic copy of schedule file.
- 2. PDF file.

- B. Site Condition Reports: Submit at time of discovery of differing conditions.
- C. Unusual Event Reports: Submit at time of unusual event.

1.5 COORDINATION

- A. Coordinate Contractor's Construction Schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
 - 1. Secure time commitments for performing critical elements of the Work from entities involved.
 - 2. Coordinate each construction activity in the network with other activities, and schedule them in proper sequence.

1.6 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Time Frame: Extend schedule from date established for the Notice of Award to date of Final Completion.
 - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each separate area as a separate numbered activity for each main element of the Work. Comply with the following:
 - 1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
 - 2. Temporary Facilities: Indicate start and completion dates for the following as applicable:
 - a. Securing of approvals and permits required for performance of the Work.
 - b. Temporary facilities.
 - c. Regulatory agency approvals.
 - d. Punch list.
 - 3. Procurement Activities: Include procurement process activities for the following long lead-time items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 - 4. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with submittal schedule.
 - 5. Startup: Include no fewer than 10 days for startup.
 - 6. Substantial Completion: Indicate completion in advance of date established for Substantial Completion and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.

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7. Punch List and Final Completion: Include not more than 15 days for completion of punch list items and Final Completion.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule and show how the sequence of the Work is affected.
1. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Partial occupancy before Substantial Completion.
 - e. Use-of-premises restrictions.
 - f. Seasonal variations.
 - g. Environmental control.
 2. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
 - a. Submittals.
 - b. Fabrication.
 - c. Deliveries.
 - d. Installation.
 - e. Tests and inspections.
 - f. Adjusting.
 - g. Curing.
 - h. Startup and placement into final use and operation.
 3. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
 - a. Structural completion.
 - b. Temporary enclosure and space conditioning.
 - c. Permanent space enclosure.
 - d. Completion of mechanical installation.
 - e. Completion of electrical installation.
 - f. Substantial Completion.
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion, and the following interim milestones:
1. Arrival of metal building structure.
 2. Temporary enclosure and space conditioning.

- E. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
 - 1. Unresolved issues.
 - 2. Unanswered Requests for Information.
 - 3. Rejected or unreturned submittals.
 - 4. Notations on returned submittals.
 - 5. Pending modifications affecting the Work and the Contract Time.

- F. Contractor's Construction Schedule Updating: At When requested by the Architect, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
 - 1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 - 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 - 3. As the Work progresses, indicate Final Completion percentage for each activity.

- G. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.

- H. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
 - 1. Post copies in Project meeting rooms and temporary field offices.
 - 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

1.7 GANTT-CHART SCHEDULE REQUIREMENTS

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's Construction Schedule within 15 days of date established for the Notice of Award.

- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
 - 1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

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1.8 REPORTS

- A. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.
- B. Unusual Event Reports: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, responses by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.
 - 1. Submit unusual event reports directly to Owner and Architects within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013200

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Submittal schedule requirements.
- 2. Administrative and procedural requirements for submittals.

- B. Related Requirements:

- 1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
- 2. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
- 3. Section 014000 "Quality Requirements" for submitting test and inspection reports, and schedule of tests and inspections.
- 4. Section 017700 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.
- 5. Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
- 6. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
- 7. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.4 SUBMITTAL FORMATS

- A. Submittal Information: Include the following information in each submittal:
1. Project name.
 2. Date.
 3. Name of Architect.
 4. Name of Contractor.
 5. Name of firm or entity that prepared submittal.
 6. Names of subcontractor, manufacturer, and supplier.
 7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier and alphanumeric suffix for resubmittals.
 8. Category and type of submittal.
 9. Submittal purpose and description.
 10. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
 11. Drawing number and detail references, as appropriate.
 12. Indication of full or partial submittal.
 13. Location(s) where product is to be installed, as appropriate.
 14. Other necessary identification.
 15. Remarks.
 16. Signature of transmitter.
- B. Options: Identify options requiring selection by Architect.
- C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.
- D. Paper Submittals (*Only for submittals that require an original signature and/or raised seal*):
1. Place a permanent label or title block on each submittal item for identification; include name of firm or entity that prepared submittal.
 2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
 3. Action Submittals: Submit five paper copies of each submittal unless otherwise indicated. Architect will return two copies.
 4. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
 5. Transmittal for Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using Submittal Transmittal Form found at the end of Part 3.
- E. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

1. Transmittal Form for Electronic Submittals: Use Submittal Transmittal Form found at the end of Part 3.

1.5 SUBMITTAL PROCEDURES

- A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
 1. Email: Prepare submittals as PDF package and transmit to Architect by sending via email. Include an executed PDF of the Submittal Transmittal Form. Include information in email subject line as requested by Architect.
 - a. Architect will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.
 2. Paper: Prepare submittals in paper form and deliver to Architect.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections, so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
 4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.
 - a. Civil, structural, plumbing, mechanical, electrical and fire suppression.

- D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 - 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block, and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

1.6 SUBMITTAL REQUIREMENTS

- A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 - 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams that show factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 - 5. Submit Product Data before Shop Drawings, and before or concurrently with Samples.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data unless submittal based on Architect's digital data drawing files is otherwise permitted.

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1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
 2. Paper Sheet Size: Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
 - a. Five opaque copies of each submittal *where submittals require an original signature and/or raised seal*. Architect will retain two copies; remainder will be returned.
 - b. One PDF submittal. Architect will return one PDF copy with appropriate action taken.
- C. Samples: Submit Samples for review of type, color, pattern, and texture for a check of these characteristics with other materials.
1. Transmit Samples that contain multiple, related components, such as accessories together in one submittal package.
 2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
 - a. Project name and submittal number.
 - b. Generic description of Sample.
 - c. Product name and name of manufacturer.
 - d. Sample source.
 - e. Number and title of applicable Specification Section.
 - f. Specification paragraph number and generic name of each item.
 3. Paper Transmittal: Include paper transmittal, including complete submittal information indicated.
 4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing

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color, texture, and pattern; color range sets; and components used for independent testing and inspection.

- a. Number of Samples: Submit one set of Samples. Architect will retain Sample sets.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- E. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
- F. Certificates:
 1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
 2. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of AWS B2.1/B2.1M on AWS forms. Include names of firms and personnel certified.
- G. Test and Research Reports:
 1. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
 2. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
 3. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
 4. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - a. Name of evaluation organization.
 - b. Date of evaluation.

- c. Time period when report is in effect.
- d. Product and manufacturers' names.
- e. Description of product.
- f. Test procedures and results.
- g. Limitations of use.

1.7 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

1.8 CONTRACTOR'S REVIEW

- A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Contractor's Approval: Indicate Contractor's approval for each submittal by signing each Submittal Transmittal Form. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
 - 1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.

1.9 ARCHITECT'S REVIEW

- A. Action Submittals: Architect will review each submittal, indicate corrections or revisions required and return.
 - 1. PDF Submittals: Architect will indicate, via markup on each submittal, the appropriate action.

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2. Paper Submittals: Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Architect will return without review submittals received from sources other than Contractor.
- F. Submittals not required by the Contract Documents will be returned by Architect without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SUBMITTAL FORMS

- A. The Architect shall furnish the Contractor with digital forms of the following documents.

END OF SECTION 013300

SUBMITTAL TRANSMITTAL FORM

**PRIME CONTRACTOR'S
SUBMITTAL NO.**

DATE:

PRIME CONTRACTOR:

SUBCONTRACTOR:

SUPPLIER:

MANUFACTURER:

ITEM: (Be Specific)

SPEC SECTION:

DRAWING NO.:

NO. OF COPIES:

As, the above named PRIME CONTRACTOR we affirm that we have checked this submission for conformance with the design concept of the Project and with the Contract Documents; that the Contract Document requirements have been met and that we have verified all dimensions, conditions, and quantities as shown and/or corrected on this submittal; that the submittal will not cause conflict with or increase cost to other Prime Contractors or the Owner; and that all previous applicable changes made in the Project by Change Orders or other directives have been properly shown on each submittal affected.

Architect/Engineer Action Stamp

By: _____

Title: _____

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SECTION 013310 - PROJECT START-UP SUBMITTALS

Submit copies of the following to the Architect immediately after the issuance of the Contract. This form is an internal form used by REGAN YOUNG ENGLAND BUTERA and shall be used only as a guide for submissions by the Contractor. Additional items not included on this list may be required at the discretion of the Architect or as referenced in their individual sections.

CONTRACTOR: _____

ADDRESS: _____

TELEPHONE NUMBER: _____

<u>ITEM</u>	<u>DATE RECEIVED</u>
O Contract	_____
O Performance Bond & Payment Bond	_____
P Insurance Certificate	_____
O Notice to Proceed	_____
P Contractor's Certification of Subcontractor(s) Insurance Coverage's	_____
P Copies of Permits	_____
P Schedule of Values.....	_____
P Initial Workforce Report (Affirmative Action)	_____
P Required Cuts (see indiv. spec sections).....	_____
P Construction Schedule	_____
P List of Subcontractors	_____
P List of Manufacturers/Suppliers.....	_____
P List of Contractor's Staff Assignments	_____
P Notification of Soil Conservation District	_____
O Welding Certificate (Section 013310).....	_____

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- O** Delegated-Design Services Certification (Section 013310)..... _____
- P** Traffic Control Plan (Section 015526)..... _____
- P** Land surveyor contact information and Letter of Conformance
(Section 017123)..... _____
- O** Foundation Survey (Section 017300)..... _____

O – Three Original copies required.
P – PDF copy required.

END OF SECTION 013310

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 DEFINITIONS

- A. Field Quality-Control Tests and Inspections: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- B. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, subcontractor, or sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.
 - 1. Use of trade-specific terminology in referring to a Work result does not require that certain construction activities specified apply exclusively to specific trade(s).
- C. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency

qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

- D. Source Quality-Control Tests and Inspections: Tests and inspections that are performed at the source (e.g., plant, mill, factory, or shop).
- E. Testing Agency: An entity engaged to perform specific tests, inspections, or both. The term "testing laboratory" shall have the same meaning as the term "testing agency."
- F. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work, to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- G. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work, to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Architect.

1.4 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Statement: Submit a statement signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

1.5 CONFLICTING REQUIREMENTS

- A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements is specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, inform the Architect regarding the conflict and obtain clarification prior to proceeding with the Work. Refer conflicting requirements that are different, but apparently equal, to Architect for clarification before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.6 INFORMATIONAL SUBMITTALS

- A. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility submitted to authorities having jurisdiction before starting work on the following systems:
 - 1. Seismic-force-resisting system, designated seismic system, or component listed in the Statement of Special Inspections.
 - 2. Primary wind-force-resisting system or a wind-resisting component listed in the Statement of Special Inspections.
- B. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- C. Reports: Prepare and submit certified written reports and documents as specified.
- D. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

1.7 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, telephone number, and email address of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making tests and inspections.
 - 6. Description of the Work and test and inspection method.
 - 7. Identification of product and Specification Section.
 - 8. Complete test or inspection data.
 - 9. Test and inspection results and an interpretation of test results.
 - 10. Record of temperature and weather conditions at time of sample-taking and testing and inspection.
 - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 - 12. Name and signature of laboratory inspector.
 - 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, telephone number, and email address of technical representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement of whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, telephone number, and email address of factory-authorized service representative making report.
 2. Statement that equipment complies with requirements.
 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 4. Statement of whether conditions, products, and installation will affect warranty.
 5. Other required items indicated in individual Specification Sections.

1.8 QUALITY ASSURANCE

- A. Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that is similar in material, design, and extent to those indicated for this Project.

- F. Testing and Inspecting Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented in accordance with ASTM E329, and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
- G. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect, demonstrate, repair, and perform service on installations of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

1.9 QUALITY CONTROL

- A. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.
 - 1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 - 2. Engage a qualified testing agency to perform quality-control services.
 - 3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed.
 - 4. Submit a certified written report, in duplicate, of each quality-control service.
 - 5. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 - 6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- B. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- C. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 - 1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 - 2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
 - 3. Conduct and interpret tests and inspections, and state in each report whether tested and inspected Work complies with or deviates from requirements.
 - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.

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5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform duties of Contractor.
- D. **Manufacturer's Field Services:** Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."
- E. **Manufacturer's Technical Services:** Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- F. **Contractor's Associated Requirements and Services:** Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspection equipment at Project site.
- G. **Coordination:** Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. **Test and Inspection Log:** Prepare a record of tests and inspections. Include the following:
1. Date test or inspection was conducted.

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2. Description of the Work tested or inspected.
 3. Date test or inspection results were transmitted to Architect.
 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's and authorities' having jurisdiction reference during normal working hours.
1. Submit log at Project closeout as part of Project Record Documents.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspection, sample-taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if

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bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
 - 1. For standards referenced by applicable building codes, comply with dates of standards as listed in building codes.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

SECTION 014219.10 – REFERENCE STANDARDS FOR SITEWORK

PART 1 GENERAL

1.1 DESCRIPTION

A. Work included:

1. Throughout the Contract Documents, reference is made to codes and standards which establish qualities and types of workmanship and materials, and which establish methods for testing and reporting on the pertinent characteristics.
2. Where materials or workmanship are required by these Contract Documents to meet or exceed the specifically named code or standard, it is the CONTRACTOR's responsibility to provide materials and workmanship which meet or exceed the specifically named code or standard.
3. It is also the CONTRACTOR's responsibility, when so required by the Contract Documents or by written request from the ARCHITECT, to deliver to the ARCHITECT all required proof that the materials or workmanship, or both, meet or exceed the requirements of the specifically named code or standard. Such proof shall be in the form requested in writing by the ARCHITECT, and generally will be required to be copies of a certified report of tests conducted by a testing agency approved for that purpose by the ARCHITECT.

1.2 QUALITY ASSURANCE

- A. Familiarity with pertinent codes and standards: In procuring all items used in this work, it is the CONTRACTOR's responsibility to verify the detailed requirements of the specifically named codes and standards and to verify that the items procured for use in this work meet or exceed the specified requirements.
- B. Rejection of noncomplying items: The ARCHITECT reserves the right to reject items incorporated into the work which fail to meet the specified minimum requirements.
- C. Applicable standards listed in these specifications include, but are not necessarily limited to, standards promulgated by the following agencies and organizations:
1. AASHTO - American Association of State Highway and Transportation Officials (Formerly AASHO)
 2. ACI - American Concrete Institute
 3. ACPA - American Concrete Pipe Association
 4. AI - Asphalt Institute
 5. ASTM - American Society for Testing and Materials

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6. AWWA - American Water Works Association
7. CRSI - Concrete Reinforcing Steel Institute
8. CDC - Concrete Technology Corporation
9. DEP - Department of Environmental Protection
10. EJMA - Expansion Joint Manufacturers Association
11. EPA - Environmental Protection Agency
12. FHWA - Federal Highway Administration, U.S. Department of Transportation
13. ITE - Institute of Traffic Engineers
14. MUTCD - Manual on Uniform Traffic Control Devices
15. NJDEP - New Jersey Department of Environmental Protection
16. NJDOT - New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction dated 2007 (Standard Specifications). Terms used within the Standard Specifications shall be defined as follows:
 - A. "Commissioner" as referenced in STANDARD SPECIFICATIONS shall be interpreted to mean the ARCHITECT.
 - B. "Department" as referenced in STANDARD SPECIFICATIONS shall be interpreted to mean the ARCHITECT duly authorized by the OWNER to observe the construction of the improvements contemplated herein, or the duly appointed assistant or representative of said ARCHITECT.
 - C. "Provide" to furnish and install complete.
 - D. "Section" shall refer to either the specification section of these specifications in which case it will be followed by the term "of these specifications" or a specified section of the Standard Specifications in which case it will be followed by the term "of the STANDARD SPECIFICATIONS".
 - E. "Standard Specification", the New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction, dated 2007, and all amendments thereto.
 - F. "State" as referenced in STANDARD SPECIFICATIONS shall be interpreted to mean OWNER.
17. OSHA - Occupational Safety and Health Act

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18. NRMCA - National Ready Mix Concrete Association
19. PCA - Portland Cement Association
20. PPI - Plastics Pipe Institute

END OF SECTION

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.3 USE CHARGES

- A. Installation, removal, and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, testing agencies, and authorities having jurisdiction.
- B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charge. Provide connections and extensions of services as required for construction operations.
- C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.4 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Accessible Temporary Egress: Comply with applicable provisions in the United States Access Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Portable Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.8-mm-) thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized-steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails. Provide galvanized-steel bases for supporting posts.
- B. Signage: Provide signage attached at 50 feet intervals advising “Construction Area – Keep Out”.
- C. Orange Safety Fencing: Provide around the entire area of any and all earthwork, excavations, etc. and shall be maintained until the work is complete.
- D. Floor Protection: Protect flooring during the construction period with hardboard panels or other suitable material approved by the Architect. Do not use paper or plastic sheeting. Do not move heavy and sharp objects directly over exist'g or proposed flooring.
- E. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil (0.25-mm) minimum thickness, with flame-spread rating of 15 or less in accordance with ASTM E84 and passing NFPA 701 Test Method 2.

2.2 TEMPORARY FACILITIES

- A. Field Offices: Owner will provide interior space for field offices for duration of Project.
- B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
 - 1. Store combustible materials apart from building.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
 - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 - 2. Heating, Cooling, and Dehumidifying Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction and marked for intended location and application.

3. Permanent HVAC System: If Owner authorizes use of existing and/or permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return-air grille in system and remove at end of construction and clean HVAC system as required in Section 017700 "Closeout Procedures."

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

- A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

3.2 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
 1. Locate facilities to limit site disturbance as specified in Section 011000 "Summary."
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.3 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- C. Sanitary Facilities: Provide temporary drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
 1. Use of Permanent Toilets: Use of Owner's existing or new toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion these facilities shall be cleaned.

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- D. Temporary Heating and Cooling: Provide supplemental temporary heating and cooling as required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
 - 1. Provide temporary dehumidification systems when required to reduce ambient and substrate moisture levels to level required to allow installation or application of finishes and their proper curing or drying.
- E. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
- F. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
- G. Telephone Service: Provide Job Forman with cell phone.

3.4 SUPPORT FACILITIES INSTALLATION

- A. Comply with the following:
 - 1. Temporary storage shall not be located within 30 feet (9 m) of building lines.
 - 2. Utilize designated area within existing building for temporary field offices.
 - 3. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 - 1. Protect existing site improvements to remain, including curbs, pavement, and utilities.
 - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- C. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- D. Storage and Staging: Use designated areas of Project site for storage and staging needs. Gates shall be secured via "daisy-chain" locks (i.e. Owner's lock secured to Contractor lock enabling access by either party).
- E. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
 - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
 - 2. Remove snow and ice as required to minimize accumulations.

- F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 017300 "Execution."
- G. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
 - 1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
 - 1. Comply with work restrictions specified in Section 011000 "Summary."
- C. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings.
 - 1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant-protection zones.
 - 2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
 - 3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
 - 4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
- D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- E. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people from easily entering site except by entrance gates.
 - 1. Extent of Fence: As indicated on Drawings.
 - 2. Gates shall be secured via "daisy-chain" locks (i.e. Owner's lock secured to Contractor lock enabling access by either party).

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- F. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each workday. Contractor shall be responsible for opening and securing the site each day.
- G. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- H. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
- I. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
 - 1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
 - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition in accordance with requirements of authorities having jurisdiction.
 - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.6 MOISTURE AND MOLD CONTROL

- A. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
 - 1. Protect porous materials from water damage.
 - 2. Protect stored and installed material from flowing or standing water.
 - 3. Keep porous and organic materials from coming into prolonged contact with concrete.
 - 4. Remove standing water from slabs.
- B. Partially Enclosed Construction Period: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
 - 1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
 - 2. Keep interior spaces reasonably clean and protected from water damage.
 - 3. Periodically collect and remove waste containing cellulose or other organic matter.
 - 4. Discard or replace water-damaged material.
 - 5. Do not install material that is wet.
 - 6. Discard and replace stored or installed material that begins to grow mold.

7. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.
- C. Controlled Construction Period: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
 2. Use temporary or, if permitted permanent HVAC system to control humidity within ranges specified for installed and stored materials.
 3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
 - a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 24 hours are considered defective and require replacing.
 - b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.
 - c. Remove and replace materials that cannot be completely restored to their manufactured moisture level within 48 hours.

3.7 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are property of Contractor.
 2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

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END OF SECTION 015000

SECTION 015526 - MAINTENANCE AND PROTECTION OF TRAFFIC

PART 1 GENERAL

1.1 RELATED WORK

- A. Section 017413: Cleaning and Restoration for Sitework.
- B. Section 312300.10: Site Excavation Filling and Grading

1.2 DESCRIPTION

- A. Provide for maintenance and protection of traffic as specified herein and in the Standard Specifications, latest revisions.
- B. Before beginning work on any phase of the project, furnish and install all construction signs, barricades, traffic guides, lights and other devices necessary to protect the public during construction.
- C. Do not occupy with equipment, materials or personnel any roadway or sidewalk areas within or adjacent to the project that is open to traffic except as necessary during actual working hours.
- D. Repair any damage to newly constructed or existing pavements as directed by ARCHITECT, at CONTRACTOR's expense, or repair will be made by others and cost of such repairs will be charged against CONTRACTOR.

1.3 REFERENCE STANDARDS

- A. U.S. Department of Transportation, Federal Highway Administration, Manual on Uniform Control Devices for Streets and Highways, current edition. (MUTCD)

1.4 SUBMITTALS

- A. All submittals shall be submitted through the Architect.
- B. Traffic Control Plan:
 - 1. Within ten (10) days after Notice to proceed and before work on the project begins, submit a Traffic Control Plan for the maintenance and protection of traffic.
 - 2. Show type and location of barricades, lights, cones, barrels, signs and other devices.
- C. Copies of all notices as specified herein.
- D. Name, address, phone number and contact person supplying traffic control devices.

1.5 PROJECT CONDITIONS

- A. Except as necessary during actual working hours, and then only with the specified authorization of the ARCHITECT or jurisdictional authority, the CONTRACTOR shall not occupy with his equipment, materials or personnel any roadway or sidewalk area within or adjacent to the project that is open to traffic.
- B. No equipment or machinery having caterpillar or other heavy treads that mar or damage pavements shall be permitted to move over or operate from newly constructed or existing pavements unless such equipment or machinery is moved on suitable pontoons or trailers or operated on heavy planking or other suitable platforms.
- C. The CONTRACTOR shall provide for prompt removal from the existing roadways of all dirt and other materials that have been spilled, washed, tracked or otherwise deposited thereon by his hauling and other operations whenever the accumulation is sufficient to cause the formation of mud, interfere with drainage, damage pavements, create a traffic hazard or dust condition.
- D. The CONTRACTOR shall cease work in existing roads when snow is imminent. The CONTRACTOR is responsible for snow removal within the limits of the construction fencing. The CONTRACTOR shall make suitable provisions to mark the location of equipment and all other obstructions in the event of deep snow.
- E. The requirements of the agency having jurisdiction over the roadways in which the CONTRACTOR is working shall govern.
- F. The CONTRACTOR may be required to provide, in addition to flagmen, uniformed traffic officers to fulfill the expressed needs of the owner, municipality, or any governmental agency having jurisdiction and shall contact the same to determine their requirements.
- G. During any suspension of the work, the CONTRACTOR shall make passable and shall open to traffic such portions of the project and temporary roadways or portions thereof as may be agreed upon between the CONTRACTOR and the ARCHITECT and the jurisdictional authority for the temporary accommodation of necessary traffic during the anticipated period of suspension. When work is resumed, the CONTRACTOR shall replace or renew all work or materials lost or damaged because of such temporary use of the project in every respect as though its prosecution had been continuous and without interference.

PART 2 PRODUCTS

2.1 GENERAL

- A. Materials may be new or used but must be suitable for the intended purpose and must not violate requirements of applicable codes and standards.

2.2 CONES

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- A. Cones shall conform to Part 6, Section 6F.59 of the MUTCD.
- B. Cones shall be a minimum of 18" high and be reflectorized.
- C. Cones shall be kept clean and bright for maximum target value. Cones shall be orange in color. Rubber cones shall be painted at the place of manufacture. Plastic cones shall be polyvinyl chloride with the color molded into the plastic.

2.3 DRUMS

- A. Drums shall conform to Part 6, Section 6F.62 of the MUTCD.
- B. Drums shall be 36" high 18" diameter with horizontal, circumferential, orange and white reflectorized stripes, 4" to 8" wide.

2.4 BARRICADES

- A. Barricades shall be Type I, Type II and Type III conforming to Part 6, Section C-8 with characteristics as follows:

BARRICADE CHARACTERISTICS			
TYPE*			
	I	II	III
Width of rail	8" min-12" max	8" min-12" max	8" min-12" max
Length of rail	2 ft. minimum	2 ft. minimum	4 ft. minimum
Width of stripes**	6 inches	6 inches	6 inches
Height	3 ft. minimum	3 ft. minimum	5 ft. minimum
Number of Reflectorized Rail Faces	2 (one each direction)	4 (two each direction)	3 if facing in one direction; 6 if facing in two directions

* For wooden barricades nominal lumber dimensions will be satisfactory

** For rails less than 3 feet long, 4 inch wide stripes shall be used

2.5 LIGHTING DEVICES

- A. Lighting devices shall conform to Part 6, Section 6F.75 of the MUTCD and be as specified herein.

B. Batteries: Storage batteries or other bulk power sources, not part of a monolithic flasher unit shall be located as far as practicable from the traveled way and at ground level. Single flasher and steady burning units with self-contained batteries shall weigh not more than seven (7) pounds and when located on traffic control devices shall be securely fastened with the bottom tangent of the lens at 36 inches above the existing ground level. Battery powered dual alternate flashers located on advance warning signs shall have the battery power source located as far as practicable from the traveled way and at ground level.

C. Flashing Warning Lights

1. Low intensity flashing warning lights shall be installed on traffic control devices where specified elsewhere herein. Low intensity lights shall be battery operated yellow flashing lights with a one piece lens not less than seven inches in diameter. They shall flash at a rate of 55-75 flashes per minute and the flash duration shall be ten percent of each flash cycle. Light intensity shall not drop below ten candelas during the first 336 hours of continuous flashing as specified in ITE Standards Requirement 5.0, Paragraph 5.10, Section 1 of the ITE Standards for Flashing and Steady Burn Barricade Warning Lights. The lens shall be externally illuminated by reflex-reflection of the light from the headlights of the oncoming automotive traffic. Intensity when acting as a reflex-reflector shall be as in ITE Standard Requirement 5, Paragraph 5.30. If designed with a reflex reflector ring, the ring shall not be less than 1/2-inch in width around the periphery of the lens. Manufacturing design requirements shall conform to the ITE Standard as specified in the following requirements:

Lens requirements.....	6.00
Head and Housing.....	7.00
Photoelectric Controls.....	8.00
Testing, Quality and Marking.....	9.00

2. Low intensity flashing warning lights when used where specified shall be kept lighted as specified for steady burning lights.

D. Steady Burning Warning Lights

1. Steady burning lights shall be installed on traffic control devices where specified elsewhere herein. Steady burning lights shall have low wattage yellow electric lamps having a minimum of ten beam candle power. They may be self-contained units with batteries or may be operated with a portable electric generator or from available utility lines. When a circuit in excess of fifty volts is used and such circuits including the light units are within reach of a person who can make contact with the ground, they shall be equipped with an UL approved ground-fault circuit interrupter. Steady burning lights when used where specified shall be kept lighted from one hour before sunset until one hour after sunrise, and through all hours of fog, smog, and other adverse atmospheric conditions affording insufficient visibility for the safe operation of traffic.

2.6 PAVEMENT MARKINGS

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- A. Temporary pavement markings shall be reflectorized plastic tape specifically designed for this purpose or traffic paint and glass beads conforming to the Standard Specifications. Color shall be yellow.
- B. Painted temporary pavement markings shall be completely dry before opening roadway to traffic.

2.7 TEMPORARY CONSTRUCTION SIGNS

- A. Temporary construction signs shall conform to Part 6, Section F of the MUTCD and be Regulatory, Warning or guide signs as appropriate as specified herein.

2.8 UNIFORMED TRAFFIC DIRECTORS

- A. Uniformed traffic directors shall be trained and of average intelligence, good physical condition, including sight and hearing, having a mental alertness, a courteous but firm manner, neat appearance and sense of responsibility for the safety of the public. Traffic directors shall wear an orange vest. This garment shall be reflectorized for nighttime operations.

PART 3 EXECUTION

3.1 GENERAL

- A. Keep the portion of the project being used by public traffic, whether it be through or local traffic, in such condition that pedestrian and vehicular traffic will be adequately and safely accommodated, both temporarily and permanently.
- B. Erect, and/or maintain in substantial manner and good condition striping, barricades, signs, lights, traffic signals, cones, and other warning and danger signals and devices, including flagmen and uniformed traffic directors, appropriate and adequate for the specific needs.
- C. Traffic control devices are to be provided at work site, closed roads, intersections, open excavations, locations of material storage, standing equipment and other obstructions, at points where usable traffic width of road is reduced, at points where traffic is diverted from its normal course or lanes, and other places of danger to vehicular or pedestrian traffic or to completed work.
- D. Establish, repair, replace and relocate signs, lights, warning and protective services as required.
- E. Do not permit equipment or machinery having Caterpillar or other heavy treads that mar or damage pavements to move over or to operate from newly constructed or existing pavement unless such equipment or machinery is moved on suitable pontoons or trailers.

3.2 EMERGENCY ACCESS

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- A. All streets and building access points shall be maintained such that Emergency Vehicles and Personnel shall have complete 24 hour access.

3.3 PRIVATE DRIVEWAYS

- A. Notify owners of adjoining properties at least twenty-four (24) hours prior to beginning any work which will interfere with their passage.
- B. Provide means of access for pedestrian and vehicular traffic at all private driveways and occupied buildings affected by the work of this contract.
- C. During construction in the vicinity of driveways, access width at driveway entrance shall be plainly marked by lights and other devices as necessary.

3.4 DIVERSION OF TRAFFIC

- A. Any restriction or diversion of traffic at any time shall be subject to approval of the Local Police Department.
- B. Notify Municipal Police and Fire Departments at least twenty-four (24) hours prior to the closing of any roadway to traffic.
- C. In accordance with the laws of 1983, c.84, the CONTRACTOR shall give seventy-two (72) hours notice (by the erection and maintenance of signs near the affected area) whenever a township road must be closed to vehicular traffic for a period of forty-eight (48) hours or more.
- D. In case of an emergency, "every effort shall be made to notify the public as soon as possible of the closing."

3.5 APPLICATION

- A. Barricades
 - 1. Type I and Type II Barricades:
 - a. Type I and Type II barricades shall be used when traffic is maintained through the area being constructed and/or reconstructed.
 - b. Type II barricades shall be used singly or in groups to mark a specific hazard or they may be used in a series for channelizing traffic.
 - 2. Type III Barricades
 - a. Type III barricades shall be erected at points of closure when a road section is closed to traffic.
 - b. Type III barricades may extend completely across a roadway and its shoulder or from curb to curb.

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- c. Type III barricades shall not be used on public thoroughfares without the written permission of the ARCHITECT and the authorities having jurisdiction.
- B. Cones
 - 1. Traffic cones shall be installed to channelize traffic during daylight hours only.
- C. Drums
 - 1. Drums shall be used to delineate the edge of a traveled way, lane changes, lane closures and other similar conditions such as to channelize traffic.
 - 2. Drums may also be used to mark specific hazards.
 - 3. Drums shall not be weighted with sand, water or other materials to the extent that would make them hazardous to motorists.
- D. Lighting Devices
 - 1. During hours of darkness a flashing warning light shall be placed on drums or barricades used singly.
 - 2. Steady burn warning lights shall be used on drums or barricades used in a series for Traffic Channelization.

3.6 UNIFORMED TRAFFIC DIRECTORS

- A. Uniformed traffic directors shall be provided when and where called for by the jurisdictional authority.
- B. The CONTRACTOR may, with the permission of the respective police department, secure the services of uniformed police officers to direct traffic in those parts of the project under the jurisdiction of the respective municipality.
- C. These directors shall be responsible and trained in their duties to direct pedestrian and vehicular traffic, shall act in conformance with the police department and while serving as traffic directors on this project, shall not be required to perform any other duties.
- D. Flagmen who are normally hired to do other work on the project during the same work period shall not be considered as uniformed traffic directors.
- E. When controlling traffic, uniformed traffic directors shall follow the procedures stipulated for flagmen in the MUTCD.

END OF SECTION

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
 - 1. Section 012100 "Allowances" for products selected under an allowance.
 - 2. Section 012500 "Substitution Procedures" for requests for substitutions.
 - 3. Section 014200 "References" for applicable industry standards for products specified.
 - 4. Section 01770 "Closeout Procedures" for submitting warranties.

1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Salvaged items or items reused from other projects are not considered new products. Items that are manufactured or fabricated to include recycled content materials are considered new products, unless indicated otherwise.
 - 3. Comparable Product: Product by named manufacturer that is demonstrated and approved through the comparable product submittal process described in Part 2 "Comparable Products" Article, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model

number or other designation. Published attributes and characteristics of basis-of-design product establish salient characteristics of products.

1. Evaluation of Comparable Products: In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification. Manufacturer's published attributes and characteristics of basis-of-design product also establish salient characteristics of products for purposes of evaluating comparable products.
- C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications; submit a comparable product request or substitution request, if applicable.
 - D. Comparable Product Request Submittal: An action submittal requesting consideration of a comparable product, including the following information:
 1. Identification of basis-of-design product or fabrication or installation method to be replaced, including Specification Section number and title and Drawing numbers and titles.
 2. Data indicating compliance with the requirements specified in Part 2 "Comparable Products" Article.
 - E. Basis-of-Design Product Specification Submittal: An action submittal complying with requirements in Section 013300 "Submittal Procedures."
 - F. Substitution: Refer to Section 012500 "Substitution Procedures" for definition and limitations on substitutions.
- 1.4 QUALITY ASSURANCE
- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
 - B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.
 1. Labels: Locate required product labels and stamps on a concealed surface, or, where required for observation following installation, on a visually accessible surface that is not conspicuous.

2. Equipment Nameplates: Provide a permanent nameplate on each item of service- or power-operated equipment. Locate on a visually accessible but inconspicuous surface. Include information essential for operation, including the following:
 - a. Name of product and manufacturer.
 - b. Model and serial number.
 - c. Capacity.
 - d. Speed.
 - e. Ratings.
3. See individual identification Sections on the Plumbing, HVAC, Fire Protection and Electrical drawings for additional equipment identification requirements.

1.5 COORDINATION

- A. Modify or adjust affected work as necessary to integrate work of approved comparable products and approved substitutions.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products, using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 4. Inspect products on delivery to determine compliance with the Contract Documents and that products are undamaged and properly protected.
- C. Storage:
 1. Provide a secure location and enclosure at Project site for storage of materials and equipment.
 2. Store products to allow for inspection and measurement of quantity or counting of units.
 3. Store materials in a manner that will not endanger Project structure.
 4. Store products that are subject to damage by the elements under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation and with adequate protection from wind.

5. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.

1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 1. Manufacturer's Warranty: Written standard warranty form furnished by individual manufacturer for a particular product and issued in the name of the Owner or endorsed by manufacturer to Owner for not less than two years after Substantial Completion.
 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner and issued in the name of the Owner or endorsed by manufacturer to Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included in the Project Manual, prepare a written document, using indicated form properly executed.
 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.

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4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
 - a. Submit additional documentation required by Architect in order to establish equivalency of proposed products. Unless otherwise indicated, evaluation of "or equal" product status is by the Architect, whose determination is final.

B. Product Selection Procedures:

1. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered unless otherwise indicated.
2. Non-Limited List of Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed or an unnamed product that complies with requirements.
 - a. Non-limited list of products is indicated by the phrase "Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to, the following."
 - b. Provision of an unnamed product is not considered a substitution, if the product complies with requirements.
3. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered unless otherwise indicated.
4. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed or a product by an unnamed manufacturer that complies with requirements.
 - a. Non-limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following."
 - b. Provision of products of an unnamed manufacturer is not considered a substitution, if the product complies with requirements.
5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications may additionally indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in

"Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

- a. For approval of products by unnamed manufacturers, comply with requirements in Section 012500 "Substitution Procedures" for substitutions for convenience.
- C. Visual Matching Specification: Where Specifications require the phrase "match existing or Architect's sample," provide a product that complies with requirements and matches existing conditions or Architect's sample. Architect's decision will be final on whether a proposed product matches.
1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or a similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration of Comparable Products: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with the following requirements:
1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work.
 2. Detailed comparison of significant qualities of proposed product with those of the named basis-of-design product. Significant product qualities include attributes, such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
 3. Evidence that proposed product provides specified warranty.
 4. List of similar installations for completed projects, with project names and addresses and names and addresses of architects and owners, if requested.
 5. Samples, if requested.
- B. Architect's Action on Comparable Products Submittal: If necessary, Architect will request additional information or documentation for evaluation, as specified in Section 013300 "Submittal Procedures."
1. Form of Approval of Submittal: As specified in Section 013300 "Submittal Procedures."
 2. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

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- C. Submittal Requirements, Two-Step Process: Approval by the Architect of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017123 - FIELD ENGINEERING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Survey and field engineering.
- B. Quality control.
- C. Submittals.
- D. Project record documents.

1.2 RELATED SECTIONS

- A. General Conditions: Basic site engineering requirements.
- B. Refer to Section 01 "Execution" for additional Field Engineering and Survey Requirements.

1.3 QUALITY ASSURANCE

- A. Employ a Land Surveyor registered in the State of New Jersey and acceptable to Architect, to perform survey work of this section.
- B. Submit evidence of Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate prior to commencement of survey.

1.4 SUBMITTALS FOR REVIEW

- A. Submit name, address, and telephone number of Surveyor to ARCHITECT five (5) days prior to starting survey work.
- B. On request, submit documentation verifying accuracy of survey work.
- C. After completion of work, submit a certificate signed by the Land Surveyor to ARCHITECT, stating that the elevations and locations of the Work are in conformance with Contract Documents.

1.5 PROJECT RECORD DOCUMENTS

- A. Maintain a complete and accurate log of control and survey work as it progresses.
- B. On completion of major site improvements, prepare a certified survey illustrating dimensions, locations, angles, and elevations of construction and site work.
- C. Submit Record Documents under provisions of Division 1.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

3.1 EXAMINATION

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify ARCHITECT of any discrepancies discovered.

3.2 SURVEY REFERENCE POINTS

- A. Owner will locate and protect survey control and reference points.
- B. Control datum for survey is that indicated on Drawings.
- C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- D. Promptly report to ARCHITECT the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to ARCHITECT.

3.3 SURVEY REQUIREMENTS

- A. Provide field engineering services. Utilize recognized engineering survey practices.
- B. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means.
- C. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
- D. Grid or axis for structures.
- E. Periodically verify layouts by same means.

3.4 SURVEYS FOR MEASUREMENT AND PAYMENT

- A. Perform control surveys to establish measurement reference lines. Notify ARCHITECT prior to starting work.
- B. CONTRACTOR's Responsibilities: Sign surveyor's field notes or keep duplicate field notes, and calculate and certify quantities.

END OF SECTION

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work, including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Coordination of Owner-installed products.
6. Progress cleaning.
7. Starting and adjusting.
8. Protection of installed construction.

- B. Related Requirements:

1. Section 011000 "Summary" for coordination of Owner-performed work and limits on use of Project site.
2. Section 013300 "Submittal Procedures" for submitting surveys.
3. Section 017700 "Closeout Procedures" for replacing defective work, and final cleaning.
4. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For land surveyor.

- B. Certified Surveys: Submit two hard copies & one PDF copy signed by land surveyor.
- C. Certificates: Submit certificate signed by land surveyor, certifying that location and elevation of improvements comply with requirements.

1.5 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Professional Engineer Qualifications: Refer to Section 014000 "Quality Requirements."
- C. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: When cutting and patching structural elements, or when encountering the need for cutting and patching of elements whose structural function is not known, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
 - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:
 - a. Primary operational systems and equipment.
 - b. Fire separation assemblies.
 - c. Air or smoke barriers.
 - d. Fire-suppression systems.
 - e. Plumbing piping systems.
 - f. Mechanical systems piping and ducts.
 - g. Control systems.
 - h. Communication systems.
 - i. Fire-detection and -alarm systems.
 - j. Electrical wiring systems.
 - k. Operating systems of special construction.
 - 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
 - a. Water, moisture, or vapor barriers.
 - b. Membranes and flashings.
 - c. Fire barriers, partitions and walls.

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- d. Equipment supports.
 - e. Piping, ductwork, vessels, and equipment.
 - f. Noise- and vibration-control elements and systems.
4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of specified products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials. Use materials that are not considered hazardous.
- C. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
 - 1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
 - 1. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - 1. Description of the Work, including Specification Section number and paragraph, and Drawing sheet number and detail, where applicable.
 - 2. List of detrimental conditions, including substrates.
 - 3. List of unacceptable installation tolerances.
 - 4. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect in accordance with requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks and existing conditions. If discrepancies are discovered, notify Architect promptly.
- B. Engage a land surveyor experienced in laying out the Work, using the following accepted surveying practices:

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1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 2. Establish limits on use of Project site.
 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 4. Inform installers of lines and levels to which they must comply.
 5. Check the location, level and plumb, of every major element as the Work progresses.
 6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A. Identification: Owner will identify existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.

3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

3.5 INSTALLATION

A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces, unless otherwise indicated on Drawings.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure satisfactory results as judged by Architect. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations, so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy of type expected for Project.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on-site and placement in permanent locations.

F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.

G. Templates: Obtain and distribute to the parties involved templates for Work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions with manufacturer.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.

3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints for the best visual effect, as judged by Architect. Fit exposed connections together to form hairline joints.
- J. Repair or remove and replace damaged, defective, or nonconforming Work.
 1. Comply with Section 017700 "Closeout Procedures" for repairing or removing and replacing defective Work.

3.6 CUTTING AND PATCHING

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
 1. Refer to Section 024119 for a list of existing warranties.
- C. Temporary Support: Provide temporary support of Work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching in accordance with requirements in Section 011000 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

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1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as practicable, as judged by Architect. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch, corner to corner of wall and edge to edge of ceiling. Provide additional coats until patch blends with adjacent surfaces.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 COORDINATION OF OWNER'S PORTION OF THE WORK

- A. Site Access: Provide access to Project site for Owner's construction personnel.
 - 1. Refer to Section 011000 "Summary" for other requirements for Owner-furnished, Owner-installed products
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
 - 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.

3.8 PROGRESS CLEANING

- A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where Work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

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- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.9 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.10 PROTECTION AND REPAIR OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.
- C. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.
- D. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

SECTION 017413 - CLEANING AND RESTORATIONS FOR SITEWORK

PART 1 GENERAL

1.1 DESCRIPTION

- A. Related work specified elsewhere:
 - 1. General requirements for cleaning and restorations: See the General Conditions.
 - 2. Cleaning for specific products or work: Specification Section for that work.
- B. Maintain premises and public properties free from accumulations of waste, debris and rubbish caused by work operations.
- C. At completion of work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials; clean all sight exposed surfaces; leave project clean and ready for occupancy.
- D. At completion of work, restore or replace, when and as directed by the ARCHITECT, any public or private property disturbed or damaged by CONTRACTOR's work operations to a condition at least equal to that existing prior to beginning work, or as otherwise specified. Materials shall be approved by the ARCHITECT.

PART 2 PRODUCTS

2.1 MATERIALS

- A. For temporary and permanent vegetative restoration, use the following materials. All materials shall conform to the applicable Sections of the New Jersey Soil Conservation Service (NJSCS) Standards for Soil Erosion and Sediment Control, and the applicable Sections of the Standard Specifications.
- B. Grass restorations: All grass restoration materials shall conform to the specification sections entitled, "Topsoiling," "Fertilizing and Seeding," and "Mulching."
- C. Pavement restorations: All paving materials shall conform to the Standard Specifications.
- D. Restoration of curbs and other concrete structures:
 - 1. Concrete:
 - a. Shall conform to Section 903.03 of the Standard Specifications.
 - b. Compressive Strength shall conform to specification Section entitled "Concrete for Sitework".
 - 2. Joint fillers: Section 914.01, bituminous cellular type.

3. Curing compound: Section 903.10, white-pigmented liquid.

E. All other materials: As approved by the ARCHITECT or authorities having jurisdiction.

PART 3 EXECUTION

3.1 METHODS OF CONDUCTING WORK - CLEANING

A. Requirements of regulatory agencies: Dispose of all solid waste materials (including concrete, blacktop, trees, stumps, unacceptable backfill material including heavy clay soils, organic materials, silts, rock) in permanently established licensed OSWA (Office of Solid Waste Administration, New Jersey Department of Environmental Protection) landfills, or in temporary landfill sites approved by OWSA.

B. Safety requirements:

1. Hazards control:

- a. Store volatile wastes in covered metal containers, and remove from premises daily.
- b. Prevent accumulation of waste which create a hazardous condition.
- c. Provide adequate ventilation during use of volatile or noxious substances.

2. Conduct cleaning and disposal operation to comply with local ordinances and anti-pollution laws:

- a. Do not burn or bury rubbish and waste materials on project site.
- b. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm or sanitary drains.
- c. Do not dispose of wastes into streams or waterways.

C. Cleaning during construction:

1. Execute periodic cleaning to keep the work, the site, and adjacent properties free from accumulations of waste materials, rubbish and windblown debris resulting from construction operations.
2. Provide on-site containers for the collection of waste materials, debris and rubbish.
3. Remove waste materials, debris and rubbish from site periodically and legally dispose at location provided by CONTRACTOR.

D. Dust control:

1. Wet down dry materials and rubbish to lay dust and prevent blowing dust.
2. The CONTRACTOR shall employ construction methods and means that will keep flying dust to the minimum. He shall provide for the laying of water on the Project, and on roads, streets and other areas immediately adjacent to the Project limits, wherever traffic, or buildings that are occupied or in use, are affected by such dust caused by his hauling or other operations. The CONTRACTOR, shall control dust using calcium chloride, water or other materials approved by the ARCHITECT. If calcium chloride is used, the rate of application shall be approximately 1.5 pounds per square yard. The cost of carrying out the foregoing provisions shall be included in the prices bid for the various items in the Contracts.

The CONTRACTOR shall provide for prompt removal from existing roadways of all dirt and other materials that have been spilled, washed, tracked or otherwise deposited thereon by his hauling and other operations whenever the accumulation is sufficient to cause the formation of mud, interfere with drainage, damage pavements or create a traffic hazard.

E. Final cleaning:

1. Employ skilled workmen for final cleaning.
2. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior surfaces.
3. Broom clean exterior paved surfaces; rake clean other surfaces of the grounds.
4. Remove all temporary buildings and structures built by CONTRACTOR, all temporary works; tools, machinery or other construction equipment furnished by him.
5. Clean insides of manholes, valve boxes, inlets or other structures constructed, reconstructed or reset during CONTRACTOR's operations to remove debris, excess mortar of foreign materials.
6. Prior to final acceptance, CONTRACTOR shall conduct an inspection of all work areas to verify that the entire work is clean.

3.2 METHODS OF CONDUCTING WORK - RESTORATIONS

- A. General: All existing structures, unpaved areas and paved areas disturbed or damaged during the work under this Contract shall be restored or replaced to a condition at least equal to that existing prior to beginning work, or as otherwise specified. The methods of the following Sections of the Standard Specifications.

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- B. Grass restoration: All grass restorations shall comply with the specification sections entitled "Topsoiling," "Fertilizing and Seeding," and "Mulching."
- C. For pavement and concrete restorations, use the following methods. All methods shall conform to the applicable Sections of the Standard Specifications.
 - 1. Bituminous pavement restoration: All methods shall conform to the Standard Specifications.
 - 2. Concrete curb restoration: All methods shall conform to Specification Section entitled "Concrete for Sitework".
- D. For temporary and permanent vegetative restoration, use the following methods. All methods shall conform to the applicable Sections of the New Jersey Soil Conservation Service (NJSCS) Standards for Soil Erosion and Sediment Control, and the applicable Sections of the Standard Specifications.
 - 1. Soil Erosion and Sediment Control Measures: All materials shall conform to Specification Section entitled "Temporary Soil Erosion and Sediment Control."
 - 2. Topsoiling: All materials shall conform to Specification Sections entitled "Topsoiling."
 - 3. Fertilizing and Seeding: All materials shall conform to Specification Section entitled "Fertilizing and Seeding."
 - 4. Mulching: All materials shall conform to Specification Section entitled "Mulching."
- E. Restorations of curbs and other concrete structures:
 - 1. Curbs: Section 607 of the Standard Specifications.
 - 2. Other concrete structures: Restore in accordance with applicable Articles of the Standard Specifications.
- F. All other restorations: Restore in accordance with applicable Articles of the Standard Specifications, or as approved by the ARCHITECT or authorities having jurisdiction.

END OF SECTION

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:

1. Submittals.
2. Substantial Completion procedures.
3. Final completion procedures.
4. Punch lists.
5. Warranties.
6. Final cleaning.
7. Repair of the Work.

- B. Related Requirements:

1. Section 012900 "Payment Procedures" for requirements for Applications for Payment for Substantial Completion and Final Completion.
2. Section 017823 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
3. Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
4. Section 017900 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.3 DEFINITIONS

- A. List of Incomplete Items: Contractor-prepared list of items to be completed or corrected, prepared for the Architect's use prior to Architect's inspection, to determine if the Work is substantially complete.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of cleaning agent.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.5 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.
- C. Field Report: For pest-control inspection.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items required by other Sections.

1.7 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's "punch list"), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction, permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 2. Submit closeout submittals specified in other Division 01 Sections, including Project Record Documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
 - 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number.
 - a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Owner's signature for receipt of submittals.
 - 5. Submit testing, adjusting, and balancing records.
 - 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

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- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Complete startup and testing of systems and equipment.
 2. Perform preventive maintenance on equipment used prior to Substantial Completion.
 3. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
 4. Terminate and remove temporary facilities from Project site, along with construction tools, and similar elements.
 5. Complete final cleaning requirements.
 6. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for Final Completion.
 3. The Architect and their Consultants have in their Basic Scope of Services one punch list visit and one Final Completion inspection. If all outstanding work is not completed at the time of the Final Completion inspection, the Owner has the right to back charge the Contractor for their Professionals additional time.

1.8 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining Final Completion, complete the following:
1. Submit a final Application for Payment in accordance with Section 012900 "Payment Procedures."
 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit pest-control final inspection report.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled

requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.9 LIST OF INCOMPLETE ITEMS

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from existing building to addition, listed by room or space number.
 2. Organize items applying to each space by major element, including categories for ceilings, individual walls, floors, equipment, and building systems.
 3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Page number.
 4. Submit list of incomplete items in the following format:
 - a. PDF Electronic File: Architect will return annotated file.

1.10 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
- C. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
 1. Submit with close out documentation.

D. Warranties in Paper Form:

1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

E. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site of rubbish, waste material, litter, and other foreign substances.
 - b. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.
 - c. Remove tools, construction equipment, machinery, and surplus material from Project site.

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- d. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - e. Remove debris and surface dust from limited-access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - f. Clean flooring, removing debris, dirt, and staining; clean according to manufacturer's recommendations.
 - g. Vacuum and mop concrete.
 - h. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
 - i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - j. Remove labels that are not permanent.
 - k. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - l. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - m. Clean ducts, blowers, and coils if units were operated during construction or that display contamination with particulate matter on inspection.
 - n. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
 - o. Clean strainers.
 - p. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.
- D. Construction Waste Disposal: Comply with waste-disposal requirements in Section 015000 "Temporary Facilities and Controls."

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations required by Section 017300 "Execution" before requesting inspection for determination of Substantial Completion.

END OF SECTION 017700

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SECTION 017710 - PROJECT CLOSEOUT SUBMITTALS

Submit **one copy** of the following to the Architect prior to Project closeout. This form is an internal form used by REGAN YOUNG ENGLAND BUTERA and shall be used only as a guide for submissions by the Contractor. Additional items not included on this list may be required at the discretion of the Architect or as referenced in their individual sections.

CONTRACTOR: _____

ADDRESS: _____

TELEPHONE NUMBER: _____

<u>ITEM</u>	<u>DATE RECEIVED</u>
1. O/P Cert. of Substantial Completion (G704)	_____
2. O/P Final App. For Payments (G702 & G703)	_____
3. O/P Affid. of Paymts. of Debts & Claims (G706)	_____
4. O/P Affid. of Release of Liens (G706A).....	_____
5. O/P Consent of Surety to Final Payment (G707)	_____
6. P Tests & Inspections Log	_____
7. O/P Maintenance Bond (Section 017721).....	_____
8. O/P Subcontractor Guaranty (Section 017722). One for every sub- Contractor used on the Project.....	_____
9. O/P Statement on Business letterhead that all Monthly Workforce Tracking Reports and Weekly-Certified Payroll Records have been submitted to the Owner and the proper agencies	_____
10. O/P Certificate of Compliance on Business letterhead stating that materials and products meet specified standards or that work was done in compliance with approved construction documents	_____
11. P Operation & Maintenance Manuals. Manuals for each Trade, i.e. GC, Plumbing, HVAC, etc. shall have its own folder. Within that folder each Manual shall be titled w/ the "Item Name" and Manu- facturer's Name. Also provide an O&M Index, listing the Trade folder and what is in it by spec Division No. & item name.....	_____

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- 12. **P** Copies of All Manufacturer Warranties (Refer to spec sections).
 Warranties for each Trade, i.e. GC, Plumbing, HVAC, etc. shall have its own folder. Within that folder each Warranty shall be titled w/ the "Item Name" & Manufacturers Name. Also provide an O&M Index, listing the Trade folder & what is in it by spec Division No. and item name
- 13. **P** Extra "Attic Stock" Provide copy of transmittal to Owner (see Project Manual Sections with ● adjacent to page #.....)
- 14. **P** Certificate of Occupancy/Certificate of Approval.....
- 15. **P** Resolution of Punch List Items
- 16. **O/P** Soil Treatment Application Report
- 17. **O/P** Soil Conservation District Final Compliance Inspection
- 18. **O/P** Land Surveyor Certification (Section 017123)
- 19. **O/P** Certified Survey (Section 017300).....

O – Original paper copy required.

P – PDF copy required: **Submit one pdf copy of all closeout documentation as per the Section 017700 of the Project Manual on a thumb drive.** Each item listed above shall be a separate pdf using the titles above.

Provide separate folders for each of the following on the thumb drive:

- a. Close Out documents: 01 through 10 of the attached Section 017710;
- b. Architectural O&Ms, warranties & record documents;
- c. HVAC O&Ms, warranties & record documents;
- d. Plumbing O&Ms, warranties & record documents; and
- e. Electrical O&Ms, warranties & record documents.

Items 02 through 10 above shall be submitted together after all other required closeout submittals have been received and approved by the Architect.

Final payment will not be made until all required closeout submittals have been received.

END OF SECTION 017710

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SECTION 017721 - MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned

as principal, and a _____

Corporation organized and existing under the laws of the

State of _____ and
duly authorized to do business in the State of New Jersey, as Surety, are held and firmly bound
unto the

as Owner, in the penal sum of _____

(10%) of the Final Contract Amount)

for payment of which, well and truly to be made, we hereby, jointly, and severally, bind ourselves,
our heirs, executors, administrators, successors and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, That whereas

the above named principal did on the _____ day of, _____

20_____, enter into a Contract with the Owner for

(Project Name)

which said Contract is made a part of this bond the same as though set forth herein.

NOW, if the said principal shall remedy without cost to the Owner any defects which may develop
during the TWO (2) year(s) guarantee period of the work performed under the said Contract,
provided such defects, in the judgment of the Owner are caused by defective or inferior materials
or workmanship, then this obligation shall be void, otherwise it shall be and remain in full force
and effect.

IT IS FURTHER AGREED that any alterations which may be made in the terms of the Contract or
in the work to be done or materials to be furnished or labor to be supplied or performed under it, or
the giving by the Owner of any extension of time for the performance of the Contract, or any other
forbearance on the part of either the Owner or the Principal to the other, shall not in any way release
the Principal and the Surety or Sureties, or either or any of them, their heirs, executors,

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administrators, successors or assigns, from their liability hereunder, notice to the Surety or Sureties of any such alterations, extension or forbearance being hereby waived.

IN WITNESS WHEREOF, the said Principal and Surety have duly executed this bond under seal the day and year written below.

BOND NUMBER: _____

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

(Principal) (Seal)

(Witness)

(Title)

(Surety) (Seal)

(Witness)

(Title)

END OF SECTION 017721

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SECTION 017722 – SUBCONTRACTOR GUARANTY

WHEREAS:

The Contractor, _____

has entered into a Contract with the Owner, _____

_____ for the construction of _____

_____ at _____

the Work.

AND WHEREAS:

The Subcontractor, _____

has entered into an agreement with the Contractor for the performance of a portion of said work.

NOW THEREFORE:

Pursuant to the terms of the Contract, the Contractor and the Subcontractor, for their heirs, executors, administrators, successors and assigns, jointly and severally guaranty

_____, the Item, as

described in the Specifications, Page(s) _____ through _____ for TWO (2) year(s), the

period, starting from _____ (date indicated in the Certificate of Substantial Completion).

FURTHERMORE:

In addition to the requirements of the Conditions of the Contract requiring correction of the work within a period of TWO (2) year(s) from Date of Substantial Completion, the Contractor and the Subcontractor do hereby guaranty and warrant that they will make good and replace, at their own cost and expense, all defects appearing in the Item during the Period and be responsible for all damage caused to the Owner by such defects or by the work required to remedy such defects. All corrections to defective work shall be made at the convenience of the Owner and shall be performed in a good workmanlike manner.

IT IS UNDERSTOOD THAT:

This Guaranty shall in no way be construed to affect, in any manner, any of the provisions of the Contract or to modify or limit any of the obligations, liabilities or duties of the Contractor or Subcontractor.

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IT IS FURTHER UNDERSTOOD THAT:

This Guaranty shall remain binding and irrevocable during the Period and that the Contractor and the Subcontractor shall not contest the validity of, or in any way attempt to revoke or withdraw from this Guaranty for any cause whatsoever, whether arising before or after the execution of the Contract or this Guaranty.

IN WITNESS WHEREOF:

The undersigned Contractor and Subcontractor have caused this

Instrument to be signed and executed this _____ day

Of _____, 20_____.

Subcontractor

WITNESS:

BY: _____

TITLE: _____

Contractor

WITNESS:

BY: _____

TITLE: _____

END OF SECTION 017722

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Systems and equipment operation manuals.
 - 2. Systems and equipment maintenance manuals.
 - 3. Product maintenance manuals.
- B. Related Requirements:
 - 1. Section 013300 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.

1.3 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS

- A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 - 1. Architect will comment on whether content of operation and maintenance submittals is acceptable.
 - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operation and maintenance manuals in the following format:

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1. Submit on digital thumb drive. Enable reviewer comments on draft submittals.
 2. Submit one paper copy to Architect.
- C. Initial Manual Submittal: Submit draft copy of each manual at least 20 days before commencing demonstration and training. Architect will comment on whether general scope and content of manual are acceptable.
- D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least seven days before commencing demonstration and training. Architect will return copy with comments.
1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within seven days of receipt of Architect's comments and prior to commencing demonstration and training.
- E. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

1.5 FORMAT OF OPERATION AND MAINTENANCE MANUALS

- A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
 2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.
- B. Manuals, Paper Copy: Submit manuals in the form of hard-copy, bound and labeled volumes.
1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
 - b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment. Enclose title pages and directories in clear plastic sleeves.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch (215-by-280-mm) white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

1.6 REQUIREMENTS FOR OPERATION AND MAINTENANCE MANUALS

- A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 1. Title page.
 2. Table of contents.
 3. Manual contents.
- B. Title Page: Include the following information:
 1. Subject matter included in manual.
 2. Name and address of Project.
 3. Name and address of Owner.
 4. Date of submittal.
 5. Name and contact information for Contractor.
 6. Name and contact information for Architect.
 7. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
 8. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
 1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

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- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.7 SYSTEMS AND EQUIPMENT OPERATION MANUALS

- A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.
 - 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 - 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
 - 1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
 - 2. Performance and design criteria if Contractor has delegated design responsibility.
 - 3. Operating standards.
 - 4. Operating procedures.
 - 5. Operating logs.
 - 6. Wiring diagrams.
 - 7. Control diagrams.
 - 8. Piped system diagrams.
 - 9. Precautions against improper use.
 - 10. License requirements including inspection and renewal dates.
- C. Descriptions: Include the following:
 - 1. Product name and model number. Use designations for products indicated on Contract Documents.
 - 2. Manufacturer's name.
 - 3. Equipment identification with serial number of each component.
 - 4. Equipment function.
 - 5. Operating characteristics.
 - 6. Limiting conditions.
 - 7. Performance curves.
 - 8. Engineering data and tests.

9. Complete nomenclature and number of replacement parts.
- D. Operating Procedures: Include the following, as applicable:
1. Startup procedures.
 2. Equipment or system break-in procedures.
 3. Routine and normal operating instructions.
 4. Regulation and control procedures.
 5. Instructions on stopping.
 6. Normal shutdown instructions.
 7. Seasonal and weekend operating instructions.
 8. Required sequences for electric or electronic systems.
 9. Special operating instructions and procedures.
- E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- F. Piped Systems: Diagram piping as installed and identify color coding where required for identification.

1.8 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.
1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds as described below.
- C. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- D. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:
1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component

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incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

- a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 3. Identification and nomenclature of parts and components.
 4. List of items recommended to be stocked as spare parts.
- E. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
1. Test and inspection instructions.
 2. Troubleshooting guide.
 3. Precautions against improper maintenance.
 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 5. Aligning, adjusting, and checking instructions.
 6. Demonstration and training video recording, if available.
- F. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- G. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.
- I. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
1. Do not use original project record documents as part of maintenance manuals.

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1.9 PRODUCT MAINTENANCE MANUALS

- A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- C. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- D. Product Information: Include the following, as applicable:
 - 1. Product name and model number.
 - 2. Manufacturer's name.
 - 3. Color, pattern, and texture.
 - 4. Material and chemical composition.
 - 5. Reordering information for specially manufactured products.
- E. Maintenance Procedures: Include manufacturer's written recommendations and the following:
 - 1. Inspection procedures.
 - 2. Types of cleaning agents to be used and methods of cleaning.
 - 3. List of cleaning agents and methods of cleaning detrimental to product.
 - 4. Schedule for routine cleaning and maintenance.
 - 5. Repair instructions.
- F. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Record specifications.
 - 3. Record Product Data.
 - 4. Miscellaneous record submittals.
- B. Related Requirements:
 - 1. Section 017300 "Execution" for final survey.
 - 2. Section 017700 "Closeout Procedures" for general closeout procedures.
 - 3. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit copies of Record Drawings as follows:
 - a. Initial Submittal:
 - 1) Submit one paper-copy set(s) of marked-up record prints.
 - 2) Submit PDF electronic files of scanned record prints and one set(s) of file prints.
 - 3) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
 - b. Final Submittal:
 - 1) Submit PDF electronic files of scanned Record Prints and one set(s) of file prints.

- 2) Print each drawing, whether or not changes and additional information were recorded.
- B. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.
 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.
- C. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit annotated PDF electronic files and directories of each submittal.

1.4 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
 1. Preparation: Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - d. Record and check the markup before enclosing concealed installations.
 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Construction Change Directive.
 - k. Changes made following Architect's written orders.
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.
 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.

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4. Mark record prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Format: Annotated PDF electronic file with comment function enabled.
 3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
 4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

1.5 RECORD PRODUCT DATA

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and revisions to Project Record Documents as they occur; do not wait until end of Project.
- B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders and Record Drawings where applicable.
- C. Format: Submit Record Product Data as scanned PDF electronic files.

1.6 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

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- B. Format: Submit miscellaneous record submittals as PDF electronic file.
 - 1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

1.7 MAINTENANCE OF RECORD DOCUMENTS

- A. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017839

SECTION 017900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Instruction in operation and maintenance of systems, subsystems, and equipment.

1.3 QUALITY ASSURANCE

- A. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.
- B. Preinstruction Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to demonstration and training including, but not limited to, the following:
 - 1. Inspect and discuss locations and other facilities required for instruction.
 - 2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
 - 3. Review required content of instruction.
 - 4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

1.4 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed and approved by Architect.

1.5 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
 - 1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
 - 2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Systems and equipment operation manuals.
 - c. Systems and equipment maintenance manuals.
 - d. Product maintenance manuals.
 - e. Project Record Documents.
 - f. Identification systems.
 - g. Warranties and bonds.
 - h. Maintenance service agreements and similar continuing commitments.
 - 3. Operations: Include the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.

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4. Adjustments: Include the following:
 - a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
5. Troubleshooting: Include the following:
 - a. Diagnostic instructions.
 - b. Test and inspection procedures.
6. Maintenance: Include the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning.
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
7. Repairs: Include the following:
 - a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

1.6 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017823 "Operation and Maintenance Data."
- B. Set up instructional equipment at instruction location.

1.7 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

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- C. Scheduling: Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. Schedule training with Owner with at least seven days' advance notice.
- D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
- E. Cleanup: Collect used and leftover educational materials and remove from Project site. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION 017900

SECTION 023000 - SUBSURFACE INVESTIGATION

PART 1 GENERAL

1.1 DESCRIPTION

- A. Subsurface investigation includes the excavation of test pits to ascertain the location of buried utilities or surface conditions.
- B. Before laying pipes or constructing any structure, the CONTRACTOR shall ascertain the location and grade of utility pipes and other subsurface structures which may interfere with such construction. Test pits shall be excavated wherever necessary to obtain the required information, subject to the approval of the ARCHITECT.

PART 2 PRODUCTS

No products are involved.

PART 3 EXECUTION

3.1 METHODS OF WORK

- A. The approximate location of known utility structures and facilities that may be encountered within and adjacent to the limits of the work are shown on the plans. The accuracy and completeness of this information is not guaranteed by the ARCHITECT, and the bidder is advised to ascertain for himself all the facts concerning the location of these utilities.
- B. The CONTRACTOR shall adhere to Section 105.07, Cooperation with Utilities, of the Standard Specifications regarding location of and construction around public utilities.
- C. All tests pits shall be backfilled with the material excavated. All backfill shall be thoroughly compacted in accordance with Specification Section entitled Site Excavation, Filling and Grading.
- D. The CONTRACTOR shall permit the owners of the utilities of their agents, access to the site of the work at all times, in order to relocate or protect their facilities, and he shall cooperate with them in performing this work.
- E. The CONTRACTOR shall cooperate with the utility owners concerned and shall notify them not less than ten (10) days in advance of the time he proposes to perform any work that will endanger or affect their facilities.
- F. The CONTRACTOR shall call 1-800-272-1000 for a utility mark-out prior to any excavation activities.

END OF SECTION

SECTION 024113 - SELECTIVE SITE DEMOLITION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.
- B. Refer to Division 31 section "Selective Site Clearing" for site clearing and removal of above and below grade improvements.

1.2 DESCRIPTION

- A. The work of this section includes:
 - 1. Demolition, removal and/or disposal of selected site elements as shown on the Plans including, but not limited to, buildings, bituminous and concrete pavement, concrete curb, structures and all other obstructions .
 - 2. Patching and repairs.

1.3 DEFINITIONS

- A. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the OWNER's property.
- B. Remove and Salvage: Items indicated to be removed and salvaged remain the OWNER's property. Remove, clean, and pack or create items to protect against damage. Identify contents of containers and deliver to OWNER's designated storage area.
- C. Remove and Reinstall: Remove items indicated; clean, service, and otherwise prepare them for reuse; store and protect against damage. Reinstall items in the same locations or in locations indicated.
- D. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the ARCHITECT, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in the original and/or new locations.

1.4 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the OWNER's property, demolished materials shall become the CONTRACTOR's property and shall be removed from the site with further disposition at the CONTRACTOR's option.
- B. Historical items indicated remain the OWNER's property. Carefully remove and salvage each item in a manner to prevent damage and deliver promptly to the OWNER.

- C. Historical items, relics, and similar objects including, but not limited to, cornerstones, and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to the OWNER, which may be encountered during selective demolition, remain the OWNER's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to the OWNER.

1.5 QUALITY ASSURANCE

- A. Engage an experienced firm that has successfully completed selective demolition work similar to that indicated for this project.
- B. Comply with governing NJDEP notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.6 PROJECT CONDITIONS

- A. The OWNER and the ARCHITECT assumed no responsibility for actual condition of site elements to be selectively demolished.
- B. Storage or sale of removed items or materials on-site will not be permitted.

1.7 SCHEDULING

- A. Arrange demolition schedule so as not to interfere with OWNER's on-site operations. Coordinate with schedule and phasing indicated elsewhere.

PART 2 PRODUCTS

2.1 REPAIR MATERIALS

- A. Use repair materials identical to existing materials.
 - 1. Where identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 2. Use materials whose installed performance equals or surpasses that of existing materials.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

3.2 UTILITY SERVICES

- A. Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
- B. Do not interrupt existing utilities serving occupied or operating facilities, except when authorized in writing by OWNER and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to OWNER and to governing authorities. Provide not less than 48 hours' notice to OWNER if shutdown of service is required during changeover.
- C. Locate, identify, disconnect, and seal or cap off indicated utility services to be selectively demolished.
 - 1. Arrange to shut off indicated utilities with utility companies.
 - 2. Where utility services are required to be removed, relocated, or abandoned, provide bypass connections to maintain continuity of service to other parts of the building before proceeding with selective demolition.

3.3 PREPARATION

- A. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around selective demolition area.
 - 1. Erect temporary protection, such as walks, fences, railing, canopies, and covered passageways, where required by authorities having jurisdiction.
 - 2. Protect existing site improvement, appurtenances, and landscaping to remain.
 - 3. Erect a plainly visible fence around drip line of individual trees of around perimeter drip line of groups of trees to remain.

3.4 POLLUTION CONTROLS

- A. Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations.
- B. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- C. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before start of selective demolition.

3.5 SELECTIVE DEMOLITION

- A. Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete work within limitation of governing regulation and as follows:
 - 1. Proceed with selective demolition systematically.
 - 2. Dispose of demolished items and materials promptly. On-site storage or sale of removed items is prohibited.
 - 3. Return elements of construction and surfaces to remain to condition existing before start of selective demolition operations.
- B. Demolish concrete and masonry in smaller sections. Cut concrete and masonry at juncture with construction to remain, using power-driven saw or hand tools; do not use power-driven impact tools.
- C. Break up and remove concrete slabs on grade, unless otherwise shown to remain.
- D. Saw cut asphalt paving at juncture with construction to remain, using power driven asphalt saw.

3.6 PATCHING AND REPAIRS

- A. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective demolition operations.
- B. Where repairs to existing surface are required, patch to produce surfaces suitable for new materials.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Do not burn demolished materials.
- C. Transport demolished materials off OWNER's property and legally dispose of them.

END OF SECTION

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Existing warranties.
2. Demolition and removal of selected portions of building or structure.
3. Demolition and removal of selected site elements.
4. Salvage of existing items to be reused or recycled.

B. Related Requirements:

1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy
2. Section 017300 "Execution" for cutting and patching procedures.
3. Sections 312300.10 and 312316.10 for site clearing and removal of above- and below-grade improvements not part of selective demolition.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.
- B. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.
- C. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.5 INFORMATIONAL SUBMITTALS

- A. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
- B. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1.6 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.7 FIELD CONDITIONS

- A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- D. OSHA Respirable Crystalline Silica Standard for Construction: Contractor shall fully comply with OSHA Standard 29 CFR 1926.1153, which requires employer to limit worker exposure to respirable crystalline silica and to take other steps to protect workers.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

1.8 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties. Notify warrantor before proceeding. Existing warranties include the following:

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1. HVAC System:
Mike Dempsey
SANDER MECHANICAL
m.dempsey@sanmech.com
 2. Fire Detection System:
FORTRESS PROTECTION
(856) 424-3000
- B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
 1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.
- B. Verify that hazardous materials have been remediated before proceeding with building demolition operations.

3.2 PREPARATION

- A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 - 2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 3. Disconnect, demolish, and remove plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
 - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 - e. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.

3.4 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 1. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 - 2. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 - 3. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
 - 1. Strengthen or add new supports when required during progress of selective demolition.
- C. Remove temporary barricades and protections where hazards no longer exist.

3.5 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 5. Maintain fire watch during and for at least four hours after flame-cutting operations.
 6. Maintain adequate ventilation when using cutting torches.
 7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 10. Dispose of demolished items and materials promptly.
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse.
 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
 3. Protect items from damage during transport and storage.
 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch (19 mm) at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.
- B. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.
- C. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.
- D. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.
- E. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings." Do not use methods requiring solvent-based adhesive strippers.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Hazardous Waste: Remove, package, transport and dispose of all mercury thermostats, fluorescent light fixture ballasts containing polychlorinated biphenyls (PCBs), fluorescent light bulbs and all items containing lead cadmium batteries (such as exit signs and emergency lighting fixtures) and any other items classified as universal waste in accordance with the provisions of the regulations promulgated by the United States Environmental Protection Agency (40 CFR 273) and the New Jersey Department of Environmental Protection (N. J. A. C. 7:26A-7).
- C. Burning: Do not burn demolished materials.

3.8 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

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3.9 SELECTIVE DEMOLITION SCHEDULE

- A. Prior to the commencement of the Work, the Contractor shall review with the Owner all materials & equipment to be removed. Should the Owner opt to keep any items, the Contractor shall salvage & deliver the items to the Owner on the site where so directed & properly dispose of all other demolition & construction materials.

END OF SECTION 024119

SECTION 031100 - CONCRETE FORMWORK FOR SITEWORK

PART 1 GENERAL

1.1 SUMMARY

- A. Provide formwork in accordance with provisions of this section for cast-in -place concrete shown on the Drawings or required by other sections of these Specifications.

1.2 SUBMITTALS

- A. Product Data: Within 15 calendar days after the CONTRACTOR has received the OWNER'S Notice to Proceed, submit manufacturer's data and installation instructions for proprietary materials including form coatings, ties, and accessories, and manufactured form systems if used.

1.3 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.
- B. Design of formwork is the CONTRACTOR's responsibility.
- C. Standards: In addition to complying with pertinent regulations of governmental agencies having jurisdiction, comply with pertinent provisions of ACI 347.

PART 2 PRODUCTS

2.1 FORM MATERIALS

- A. Except for metal forms, use new materials. Materials may be reused during progress of the work, provided they are completely cleaned and reconditioned, recoated for each use, and capable of producing formwork of the required quality.
- B. For footings and foundations, use Douglas Fir boards or planks secured to wood or steel stakes, substantially constructed to shapes indicated and to support the required loads.
- C. For studs, wales, and supports, use standard grade or better Douglas Fir, dimensions as required to support the loads but not less than 2" x 4".
- D. Wall forms:
 - 1. Exposed concrete surfaces:
 - a. Use 3/4" minimum thickness Douglas Fir plywood, Grade B/B, Class I or II, exterior, sanded both sides, complying with PS-1.
 - b. Seal edges and coat both faces with colorless coating which will not affect application of applied finishes.

2. Unexposed concrete surfaces:
 - a. Use 1" x 6" shiplap Douglas Fir boards, surfaced one side and two edges, or 3/4" minimum thickness Douglas Fir plywood, Grade B/B plyform Class I or II, sanded both sides, mill-oiled.

2.2 FORM TIES

- A. Hold inner and outer forms of vertical concrete together with combination steel ties and spreaders approved by the ARCHITECT.
 1. Space ties symmetrically in tiers and rows, each tier plumb from top to bottom and each row level.
 2. At horizontal pour lines, locate ties not more than 6" below the pour lines. Tighten after concrete has set and before the next pour is made.
 3. For exposed concrete surfaces, provide form ties of removable type with she-bolts equipped with permanent plugs and a system approved by the ARCHITECT for fixing the plugs in place.

2.3 DESIGN OF FORMWORK

- A. General:
 1. Design, erect, support, brace, and maintain formwork so it will safely support vertical and lateral loads that might be applied, until such loads can be supported by the concrete structure.
 2. Carry vertical and lateral loads to ground by formwork system and in-place construction that has attained adequate strength for that purpose.
 3. Construct formwork so concrete members and structures are or correct size, shape, alignment elevation, and position.
 4. Design forms and falsework to include assumed values of live load, dead load, weight of moving equipment operated on the framework, concrete mix height of concrete drop, vibrator frequency, ambient temperature, foundation pressures, stresses, lateral stability, and other factors pertinent to safety of the structure during construction.
 5. Provide shores and struts with positive means of adjustment capable of taking up formwork settlement during concrete placing operations, using wedges or jacks or a combination thereof.
 6. Provide trussed supports when adequate foundations for shores and struts cannot be secured.

7. Support form materials by structural members spaced sufficiently close to prevent objectionable deflection.
8. Fit forms of continuous surfaces to provide accurate alignment, free from irregularities, and within the allowable tolerances.
9. Provide formwork sufficiently tight to prevent leakage of cement paste during concrete placement. Solidly butt joints, and provide backup material at joints as required to prevent leakage and prevent fins.
10. Provide camber in formwork as required for anticipated deflections due to weight and pressures of fresh concrete and construction loads.

2.4 EARTH FORMS

- A. Side forms for footing may be omitted, and concrete may be placed directly against excavation, only when requested by the CONTRACTOR and approved by the ARCHITECT.
- B. When omission of forms is accepted, provide additional concrete 1" on each side of the minimum design profiles and dimensions shown on the Drawings.

PART 3 EXECUTION

3.1 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this sections will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.2 FORM CONSTRUCTION

- A. General:
 1. Construct forms complying with ACI 347 to the exact sizes, shapes, lines, and dimensions shown, and as required to obtain accurate alignment, location, grades, and level and plumb work in the finished structure.
 2. Provide for openings, offsets, keyways, recesses, moldings, reglets, chamfers, blocking, screeds, bulkheads, anchorages, inserts, and other features as required.
 3. Tolerances shall be in accordance with the Section 3.3.1 of ACI 347.
- B. Fabrication:
 1. Fabricate forms for easy removal without hammering or prying against concrete surfaces.
 2. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces.

3. Kerf wood inserts for forming keyways, reglets, recesses, and the like, to prevent swelling and assure ease of removal.
 4. Provide top forms for inclined surfaces where so directed by the ARCHITECT.
- C. Forms for exposed concrete:
1. Drill forms to suit ties being used, and to prevent leakage of cement paste around tie holes. Do not splinter forms by driving ties through improperly prepared holes.
 2. Provide sharp, clean corners at intersecting planes, without visible edges or offsets. Back the joints with extra studs or girts to maintain true, square intersections.
 3. Use extra studs, wales, and bracing to prevent objectionable bowing of forms between studs, and to avoid bowed appearance in concrete. Do not use narrow strips of form material which will produce bow.
- D. Corner treatment:
1. Unless shown otherwise, form chamfers with 1" x 1" strips, accurately formed and surfaced to produce uniformly straight lines and tight edges.
 2. Extend terminal edges to required limit, and miter the chamfer strips at changes in direction.
- E. Locate control joints as indicated on the Drawings and, where required but not shown on the Drawings, as approved by the ARCHITECT.
- F. Provisions for other trades:
1. Provide openings in concrete formwork to accommodate work of other trades.
 2. Verify size and location of openings, recesses, and chases with the trade requiring such items.
 3. Accurately place and securely support items to be built into the concrete.

3.3 FORM COATINGS

- A. Coat form contact surfaces with form coating compound before reinforcement is placed.
1. Do not allow excess form coating material to accumulate in the forms or to come in contact with surfaces which will bond to fresh concrete.
 2. Apply the form coating material in strict accordance with its manufacturer's recommendations.

3.4 REMOVAL OF FORMS

A. General:

1. Do not disturb or remove forms until the concrete has hardened sufficiently to permit form removal with complete safety.
2. Do not remove shoring until the member has acquired sufficient strength to support its own weight, the load upon it, and the added load of construction.
3. Do not strip floor slabs in less than two days.
4. Do not strip wall concrete in less than 24 hours. Do not backfill until concrete has cured seven days.
5. When stripping time is less than specified curing time, measures shall be taken to provide adequate curing and thermal protection of the stripped concrete.

B. Finished surfaces:

1. Exercise care in removing forms from finished concrete surfaces so that surfaces are not marred or gouged, and that corners are true, sharp, and unbroken.
2. Release sleeve nuts or clamps, and pull the form ties neatly.
3. Do not permit steel spreaders, form ties, or other metal to project from, or be visible on, any concrete surface except where so shown on the Drawings.
4. Solidly pack form tie holes, rod holes, and similar holes in the concrete. For packing, use the cement grout specified in Specification Section entitled "Concrete for Sitework". The holes shall be flushed with water before packing, screeding off flush, and grinding to match adjacent surfaces.

END OF SECTION

SECTION 032100 - CONCRETE REINFORCEMENT FOR SITEWORK

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Reinforcing steel bars, wire fabric and accessories for cast-in-place concrete.

1.2 RELATED SECTIONS

- A. Section 031100 - Concrete Formwork for Sitework.
- B. Section 033053 - Concrete for Sitework.

1.3 REFERENCES

- A. ACI 301 - Structural Concrete for Buildings.
- B. ACI 318 - Building Code Requirements For Reinforced Concrete.
- C. ACI SP-66 - American Concrete Institute - Detailing Manual.
- D. ASTM A82 - Cold Drawn Steel Wire for Concrete Reinforcement.
- E. ASTM A184 - Fabricated Deformed Steel Bar Mats for Concrete Reinforcement.
- F. ASTM A185 - Welded Steel Wire Fabric for Concrete Reinforcement.
- G. ASTM A496 - Deformed Steel Wire Fabric for Concrete Reinforcement.
- H. ASTM A497 - Welded Deformed Steel Wire Fabric for Concrete Reinforcement.
- I. ASTM A615 - Deformed and Plain Billet Steel Bars for Concrete Reinforcement.
- J. ASTM A616 - Rail Steel Deformed and Plain Bars for Concrete Reinforcement.
- K. ASTM A617 - Axle Steel Deformed and Plain Bars for Concrete Reinforcement.
- L. ASTM A704 - Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement.
- M. ASTM A706 - Low-Alloy Steel Deformed Bars for Concrete Reinforcement.
- N. ASTM A767 - Zinc-Coated (Galvanized) Bars for Concrete Reinforcement.
- O. ASTM A775 - Epoxy-Coated Reinforcing Steel Bars.
- P. ASTM D3963 - Epoxy-Coated Reinforcing Steel.
- Q. AWS D1.4 - Structural Welding Code for Reinforcing Steel.

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- R. AWS D12.1 - Welding Reinforcement Steel, Metal Inserts and Connections in Reinforced Concrete Construction.
- S. CRSI - Concrete Reinforcing Steel Institute - Manual of Practice.
- T. CRSI 63 - Recommended Practice For Placing Reinforcing Bars.
- U. CRSI 65 - Recommended Practice For Placing Bar Supports, Specifications and Nomenclature.

1.4 SUBMITTALS FOR REVIEW

- A. Shop Drawings: Indicate bar sizes, spacing, locations, and quantities of reinforcing steel and wire fabric, bending and cutting schedules, and supporting and spacing devices.

1.5 SUBMITTALS FOR INFORMATION

- A. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- B. Submit certified copies of mill test report of reinforcement materials analysis.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with ASTM A184.
- B. Provide ARCHITECT with access to fabrication plant to facilitate inspection of reinforcement. Provide notification of commencement and duration of shop fabrication in sufficient time to allow inspection.

PART 2 PRODUCTS

2.1 REINFORCEMENT

- A. Reinforcing Steel: ASTM A615, 60 ksi yield grade; deformed billet steel bars, unfinished.
- B. Reinforcing Steel Mat: ASTM A615, 40 ksi yield grade; steel bars or rods, unfinished.
- C. Stirrup Steel: ASTM A82, unfinished.
- D. Welded Steel Wire Fabric: ASTM A185 Plain Type; in coiled rolls; unfinished.

2.2 ACCESSORIES

- A. Tie Wire: Minimum 16 gage annealed type, epoxy coated. Patented system, manufactured by an approved source.

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- B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions including load bearing pad on bottom to prevent vapor barrier puncture.
- C. Special Chairs, Bolsters, Bar Supports, Spacers Adjacent to Weather Exposed Concrete Surfaces: Plastic coated steel type; size and shape as required.

PART 3 EXECUTION

3.1 PLACEMENT

- A. Place, support and secure reinforcement against displacement. Do not deviate from required position.
- B. Accommodate placement of formed openings.
- C. Conform to applicable code for concrete cover over reinforcement.

3.2 FIELD QUALITY CONTROL

- A. Inspect for acceptability.

END OF SECTION

SECTION 033053 - CONCRETE FOR SITEWORK

PART 1 GENERAL

1.1 DESCRIPTION

- A. Provide all non-reinforced and reinforced cast-in-place concrete, complete in place as indicated on the Plans and Specifications.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Cement used shall conform to the following requirements of the ASTM as amended and revised to date.
- B. Standard Portland Cement ASTM Designation C-150, Type 3.
- C. High Early Strength Portland Cement ASTM Designation C-150, Type 3.
- D. Air Entraining Portland Cement ASTM Designation C-150, Type 1A.
- E. Air Entraining Admixtures ASTM Designation C-260.
- F. Water Reducing Admixtures ASTM Designation C-494, Type A, shall be proportioned in accordance with A.G.I. 211.1-77 in order to obtain the requirements of ASTM Designation C-494. Use shall be in accordance with A.C.I. recommendations for water reducing agents, and shall be as manufactured by Masterbuilders, Euclid, Sika or approved equal.
- G. Curing Compounds ASTM Designation C-390 for Liquid Membrane-forming Compounds.
- H. Joint Material ASTM Designation D-994 for Bituminous Type material or ASTM Designation D-1751 for Non-extruding and Resilient Bituminous Type material.
- I. Aggregates, both fine and coarse, shall conform to the requirements therefore of ASTM Designation C-33. Standard size number of the coarse aggregate shall be in conformance with Article 4.1.2 of Addenda A, and aggregate gradation requirements therefore shall conform to ASTM Designation C-33. The maximum coarse aggregate shall be not more than one-fourth the smallest clearance between forms, reinforcement or any exposed surfaces, in any combination thereon.
- J. Water shall be clean, fresh and free of oils, acids, salts, organic matter or other injurious substances.

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- K. Unless otherwise provided, all concrete shall be air entrained having 6% of entrained air with a tolerance of $\pm 1\frac{1}{2}\%$, and shall be produced by using Standard Portland Cement with additive or Air Entraining Portland Cement with or without additional additive as may be required.
- L. Except where otherwise specifically provided or indicated on Plans, concrete shall be Class 4000 PSI for all surface structures, and Class 3000 PSI for all subsurface structures, and have a three inch (3") slump with a tolerance of ± 1 ".
- M. Cement, aggregates, water and air entrainment methods and materials shall also conform to Section 903 of the Standard Specifications.

PART 3 EXECUTION

3.1 METHODS OF CONSTRUCTION

- A. Reference standards included in this section:
 - 1. Section 405 of the Standard Specifications: Concrete Surface Course
 - 2. Section 607 of the Standard Specifications: Curbs
 - 3. Section 903.10 of the Standard Specifications: Curing Materials for Concrete
 - 4. Section 914 of the Standard Specifications: Joint Filler, Preformed
- B. Submittals:

Certificates: All deliveries of concrete shall be accomplished by delivery slips, copies of which shall be provided to ARCHITECT by the CONTRACTOR.
- C. Environmental requirements:
 - 1. Allowable concrete temperatures:
 - a. Cold weather: 60 degrees F Fahrenheit (60°F) when discharged from the mixer.
 - b. Hot weather: Maximum concrete temperature is 80 degrees Fahrenheit (80°F).
 - 2. Do not place concrete during rain, when atmospheric temperature is at or below 40 degrees Fahrenheit (40°F), or when conditions are otherwise unfavorable as determined by the ARCHITECT.
- D. Protection:
 - 1. When directed by ARCHITECT, protect new concrete curb from traffic for a minimum of seven (7) days.

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2. Method of protection shall be approved by ARCHITECT prior to beginning work.
- E. Only enough water shall be added to make concrete workable for its intended use. The ENGINEER will determine the slump ranges within which the CONTRACTOR must work. Ready mix or transit mix concrete may be used if obtained from sources approved by the ARCHITECT. Equipment used to proportion and mix concrete on the job shall be subject to the approval of the ARCHITECT.
- F. Forms shall conform to the shapes, lines, dimensions, and grades shown on the Plans. They shall be firmly braced, tight and sufficiently substantial to prevent movement, bulging, or mortar leakage. Wherever concrete will be exposed to view the form therefore shall be smooth and clean. Forms for footings may be omitted wherever soil conditions and workmanship permit accurate excavation to size & is approved by the ARCHITECT. All forms shall be completely removed.
- G. Reinforcement shall be accurately cut, bent and placed in accordance with the Plans. It shall be free of excessive scale or any foreign material that would tend to reduce bond. It shall be securely supported, tied and fastened to prevent movement while concrete is being placed.
- H. Subgrades, excavations and soil bases for all concrete work shall be properly finished to the prescribed lines, grades and dimensions, and shall be approved by the ARCHITECT before concrete is placed. All areas to receive concrete shall be free of frost, foreign matter and excessive water, provided however, that forms and soil surfaces shall be uniformly damp when the concrete is placed.
- I. Concrete shall be handled and placed so as to avoid any segregation. Concrete which has begun to set or which has been contaminated with foreign materials or to which too much water has been added shall not be used. Pouring of concrete shall generally be a continuous operation until the placing of individual section has been completed. Concrete shall be thoroughly compacted with vibrators or by other suitable means. Ready mixed concrete hauled in truck mixers or truck agitators shall be placed within ninety (90) minutes from the time water was added.
- J. Concrete shall not be poured when the atmospheric temperature is below forty degrees (40°F) or when there is any precipitation, unless precautions satisfactory to the ARCHITECT have been taken to prevent any damage to the work; however, this shall not, in any way, relax the performance and appearance requirements of the work.
 1. When the ambient temperature is expected to fall below 40 degrees Fahrenheit (40°F), the concrete shall be cured and protected in accordance with Subsection 504.03.02, Subpart (b), of the Standard Specifications.

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- K. All concrete shall be finished, and the CONTRACTOR shall provide a curing environment as directed by the ARCHITECT. Curing shall be by keeping the concrete surfaces wetted for a period not less than three (3) days. When directed to do so by the ARCHITECT, the CONTRACTOR shall apply a curing compound. No additional compensation shall be made when a curing compound is required.
- L. Expansion joints, dummy joints, construction joints and other appurtenances shall be provided as shown on the Plans or otherwise specified. Expansion joints shall be joint filler of the thickness indicated which shall conform to the requirements of these Specifications.
- M. After removal of forms all permanently exposed surfaces shall be cleaned of stains and dirt, and all surface defects which do not impair structural strength shall be repaired by cutting and patching in a manner satisfactory to the ARCHITECT.

END OF SECTION

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DOOR SCHEDULE																
DOOR							FRAME						RATING (MIN)	THRESHOLD	HDW SET	REMARKS
NUMBER	TYPE	WIDE	HEIGHT	THICKNESS	MATERIAL	GLAZING	TYPE	WIDE	HEIGHT	MATERIAL	GLAZING	JAMB TYPE				
100.1	D1	3'-0"	7'-0"	1 3/4"	IHM	IG-1	F1	3'-4"	7'-2"	HM	N/A	-	N/A	AL	01	
100.2	D2	14'-0"	16'-0"	2"	IM	N/A	-	-	-	-	-	-	-	-	-	
100.3	D2	14'-0"	16'-0"	2"	IM	N/A	-	-	-	-	-	-	-	-	-	
100.4	D2	14'-0"	16'-0"	2"	IM	N/A	-	-	-	-	-	-	-	-	-	
100.5	D2	14'-0"	16'-0"	2"	IM	N/A	-	-	-	-	-	-	-	-	-	
101.1	D1	3'-0"	7'-0"	1 3/4"	IHM	IG-1	F1	3'-4"	7'-2"	HM	N/A	-	N/A	AL	02	
101.2	D2	14'-0"	16'-0"	2"	IM	N/A	-	-	-	-	-	-	-	-	-	
E100.1	E	E	E	E	E	E	E	E	E	E	E	-	E	E	03	Replace exist'g panic device & lever
E100.2	E	E	E	E	E	E	E	E	E	E	E	-	E	E	03	Replace exist'g panic device & lever
E107.1	D4	3'-0"	7'-0"	1 3/4"	HM	G-1	F1	3'-4"	7'-2"	HM	N/A	-	N/A	N/A	04	
E108.1	D4	3'-8"	7'-0"	1 3/4"	HM	G-1	F1	4'-0"	7'-2"	HM	N/A	-	N/A	N/A	05	Replace exist'g window w/ prop door & frame
E109.1	D4	3'-0"	7'-0"	1 3/4"	HM	N/A	F1	3'-4"	7'-2"	HM	N/A	-	N/A	N/A	06	Replace exist'g window w/ prop door & frame
E110.1	D1	3'-0"	7'-0"	1 3/4"	IHM	IG-1	F1	3'-4"	7'-2"	HM	N/A	-	N/A	AL	01	Replace exist'g door & frame
E111.1	D3	3'-0"	7'-0"	1 3/4"	HM	N/A	F1	3'-4"	7'-2"	HM	N/A	-	N/A	N/A	06	Replace exist'g window w/ prop door & frame

DOOR SCHEDULE KEY

AL	Aluminum	N/A	Not Applicable	HM	Painted Hollow Metal	IHM	Insulated Hollow Metal
E	Existing	G-1	Safety Glass	IM	Insulated Metal	IG-1	Insulated Safety Glass

SECTION 083613 - SECTIONAL DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes electrically operated sectional doors.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type and size of sectional door and accessory.
 - 1. Include construction details, material descriptions, dimensions of individual components, profile door sections, and finishes.
 - 2. Include rated capacities, operating characteristics, electrical characteristics, and furnished accessories.
- B. Shop Drawings: For each installation and for special components not dimensioned or detailed in manufacturer's product data.
 - 1. Include plans, elevations, sections, and mounting details.
 - 2. Include details of equipment assemblies. Indicate dimensions, required clearances, method of field assembly, components, and location and size of each field connection.
 - 3. Include points of attachment and their corresponding static and dynamic loads imposed on structure.
 - 4. Include diagrams for power, signal, and control wiring.
- C. Samples for Initial Selection: For units with factory-applied finishes.
 - 1. Include Samples of accessories involving color selection.
- D. Samples for Verification: For each type of exposed finish on the following components, in manufacturer's standard sizes:
 - 1. Flat door sections.
 - 2. Frame for paneled door sections; of each width of stile and rail required.

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1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Sample Warranties: For special warranties.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For sectional doors to include in maintenance manuals.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer for both installation and maintenance of units required for this Project.
- B. Regulatory Requirements: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC A117.1.

1.7 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of sectional doors that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including, but not limited to, excessive deflection.
 - b. Failure of components or operators before reaching required number of operation cycles.
 - c. Faulty operation of hardware.
 - d. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use; rust through.
 - e. Delamination of exterior or interior facing materials.
 - 2. Warranty Period: Two years from date of Substantial Completion.
- B. Special Finish Warranty: Manufacturer agrees to repair or replace components that show evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Finish: Five years from date of Substantial Completion against chipping, cracking, and/or peeling (losing adhesion), and fading.
 - 2. Delamination: 10 years from date of Substantial Completion against delamination of the polyurethane foam insulation from the steel skins.

PART 2 - PRODUCTS

2.1 MANUFACTURERS, GENERAL

- A. Source Limitations: Obtain sectional doors from single source from single manufacturer.
 - 1. Obtain operators and controls from sectional door manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Sectional doors shall comply with performance requirements specified without failure due to defective manufacture, fabrication, installation, or other defects in construction and without requiring temporary installation of reinforcing components.
- B. Structural Performance, Exterior Doors: Capable of withstanding the design wind loads.
 - 1. Design Wind Load: 115 MPH, Exposure B.
 - 2. Testing: According to ASTM E330 or DASMA 108 for garage doors and complying with the acceptance criteria of DASMA 108.
 - 3. Deflection Limits: Design sectional doors to withstand design wind loads without evidencing permanent deformation or disengagement of door components.
 - a. Deflection of door sections in horizontal position (open) shall not exceed 1/120 of the door width.
 - b. Deflection of horizontal track assembly shall not exceed 1/240 of the door height.
 - 4. Operability under Wind Load: Design overhead coiling doors to remain operable under uniform pressure (velocity pressure) of 30 lbf/sq. ft. wind load, acting inward and outward.
- C. Seismic Performance: Sectional doors shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
 - 1. Component Importance Factor: 1.0.

2.3 DOOR ASSEMBLY

- A. Steel Sectional Door: Sectional door formed with hinged sections and fabricated according to DASMA 102 unless otherwise indicated.
 - 1. 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:
 - a. C.H.I. Overhead Doors, Inc.
 - b. Clopay Building Products.

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- c. Raynor.
 - d. Wayne-Dalton Corp.
 - e. Architect's approved equal.
- B. Operation Cycles: Door components and operators capable of operating for not less than 25,000. One operation cycle is complete when a door is opened from the closed position to the fully open position and returned to the closed position.
- C. Air Infiltration: Maximum rate of at 15 and 25 mph (24.1 and 40.2 km/h) when tested according to DASMA 105.
- D. R-Value: 17.50 minimum.
- E. Steel Sections: Zinc-coated (galvanized) steel sheet with G60 zinc coating.
1. Section Thickness: 2 inches.
 2. Exterior-Face, Steel Sheet Thickness: 0.040-inch (20 gauge) nominal coated thickness.
 - a. Surface: Manufacturer's standard, flat or embossed.
 3. Insulation: Polyurethane Foamed in place.
 4. Interior Facing Material: Zinc-coated (galvanized) steel sheet with a nominal coated thickness of manufacturer's recommended dimension to comply with performance requirements.
- F. Track Configuration: Standard-lift.
- G. Weatherseals: Fitted to bottom and top and around entire perimeter of door.
- H. Locking Devices: Equip door with slide bolt for padlock.
1. Locking Device Assembly: Single-jamb side.
- I. Counterbalance Type: Torsion spring.
- J. Electric Door Operator:
1. Usage Classification: Light duty, up to 10 cycles per hour.
 2. Operator Type: Side jackshaft.
 3. Safety: Listed according to UL 325 by a qualified testing agency for commercial or industrial use; moving parts of operator enclosed or guarded if exposed and mounted at 8 feet or lower.
 4. Motor Exposure: Interior, clean, and dry.
 5. Emergency Manual Operation: Chain type.
 6. Obstruction-Detection Device: Automatic photoelectric sensor.
 7. Control Station: Interior-side mounted. Coordinate final locations with Owner.

K. Door Finish:

1. Baked-Enamel or Powder-Coat Finish: Color and gloss as selected by Architect from manufacturer's full range of standard colors.
2. Finish of Interior Facing Material: Match finish of exterior section face.

2.4 MATERIALS, GENERAL

- 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.

2.5 STEEL DOOR SECTIONS

- A. Exterior Section Faces and Frames: Zinc-coated (galvanized), cold-rolled, commercial steel (CS) sheet, complying with ASTM A653/A653M, with indicated zinc coating and thickness.
1. Fabricate section faces from single sheets to provide sections not more than 24 inches (610 mm) high and of indicated thickness. Roll horizontal meeting edges to a continuous, interlocking, keyed, rabbeted, shiplap, or tongue-in-groove weather-resistant seal, with a reinforcing flange return.
 2. For insulated doors, provide sections with continuous thermal-break construction, separating the exterior and interior faces of door.
- B. Section Ends and Intermediate Stiles: Enclose open ends of sections with channel end stiles formed from galvanized-steel sheet not less than 0.064-inch- (1.63-mm-) nominal coated thickness and welded to door section. Provide intermediate stiles formed from not less than 0.064-inch- (1.63-mm-) thick galvanized-steel sheet, cut to door section profile, and welded in place. Space stiles not more than 48 inches (1219 mm) apart.
- C. Provide reinforcement for hardware attachment.
- D. Foamed-in-Place Thermal Insulation: Insulate interior of steel sections with door manufacturer's standard CFC-free polyurethane insulation, foamed in place to completely fill interior of section and pressure bonded to face sheets to prevent delamination under wind load, and with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, according to ASTM E84. Enclose insulation completely within steel sections and the interior facing material, with no exposed insulation.
- E. Interior Facing Material: Zinc-coated (galvanized), cold-rolled, commercial steel (CS) sheet, complying with ASTM A653/A653M, with indicated thickness.
- F. Fabricate sections so finished door assembly is rigid and aligned, with tight hairline joints and free of warp, twist, and deformation.

2.6 TRACKS, SUPPORTS, AND ACCESSORIES

- A. Tracks: Manufacturer's standard, galvanized-steel track system of configuration indicated, sized for door size and weight, designed for lift type indicated and clearances indicated on Drawings, Provide complete system including brackets, bracing, and reinforcement to ensure rigid support of ball-bearing roller guides for required door type, size, weight, and loading.
1. Galvanized Steel: ASTM A653/A653M, minimum G60 (Z180) zinc coating.
 2. Slope tracks at an angle from vertical or design tracks to ensure tight closure at jambs when door unit is closed.
 3. Track Reinforcement and Supports: Galvanized-steel members to support track without sag, sway, and vibration during opening and closing of doors. Slot vertical sections of track spaced 2 inches (51 mm) apart for door-drop safety device.
 - a. For Vertical Track: As required by door manufacturer to suite door size.
 - b. For Horizontal Track: Continuous reinforcing angle from curve in track to end of track, attached to track and supported at points by laterally braced attachments to overhead structural members as required by door manufacturer.
- B. Weatherseals: Replaceable, adjustable, continuous, compressible weather-stripping gaskets of flexible vinyl, rubber, or neoprene fitted to bottom and top of sectional door unless otherwise indicated.

2.7 HARDWARE

- A. General: Heavy-duty, corrosion-resistant hardware, with hot-dip galvanized, stainless-steel, or other corrosion-resistant fasteners, to suit door type.
- B. Hinges: Heavy-duty, galvanized-steel hinges of not less than 0.079-inch- (2.01-mm-) nominal coated thickness at each end stile and at each intermediate stile, according to manufacturer's written recommendations for door size. Attach hinges to door sections through stiles and rails with bolts and lock nuts or lock washers and nuts. Use rivets or self-tapping fasteners where access to nuts is impossible. Provide double-end hinges where required, for doors more than 16 feet (4.88 m) wide unless otherwise recommended by door manufacturer.
- C. Rollers: Heavy-duty rollers with steel ball-bearings in case-hardened steel races, mounted with varying projections to suit slope of track. Extend roller shaft through both hinges where double hinges are required. Provide 3-inch- (76-mm-) diameter roller tires for 3-inch- (76-mm-) wide track and 2-inch- (51-mm-) diameter roller tires for 2-inch- (51-mm-) wide track.
- D. Push/Pull Handles: Equip each push-up operated or emergency-operated door with galvanized-steel lifting handles on each side of door, finished to match door.

2.8 LOCKING DEVICES

- A. Slide Bolt: Fabricate with side-locking bolts to engage through slots in tracks for locking by padlock, located on single-jamb side, operable from inside only.

- B. Safety Interlock Switch: Equip power-operated doors with safety interlock switch to disengage power supply when door is locked.

2.9 COUNTERBALANCE MECHANISM

- A. Torsion Spring: Counterbalance mechanism consisting of adjustable-tension torsion springs fabricated from steel-spring wire complying with ASTM A229/A229M, mounted on torsion shaft made of steel tube or solid steel. Provide springs designed for number of operation cycles indicated.
- B. Weight Counterbalance: Counterbalance mechanism consisting of filled pipe weights that move vertically in a galvanized-steel weight pipe. Connect pipe weights with cable to weight-cable drums mounted on torsion shaft made of steel tube or solid steel.
- C. Cable Drums and Shaft for Doors: Cast-aluminum or gray-iron casting cable drums mounted on torsion shaft and grooved to receive door-lifting cables as door is raised. Mount counterbalance mechanism with manufacturer's standard ball-bearing brackets at each end of torsion shaft. Provide one additional midpoint bracket for shafts up to 16 feet (4.88 m) long and two additional brackets at one-third points to support shafts more than 16 feet (4.88 m) long unless closer spacing is recommended by door manufacturer.
- D. Cables: Galvanized-steel, multistrand, lifting cables with cable safety factor of at least 7 to 1.
- E. Cable Safety Device: Include a spring-loaded steel or spring-loaded bronze cam mounted to bottom door roller assembly on each side and designed to automatically stop door if either lifting cable breaks.
- F. Bracket: Provide anchor support bracket as required to connect stationary end of spring to the wall and to level the shaft and prevent sag.
- G. Bumper: Provide spring bumper at each horizontal track to cushion door at end of opening operation.

2.10 ELECTRIC DOOR OPERATORS

- A. General: Electric door operator assembly of size and capacity recommended and provided by door manufacturer for door and "operation cycles" requirement specified, with electric motor and factory-rewired motor controls, starter, gear-reduction unit, solenoid-operated brake, clutch, control stations, control devices, integral gearing for locking door, and accessories required for proper operation.
 - 1. Comply with NFPA 70.
 - 2. Control equipment complying with NEMA ICS 1, NEMA ICS 2, and NEMA ICS 6; with NFPA 70, Class 2 control circuit, maximum 24-V ac or dc.
- B. Usage Classification: Electric operator and components capable of operating for not less than number of cycles per hour indicated for each door.

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- C. Door-Operator Type: Unit consisting of electric motor, gears, pulleys, belts, sprockets, chains, and controls needed to operate door and meet required usage classification.
 - 1. Jackshaft, Side Mounted: Jackshaft operator mounted on the inside front wall on right or left side of door and connected to torsion shaft with an adjustable coupling or drive chain.
- D. Motors: Reversible-type motor for motor exposure indicated.
 - 1. Electrical Characteristics:
 - a. Phase: Single phase.
 - b. Volts: 115 V.
 - c. Hertz: 60.
 - 2. Motor Size: Minimum size as indicated. If not indicated, large enough to start, accelerate, and operate door in either direction from any position, at a speed not less than 8 in./sec. (203 mm/s) and not more than 12 in./sec. (305 mm/s), without exceeding nameplate ratings or service factor.
 - 3. Operating Controls, Wiring Devices, and Wiring: Manufacturer's standard unless otherwise indicated.
 - 4. Coordinate wiring requirements and electrical characteristics of motors and other electrical devices with building electrical system and each location where installed.
 - 5. Use adjustable motor-mounting bases for belt-driven operators.
- E. Limit Switches: Equip motorized door with adjustable switches interlocked with motor controls and set to automatically stop door at fully opened and fully closed positions.
- F. Obstruction Detection Device: External entrapment protection consisting of indicated automatic safety sensor capable of protecting full width of door opening. Activation of device immediately stops and reverses downward door travel.
 - 1. Photoelectric Sensor: Manufacturer's standard system designed to detect an obstruction in door opening without contact between door and obstruction.
 - a. Self-Monitoring Type: Designed to interface with door operator control circuit to detect damage to or disconnection of sensing device. When self-monitoring feature is activated, door closes only with sustained pressure on close button.
- G. Control Station: Three-button control station in fixed location with momentary-contact push-button controls labeled "Open" and "Stop" and sustained- or constant-pressure, push-button control labeled "Close."
 - 1. Interior-Mounted Units: Full-guarded, surface-mounted, heavy-duty type, with general-purpose NEMA ICS 6, Type 1 enclosure.
- H. Emergency Manual Operation: Equip electrically powered door with capability for emergency manual operation. Design manual mechanism so required force for door operation does not exceed 25 lbf.

- I. Emergency Operation Disconnect Device: Equip operator with hand-operated disconnect mechanism for automatically engaging manual operator and releasing brake for emergency manual operation while disconnecting motor without affecting timing of limit switch. Mount mechanism so it is accessible from floor level. Include interlock device to automatically prevent motor from operating when emergency operator is engaged.
- J. Motor Removal: Design operator so motor may be removed without disturbing limit-switch adjustment and without affecting emergency manual operation.

2.11 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM/NOMMA's "Metal Finishes Manual for Architectural and Metal Products (AMP 500-06)" for recommendations for applying and designating finishes.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.12 STEEL AND GALVANIZED-STEEL FINISHES

- A. Baked-Enamel or Powder-Coat Finish: Manufacturer's standard baked-on finish consisting of prime coat and thermosetting topcoat. Comply with coating manufacturer's written instructions for cleaning, pretreatment, application, and minimum dry film thickness.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for substrate construction and other conditions affecting performance of the Work.
- B. Examine locations of electrical connections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install sectional doors and operating equipment complete with necessary hardware, anchors, inserts, hangers, and equipment supports; according to manufacturer's written instructions and as specified.
- B. Tracks:
 - 1. Fasten vertical track assembly to opening jambs and framing, spaced not more than 24 inches (610 mm) apart.

2. Hang horizontal track assembly from structural overhead framing with angles or channel hangers attached to framing by welding or bolting, or both. Provide sway bracing, diagonal bracing, and reinforcement as required for rigid installation of track and door-operating equipment.
- C. Accessibility: Install sectional doors, switches, and controls along accessible routes in compliance with regulatory requirements for accessibility.
- D. Power-Operated Doors: Install according to UL 325.

3.3 STARTUP SERVICES

- A. Engage a factory-authorized service representative to perform startup service.
 1. Complete installation and startup checks according to manufacturer's written instructions.
 2. Test and adjust controls and safety devices. Replace damaged and malfunctioning controls and equipment.

3.4 ADJUSTING

- A. Adjust hardware and moving parts to function smoothly so that doors operate easily, free of warp, twist, or distortion.
- B. Lubricate bearings and sliding parts as recommended by manufacturer.
- C. Adjust doors and seals to provide weather-resistant fit around entire perimeter.
- D. Touch-up Painting: Immediately after welding galvanized materials, clean welds and abraded galvanized surfaces and repair galvanizing to comply with ASTM A780/A780M.

3.5 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain sectional doors.

END OF SECTION 083613

ROOM FINISH SCHEDULE										
RM #	ROOM NAME	FLR	BASE	WALLS				CLG	CLG. HT.	REMARKS
				NORTH	EAST	SOUTH	WEST			
100	GARAGE-01	E	E	E	E	E	E	E	E	
101	ELECTRIC RM	E	E	PT	PT	PT	PT	E	E	
102	STORAGE-03	E	E	PT	PT	PT	PT	E	E	
103	STORAGE RM-02	E	E	PT	PT	PT	PT	E	E	
104	STORAGE RM-01	EC	V	PT	PT	PT	PT	E	E	
105	WOMEN'S RR	VCT	V	PT	PT	PT	PT	E	E	
106	MEN'S RR	VCT	V	PT	PT	PT	PT	E	E	
107	OFFICE-03	VCT	V	PT	PT	PT	PT	E	ME	1
108	CORRIDOR	EC	V	PT	PT	PT	PT	E	ME	1
109	BREAK RM	VCT	V	PT	PT	PT	PT	E	ME	1
110	OFFICE-02	VCT	V	PT	PT	PT	PT	E	E	
111	LOCKER RM	VCT	V	PT	PT	PT	PT	E	E	
112	OFFICE-01	E	E	PT	PT	PT	PT	E	E	
113	GARAGE-02	EC	N/A	ES/2/3	4	ES/2	ES/2/3	ES	VARIES	
114	WASH BAY	EC	N/A	FRP	3	3	FRP	ES	VARIES	
200	MEZZANINE-01	E	E	E	E	E	E	E	E	
201	MEZZANINE-02	E	E	E	E	E	E	E	E	

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RM #	ROOM NAME	FLR	BASE	WALLS				CLG	CLG. HT.	REMARKS
				NORTH	EAST	SOUTH	WEST			

FINISH SCHEDULE KEY

E Exist'g to remain
 EC Exposed Concrete
 ES Exposed Structure
 ME Match Exist'g
 PT Paint
 V Vinyl Base
 VCT Vinyl Composite Tile

REMARKS

1. Modify exist'g APC as req'd to accommodate alteration of the space. Provide new componets to match exist'g as req'd.
2. Paint exposed perimeter plywood. Color as selected by Arch't.
3. Paint CMU (full ht). Color as selected by Arch't.
4. Paint exist'g siding. Color as selected by Arch't.

SECTION 096519 - RESILIENT TILE FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Vinyl composition floor tile.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples for Initial Selection: For each type of floor tile indicated.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of floor tile to include in maintenance manuals.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Floor Tile: Furnish balance of remaining tiles from open boxes of each type, color, and pattern of floor tile installed.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are competent in techniques required by manufacturer for floor tile installation and seaming method indicated.

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1. Engage an installer who employs workers for this Project who are trained or certified by floor tile manufacturer for installation techniques required.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store floor tile and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C). Store floor tiles on flat surfaces.

1.9 FIELD CONDITIONS

- A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F, in spaces to receive floor tile during the following periods:
 1. 48 hours before installation.
 2. During installation.
 3. 48 hours after installation.
- B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.
- C. Close spaces to traffic during floor tile installation.
- D. Close spaces to traffic for 48 hours after floor tile installation.
- E. Install floor tile after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics: For resilient floor tile, as determined by testing identical products according to ASTM E648 or NFPA 253 by a qualified testing agency.
 1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

2.2 VINYL COMPOSITION FLOOR TILE

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Armstrong World Industries, Inc; Standard Excelon Imperial Texture or a comparable product by one of the following:
 1. Congoleum Corporation.
 2. Johnsonite; a Tarkett company.
 3. Architect's approved equal.

- B. Tile Standard: ASTM F1066, Class 2, through pattern.
- C. Wearing Surface: Smooth.
- D. Thickness: 0.125 inch.
- E. Size: 12 by 12 inches.
- F. Colors and Patterns: As selected by Architect from manufacturer's full range of standard colors.

2.3 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by floor tile manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by floor tile and adhesive manufacturers to suit floor tile and substrate conditions indicated.
 - 1. Adhesives shall have a VOC content of 60 g/L or less.
- C. Floor Polish: Provide protective, liquid floor-polish products recommended by floor tile manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
 - 1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Prepare substrates according to floor tile manufacturer's written instructions to ensure adhesion of resilient products.
- B. Concrete Substrates: Prepare according to ASTM F710.
 - 1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by floor tile manufacturer. Do not use solvents.
 3. Alkalinity and Adhesion Testing: Perform tests recommended by floor tile manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing.
 4. Moisture Testing: Perform tests so that each test area does not exceed 500 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
 - a. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.
- C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
- D. Do not install floor tiles until materials are the same temperature as space where they are to be installed.
 1. At least 48 hours in advance of installation, move resilient floor tile and installation materials into spaces where they will be installed.
- E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient floor tile.

3.3 FLOOR TILE INSTALLATION

- A. Comply with manufacturer's written instructions for installing floor tile.
- B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.
 1. Lay tiles square with room axis.
- C. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.
 1. Lay tiles with grain direction alternating in adjacent tiles (basket-weave pattern).
- D. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.
- E. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.

- F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent marking device.
- G. Install floor tiles on covers for telephone and electrical ducts, building expansion-joint covers, and similar items in installation areas. Maintain overall continuity of color and pattern between pieces of tile installed on covers and adjoining tiles. Tightly adhere tile edges to substrates that abut covers and to cover perimeters.
- H. Adhere floor tiles to substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

3.4 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protecting floor tile.
- B. Perform the following operations immediately after completing floor tile installation:
 - 1. Remove adhesive and other blemishes from surfaces.
 - 2. Sweep and vacuum surfaces thoroughly.
 - 3. Damp-mop surfaces to remove marks and soil.
- C. Protect floor tile from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- D. Floor Polish: Remove soil, adhesive, and blemishes from floor tile surfaces before applying liquid floor polish.
 - 1. Apply two coat(s).
- E. Cover floor tile until Substantial Completion.

END OF SECTION 096519

SECTION 097225 – SOLID SURFACE WALL COVERINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Fiberglass reinforced plastic sheet wall covering.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include data on physical characteristics, durability, fade resistance, and flame-resistance characteristics.
- B. Shop Drawings: Show location and extent of each wall-covering type. Indicate pattern placement, seams and termination points.
- C. Samples for Initial Selection: For each type of wall covering indicated.
- D. Samples for Verification: 3-inch-by-3-inch sample of wall covering.
- E. Qualification Data: For qualified testing agency.
- F. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for wall covering.
- G. Maintenance Data: For wall coverings to include in maintenance manuals.

1.4 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: As determined by testing identical wall coverings applied with identical adhesives to substrates according to test method indicated below by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Surface-Burning Characteristics: As follows, per ASTM E 84:
 - a. Flame-Spread Index: 25 or less.
 - b. Smoke-Developed Index: 450 or less.

1.5 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install wall coverings until spaces are enclosed and weathertight, wet work in spaces is complete and dry, work above ceilings 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.
- B. Ventilation: Provide continuous ventilation during installation and for not less than the time recommended by wall-covering manufacturer for full drying or curing.

PART 2 - PRODUCTS

2.1 WALL COVERINGS

- A. General: Provide rolls of each type of wall covering from same print run or dye lot.

2.2 FIBERGLASS REINFORCED PLASTIC SHEET WALL COVERING

- A. Fiberglass Reinforced Plastic Sheet Wall-Covering Standards: Provide products complying with the following:
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Kal-Lite FRP/GRP as manufactured by Kalwall Corporation.
 - b. Architect's approved equal.
- B. Thickness: .090 inches minimum.
- C. Width: 48 inches minimum.
- D. Length: 8 feet minimum.
- E. Texture: Pebble.
- F. Colors: As selected by Architect from manufacturer's full range of standard colors.

2.3 ACCESSORIES

- A. Adhesive: Mildew-resistant, nonstaining adhesive, for use with specific wall covering and substrate application; as recommended in writing by wall-covering manufacturer and with a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- B. Primer/Sealer: Mildew resistant, and as recommended in writing by primer/sealer and wall-covering manufacturers for intended substrate.

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- C. Fasteners: As recommended in writing by wall-covering manufacturer.
- D. Trim: Inside & outside corners, end caps and dividers as recommended by wall-covering manufacturer. Color shall match wall-covering.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for levelness, wall plumbness, maximum moisture content, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions for surface preparation.
- B. Clean substrates of substances that could impair bond of wall covering, including dirt, oil, grease, mold, mildew, and incompatible primers.
- C. Prepare substrates to achieve a smooth, dry, clean, structurally sound surface free of flaking, unsound coatings, cracks, and defects.
 - 1. Plywood: Prime with primer as recommended in writing by primer/sealer manufacturer and wall-covering manufacturer.
- D. Remove hardware and hardware accessories, electrical plates and covers, light fixture trims, and similar items.
- E. Acclimatize wall-covering materials by removing them from packaging in the installation areas not less than 24 hours before installation.

3.3 INSTALLATION

- A. General: Comply with wall-covering manufacturers' written installation instructions applicable to products and applications indicated except where more stringent requirements apply.
- B. Cut wall-covering as recommended by the wall-covering manufacturer.
- C. Install wall covering with no gaps or overlaps, and no lifted centers or edges.
- D. Install seams vertical and plumb at least 18 inches corners.
- E. Fully bond wall covering to substrate. Remove air bubbles, wrinkles, blisters, and other defects.

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- F. Install trim vertical and plumb.

3.4 CLEANING

- A. Remove excess adhesive at finished seams, perimeter edges, and adjacent surfaces.
- B. Use cleaning methods recommended in writing by wall-covering manufacturer.
- C. Replace sheets and trims that cannot be cleaned.
- D. Reinstall hardware and hardware accessories, electrical plates and covers, light fixture trims, and similar items.

END OF SECTION 097225

SECTION 105113 - METAL LOCKERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Knocked-down corridor lockers.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of metal locker.
- B. Shop Drawings: For metal lockers.
 - 1. Include plans, elevations, sections, and attachment details.
 - 2. Show locker trim and accessories.
 - 3. Include locker identification system and numbering sequence.
- C. Samples: For each color specified, in manufacturer's standard size.
- D. Samples for Initial Selection: Manufacturer's color charts showing the full range of standard colors.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Sample Warranty: For special warranty.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For adjusting, repairing, and replacing locker doors and latching mechanisms to include in maintenance manuals.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver metal lockers until spaces to receive them are clean, dry, and ready for their installation.

1.7 FIELD CONDITIONS

- A. Field Measurements: Verify actual dimensions of recessed openings by field measurements before fabrication.

1.8 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of work specified in other Sections to ensure that metal lockers can be supported and installed as indicated.

1.9 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of metal lockers that fail in materials or workmanship, excluding finish, within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures.
 - b. Faulty operation of latches and other door hardware.
 - 2. Damage from deliberate destruction and vandalism is excluded.
 - 3. Warranty Period for Knocked-Down Metal Lockers: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain metal lockers and accessories from single source from single locker manufacturer.

2.2 KNOCKED-DOWN CORRIDOR LOCKERS

- 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. ASI Storage Solutions; ASI Group.
 - 2. Lyon Workspace Products, LLC.

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3. Penco Products, Inc.
 4. Republic Storage Systems, LLC.
 5. Architect's approved equal.
- B. Size: 18 inches wide by 24 inches deep by 72 inches high.
- C. Doors: One piece; fabricated from 0.060-inch nominal-thickness steel sheet; formed into channel shape with double bend at vertical edges and with right-angle single bend at horizontal edges.
1. Reinforcement: Manufacturer's standard reinforcing angles, channels, or stiffeners for doors more than 15 inches (381 mm) wide; welded to inner face of doors.
 2. Stiffeners: Manufacturer's standard full-height stiffener fabricated from 0.048-inch (1.21-mm) nominal-thickness steel sheet; welded to inner face of doors.
 3. Door Style: Vented panel as follows:
 - a. Louvered Vents: No fewer than six louver openings at top and bottom for single-tier lockers.
- D. Body: Assembled by riveting or bolting body components together. Fabricate from unperforated steel sheet with thicknesses as follows:
1. Tops, Bottoms, and Intermediate Dividers: 0.024-inch (0.61-mm) nominal thickness, with single bend at sides.
 2. Backs and Sides: 0.024-inch (0.61-mm) nominal thickness, with full-height, double-flanged connections.
 3. Shelves: 0.024-inch (0.61-mm) nominal thickness, with double bend at front and single bend at sides and back.
- E. Frames: Channel formed; fabricated from 0.060-inch (1.52-mm) nominal-thickness steel sheet; lapped and factory welded at corners; with top and bottom main frames factory welded into vertical main frames. Form continuous, integral, full-height door strikes on vertical main frames.
- F. Hinges: Welded to door and attached to door frame with no fewer than two factory-installed rivets per hinge that are completely concealed and tamper resistant when door is closed; fabricated to swing 180 degrees.
1. Knuckle Hinges: Steel, full loop, five or seven knuckles, tight pin; minimum 2 inches (51 mm) high. Provide no fewer than three hinges for each door more than 42 inches (1067 mm) high.
 2. Continuous Hinges: Manufacturer's standard, steel, full height.
 3. Hinges: Manufacturer's standard, steel, continuous or knuckle type.
- G. Latching: Provide one of the following:
1. Projecting Door Handle and Latch: Finger-lift latch control designed for use with either built-in combination locks or padlocks; positive automatic latching, chromium plated; pry and vandal resistant.

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- a. Latch Hooks: Equip doors 48 inches (1219 mm) and higher with three latch hooks fabricated from 0.105-inch (2.66-mm) nominal-thickness steel sheet; welded or riveted to full-height door strikes; with resilient silencer on each latch hook.
 - b. Latching Mechanism: Manufacturer's standard, rattle-free latching mechanism and moving components isolated to prevent metal-to-metal contact and incorporating a prelocking device that allows locker door to be locked while door is open and then closed without unlocking or damaging lock or latching mechanism.
2. Recessed Door Handle and Latch: Stainless steel cup with integral door pull, recessed so locking device does not protrude beyond door face; pry and vandal resistant.
- a. Multipoint Latching: Finger-lift latch control designed for use with built-in combination locks, built-in key locks, or padlocks; positive automatic latching and prelocking.
 - b. Latch Hooks: Equip doors 48 inches (1219 mm) and higher with three latch hooks fabricated from 0.105-inch (2.66-mm) nominal-thickness steel sheet; welded or riveted to full-height door strikes; with resilient silencer on each latch hook.
 1. Latching Mechanism: Manufacturer's standard, rattle-free latching mechanism and moving components isolated to prevent metal-to-metal contact and incorporating a prelocking device that allows locker door to be locked while door is open and then closed without unlocking or damaging lock or latching mechanism.
- H. Locks: Combination padlocks by Owner.
- I. Identification Plates: Manufacturer's standard, etched, embossed, or stamped aluminum plates, with numbers and letters at least 3/8 inch (9 mm) high.
- J. Hooks: Manufacturer's standard ball-pointed hooks, aluminum or steel; zinc plated.
- K. Continuous Zee Base: Fabricated from manufacturer's standard thickness, but not less than 0.060-inch nominal-thickness steel sheet.
 1. Height: 4 inches.
- L. Materials:
 1. Cold-Rolled Steel Sheet: ASTM A1008/A1008M, Commercial Steel (CS), Type B, suitable for exposed applications.
- M. Finish: Baked enamel or powder coat.
 1. Color: As selected by Architect from manufacturer's full range of standard colors.

2.3 FABRICATION

- A. Fabricate metal lockers square, rigid, without warp, and with metal faces flat and free of dents or distortion. Make exposed metal edges safe to touch and free of sharp edges and burrs.
 - 1. Form body panels, doors, shelves, and accessories from one-piece steel sheet unless otherwise indicated.
 - 2. Provide fasteners, filler plates, supports, clips, and closures as required for complete installation.
- B. Fabricate each metal locker with an individual door and frame; individual top, bottom, and back; and common intermediate uprights separating compartments.
- C. Equipment: Provide each locker with an identification plate and the following equipment:
 - 1. Single-Tier Units: Shelf, one double-prong ceiling hook, and two single-prong wall hooks.
- D. Knocked-Down Construction: Fabricate metal lockers by assembling at Project site or preassembling at plant prior to shipping, using manufacturer's nuts, bolts, screws, or rivets.
- E. Continuous Zee Base: Fabricated in lengths as long as practical to enclose base and base ends; finished to match lockers.

2.4 ACCESSORIES

- A. Fasteners: Zinc- or nickel-plated steel, slotless-type, exposed bolt heads; with self-locking nuts or lock washers for nuts on moving parts.
- B. Anchors: Material, type, and size required for secure anchorage to each substrate.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine walls and floors with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Prepare written report, endorsed by Installer listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install lockers level, plumb, and true; shim as required, using concealed shims.

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1. Anchor locker runs at ends and at intervals recommended by manufacturer, but not more than 36 inches (910 mm) o.c. Using concealed fasteners, install anchors through backup reinforcing plates, channels, or blocking as required to prevent metal distortion.
 2. Anchor single rows of metal lockers to walls near top and bottom of lockers.
- B. Knocked-Down Lockers: Assemble with manufacturer's standard fasteners, with no exposed fasteners on door faces or face frames.
- C. Equipment:
1. Attach hooks with at least two fasteners.
 2. Attach door locks on doors using security-type fasteners.
 3. Identification Plates: Identify metal lockers with identification indicated on Drawings.
 - a. Attach plates to each locker door, near top, centered, with at least two aluminum rivets.

3.3 ADJUSTING

- A. Clean, lubricate, and adjust hardware. Adjust doors and latches to operate easily without binding.

3.4 PROTECTION

- A. Protect metal lockers from damage, abuse, dust, dirt, stain, or paint. Do not permit use during construction.
- B. Touch up marred finishes or replace metal lockers that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by locker manufacturer.

END OF SECTION 105113

SECTION 123530 - RESIDENTIAL CASEWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Kitchen cabinets.
 - 2. Plastic-laminate-clad countertops.

1.3 DEFINITIONS

- A. Concealed Surfaces of Casework: Surfaces not usually visible after installation, including sleepers, web frames, dust panels, bottoms of drawers, and ends of casework installed directly against and completely concealed by walls or other casework, and tops of wall cabinets and utility cabinets.
- B. Exposed Surfaces of Casework: Surfaces visible when doors and drawers are closed, including visible surfaces in open cabinets or behind glass doors.
- C. Semiexposed Surfaces of Casework: Surfaces behind opaque doors or drawer fronts, including interior faces of doors, interiors and sides of drawers, and bottoms of wall cabinets.

1.4 COORDINATION

- A. Coordinate layout and installation of blocking and reinforcement in partitions for support of casework.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components, and profiles and finishes for casework.
 - 2. Include rated capacities, operating characteristics, profiles, and finishes for hardware.
- B. Shop Drawings: For residential casework.

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1. Include plans, elevations, details, and attachments to other work.
2. Show materials, finishes, filler panels, and hardware.
3. Indicate manufacturer's catalog numbers for casework.
4. Show locations and sizes of cutouts and holes for items installed in plastic-laminate-clad countertops.

C. Samples: For casework, hardware and plastic laminate finishes in manufacturer's standard sizes.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer and installer.

B. Product Certificates: For casework, composite wood and agrifiber products.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store cabinets and countertops in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

B. Deliver countertops only after casework and supports on which they will be installed have been completed in installation areas.

C. Keep surfaces of countertops covered with protective covering during handling and installation.

1.8 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install casework and countertops until building is enclosed, wet-work is complete, and HVAC system is operating and maintaining temperature and relative humidity at levels planned for building occupants during the remainder of the construction period.

B. Field Measurements: Where casework and countertops are indicated to fit to existing construction, verify dimensions of existing construction by field measurements before fabrication and indicate measurements on Shop Drawings. Provide fillers and scribes to allow for trimming and fitting.

C. Locate concealed framing, blocking, and reinforcements that support casework by field measurements before enclosing them, and indicate measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 CABINETS

A. Basis-of-Design Product: Subject to compliance with requirements, provide KraftMaid Cabinetry, Inc; "Amhurst" or a comparable product by one of the following:

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1. American Woodmark Corp.
 2. Master WoodCraft Cabinetry LLC.
 3. MasterBrand Cabinets, Inc.
 4. Architect's approved equal.
- B. Quality Standard: Provide cabinets that comply with KCMA A161.1.
1. KCMA Certification: Provide cabinets with KCMA's "Certified Cabinet" seal affixed in a semiexposed location of each unit and showing compliance with KCMA A161.1.
- C. Door and Drawer Face Style: Reveal overlay; faces partially cover cabinet fronts.
1. Door and Drawer Fronts: Solid-wood stiles and rails, 3/4 inch (19 mm) thick, with 1/4-inch- (6.4-mm-) thick, veneer-faced plywood center panels.
- D. Cabinet Style: Face frame.
1. Face Frames: 3/4-by-1-5/8-inch (19-by-41-mm) solid wood with glued mortise and tenon or doweled joints.
- E. Exposed Cabinet End Finish: Wood veneer.
- F. Factory Finishing: Finish cabinets at factory.

2.2 CABINET MATERIALS

- A. Hardwood Plywood: HPVA HP-1.
- B. Exposed Materials:
1. Exposed Wood Species: Maple.
 - a. Select materials for compatible color and grain. Do not use two adjacent exposed surfaces that are noticeably dissimilar in color, grain, figure, or natural character markings.
 - b. Staining and Finish: As selected by Architect from manufacturer's full range of standard colors and finishes.
 2. Solid Wood: Clear hardwood lumber of species indicated, free of defects.
 3. Plywood: Hardwood plywood with face veneer of species indicated, with Grade A faces and Grade C backs of same species as faces.
- C. Semiexposed Materials: Unless otherwise indicated, provide the following:
1. Solid Wood: Sound hardwood lumber, selected to eliminate appearance defects. Same species as exposed surfaces.
 2. Plywood: Hardwood plywood with Grade C faces and not less than Grade 3 backs of same species as faces. Face veneers of same species as exposed surfaces.

- D. Concealed Materials: Solid wood or plywood, of any hardwood or softwood species, with no defects affecting strength or utility; particleboard; MDF; or hardboard.

2.3 CABINET HARDWARE

- A. General: Manufacturer's standard units complying with BHMA A156.9, of type, size, style, material, and finish as selected by Architect from manufacturer's full range of standard hardware.
- B. Door and Drawer Bumpers: Self-adhering, clear silicone rubber.
 - 1. Doors: Provide one bumper at top and bottom of closing edge of each swinging door.
 - 2. Drawers: Provide one bumper on back side of drawer front at each corner.

2.4 PLASTIC-LAMINATE-CLAD COUNTERTOPS

- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of plastic-laminate-clad countertops indicated for construction, finishes, installation, and other requirements.
- B. High-Pressure Decorative Laminate: NEMA LD 3, Grade HGP.
- C. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
 - 1. As selected by Architect from manufacturer's full range of standard options in the following categories:
 - a. Solid colors, matte finish.
 - b. Patterns, matte finish.
- D. Edge Treatment: Post formed.
- E. Core Material: Particleboard made with exterior glue.
- F. Core Thickness: 3/4 inch minimum.
 - 1. Build up countertop thickness to 1-1/2 inches (38 mm) at front, back, and ends with additional layers of core material laminated to top.
- G. Adhesive for Bonding Plastic Laminate: As selected by fabricator to comply with requirements.

2.5 COUNTERTOP FABRICATION

- A. Fabricate countertops to dimensions, profiles, and details indicated. Provide front and end overhang of 1 inch (25 mm) over base cabinets. Ease edges to radius indicated for the following:

- B. Complete fabrication, including assembly, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas, with Installer present, for compliance with requirements for installation tolerances, location of framing and reinforcements, and other conditions affecting performance of casework and countertops.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install casework with no variations in adjoining surfaces; use concealed shims. Where casework abuts other finished work, scribe and cut for accurate fit. Provide filler strips, scribe strips, and moldings in finish to match casework.
- B. Install casework without distortion so doors and drawers fit the openings, are aligned, and are uniformly spaced. Complete installation of hardware and accessories as indicated.
- C. Install casework level and plumb to a tolerance of 1/8 inch in 8 feet (3 mm in 2.4 m).
- D. Fasten casework to adjacent units and to backing.
- E. Assemble countertops and complete fabrication at Project site to the extent that it was not completed in the shop.
 - 1. Provide cutouts for appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.
- F. Countertop Installation: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.
 - 1. Install countertops level and true in line. Use concealed shims as required to maintain not more than a 1/8-inch-in-96-inches (3-mm-in-2400-mm) variation from a straight, level plane.
 - 2. Seal joints between countertop and backsplash, if any, and joints where countertop and backsplash abut walls with mildew-resistant silicone sealant or another permanently elastic sealing compound recommended by countertop material manufacturer.

3.3 ADJUSTING AND CLEANING

- A. Adjust hardware so doors and drawers are centered in openings and operate smoothly without warp or bind. Lubricate operating hardware as recommended by manufacturer.
- B. Clean casework on exposed and semiexposed surfaces. Touch up as required to restore damaged or soiled areas to match original factory finish, as approved by Architect.
- C. Repair damaged and defective countertops, where possible, to eliminate functional and visual defects. Where not possible to repair, replace countertops. Adjust joinery for uniform appearance.
- D. Protection: Provide Kraft paper or other suitable covering over countertop surfaces, taped to underside of countertop at a minimum of 48 inches (1220 mm) o.c. Remove protection at Substantial Completion.

END OF SECTION 123530

SECTION 133419 - METAL BUILDING SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Structural-steel framing.
2. Metal roof panels.
3. Metal wall panels.
4. Thermal insulation.
5. Personnel doors, frames and hardware.
6. Windows.
7. Accessories.

- B. Related Requirements:

1. Section 083613 "Sectional Doors" for sectional vehicular doors in metal building systems.
2. Mechanical specifications for locations and sizes of mechanical equipment supported by the steel framing, wall louvers and flue penetrations through the roof.

1.3 DEFINITIONS

- A. Terminology Standard: See MBMA's "Metal Building Systems Manual" for definitions of terms for metal building system construction not otherwise defined in this Section or in standards referenced by this Section.

1.4 COORDINATION

- A. Coordinate sizes and locations of concrete foundations and casting of anchor-rod inserts into foundation walls and footings. Concrete, reinforcement, and formwork requirements are specified on the Structural drawings.
- B. Coordinate metal panel assemblies with rain drainage work, flashing, trim, and construction of supports and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.5 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to metal building systems including, but not limited to, the following:
 - a. Condition of foundations and other preparatory work performed by other trades.
 - b. Structural load limitations.
 - c. Construction schedule. Verify availability of materials and erector's personnel, equipment, and facilities needed to make progress and avoid delays.
 - d. Required tests, inspections, and certifications.
 - e. Unfavorable weather and forecasted weather conditions and impact on construction schedule.
2. Review methods and procedures related to metal roof panel assemblies including, but not limited to, the following:
 - a. Compliance with requirements for purlin and rafter conditions, including flatness and attachment to structural members.
 - b. Structural limitations of purlins and rafters during and after roofing.
 - c. Flashings, special roof details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect metal roof panels.
 - d. Temporary protection requirements for metal roof panel assembly during and after installation.
 - e. Roof observation and repair after metal roof panel installation.
3. Review methods and procedures related to metal wall panel assemblies including, but not limited to, the following:
 - a. Compliance with requirements for support conditions, including alignment between and attachment to structural members.
 - b. Structural limitations of girts and columns during and after wall panel installation.
 - c. Flashings, special siding details, wall penetrations, openings, and condition of other construction that will affect metal wall panels.
 - d. Temporary protection requirements for metal wall panel assembly during and after installation.
 - e. Wall observation and repair after metal wall panel installation.
 - f. Connection to existing building.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of metal building system component.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:
 - a. Structural-steel framing.

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- b. Metal roof panels.
 - c. Metal wall panels.
 - d. Metal soffit panels.
 - e. Thermal insulation and vapor-retarder facings.
 - f. Vapor barrier.
 - g. Personnel doors and frames.
 - h. Sectional doors.
 - i. Windows.
 - j. Accessories.
- B. Shop Drawings: Indicate components by others. Include full building plan, elevations, sections, details and the following:
- 1. Anchor-Rod Plans: Submit anchor-rod plans and templates before foundation work begins. Include location, diameter, and minimum required depth and projection of anchor rods required to attach metal building to foundation. Indicate column reactions at each location.
 - 2. Structural-Framing Drawings: Show complete fabrication of primary and secondary framing; include provisions for openings. Indicate welds and bolted connections, distinguishing between shop and field applications. Include transverse cross-sections.
 - 3. Metal Roof and Wall Panel Layout Drawings: Show layouts of panels including methods of support. Include details of edge conditions, joints, panel profiles, corners, anchorages, clip spacing, trim, flashings, closures, and special details. Distinguish between factory- and field-assembled work; show locations of exposed fasteners.
 - a. Show roof-mounted items including equipment supports and penetrations, and items mounted on roof curbs.
 - b. Show wall-mounted items including personnel doors, vehicular doors, windows, louvers, and lighting fixtures.
 - c. Establish weather-tight connection to existing building.
 - 4. Accessory Drawings: Include details of the following items, at a scale of not less than 1-1/2 inches per 12 inches
 - a. Flashing and trim.
 - b. Gutters.
 - c. Downspouts.
 - d. Snow guards.
- C. Samples for Initial Selection: For units with factory-applied finishes.
- D. Samples for Verification: For the following products:
- 1. Panels: Nominal 12 inches (300 mm) long by actual panel width. Include fasteners, closures, and other exposed panel accessories.
 - 2. Flashing and Trim: Nominal 12 inches (300 mm) long. Include fasteners and other exposed accessories.
 - 3. Vapor-Retarder Facings: Nominal 6-inch- (150-mm-) square Sample.

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4. Vapor Retarder: Nominal 6-inch- (150-mm-) square Sample.
 5. Accessories: Nominal 12-inch- (300-mm-) long Samples for each type of accessory.
- E. Door Schedule: For doors and frames. Use same designations indicated on Drawings. Include details of reinforcement.
1. Door Hardware Schedule: Include details of fabrication and assembly of door hardware. Organize schedule into door hardware sets indicating complete designations of every item required for each door or opening.
 2. Keying Schedule: Detail Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations.
 3. Match owners existing keying system.
- F. Delegated-Design Submittal: For metal building systems.
1. Include analysis data indicating compliance with performance requirements and design data signed and sealed by the qualified professional engineer responsible for their preparation.

1.7 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer/fabricator and land surveyor.
- B. Welding certificates.
- C. Letter of Design Certification: Signed and sealed by a qualified professional engineer. Include the following:
1. Name and location of Project.
 2. Order number.
 3. Name of manufacturer.
 4. Name of Contractor.
 5. Building dimensions including width, length, height, and roof slope.
 6. Indicate compliance with AISC standards for hot-rolled steel and AISI standards for cold-rolled steel, including edition dates of each standard.
 7. Governing building code and year of edition.
 8. Design Loads: Include dead load, roof live load, collateral loads, roof snow load, deflection, wind loads/speeds and exposure, seismic design category or effective peak velocity-related acceleration/peak acceleration, and auxiliary loads (mechanical and fire suppression equipment).
 9. Load Combinations: Indicate that loads were applied acting simultaneously with concentrated loads, according to governing building code.
 10. Building-Use Category: Indicate category of building use and its effect on load importance factors.
- D. Erector Certificates: For qualified erector, from manufacturer.
- E. Material Test Reports: For each of the following products:

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1. Structural steel including chemical and physical properties.
2. Bolts, nuts, and washers including mechanical properties and chemical analysis.
3. Tension-control, high-strength, bolt-nut-washer assemblies.
4. Shop primers.
5. Nonshrink grout.

F. Source quality-control reports.

G. Field quality-control reports.

H. Surveys: Show final elevations and locations of major members. Indicate discrepancies between actual installation and the Contract Documents. Have surveyor who performed surveys certify their accuracy.

I. Sample Warranties: For special warranties.

1.8 CLOSEOUT SUBMITTALS

A. Maintenance Data: For metal panel finishes and door hardware to include in maintenance manuals.

1.9 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer.

1. Accreditation: Manufacturer's facility accredited according to the International Accreditation Service's AC472, "Accreditation Criteria for Inspection Programs for Manufacturers of Metal Building Systems."
2. Engineering Responsibility: Preparation of comprehensive engineering analysis and Shop Drawings by a professional engineer who is legally qualified to practice in jurisdiction where Project is located.

B. Erector Qualifications: An experienced erector who specializes in erecting and installing work similar in material, design, and extent to that indicated for this Project and who is acceptable to manufacturer.

C. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
2. AWS D1.3, "Structural Welding Code - Sheet Steel."

D. Land Surveyor Qualifications: A professional land surveyor who practices in jurisdiction where Project is located and who is experienced in providing surveying services of the kind indicated.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components, sheets, panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.
- B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.
- D. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- E. Protect foam-plastic insulation as follows:
 - 1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
 - 2. Protect against ignition at all times. Do not deliver foam-plastic insulation materials to Project site before installation time.
 - 3. Complete installation and concealment of foam-plastic materials as rapidly as possible in each area of construction.

1.11 FIELD CONDITIONS

- A. Weather Limitations: Proceed with panel installation only when weather conditions permit metal panels to be installed according to manufacturers' written instructions and warranty requirements.

1.12 WARRANTY

- A. The manufacturer shall warranty the metal building system against failure due to defective material or workmanship for a period of two (2) years from date of Substantial Completion.
- B. Special Warranty on Metal Panel Finishes: Manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period:
 - a. Roof Panels: 30 years from date of Substantial Completion.
 - b. Wall Panels: 25 years from date of Substantial Completion.
- C. Special Weathertightness Warranty for Standing-Seam Metal Roof Panels: Manufacturer agrees to repair or replace standing-seam metal roof panel assemblies that leak or otherwise fail to remain weathertight within specified warranty period.
 1. Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Nucor Building Systems or comparable product by one of the following:
 1. ACI Building Systems, Inc.
 2. American Buildings Company; a Nucor Company.
 3. Butler Manufacturing Company; a division of BlueScope Buildings North America, Inc.
 4. Architect's approved equal.
- B. Source Limitations: Obtain metal building system components, including primary and secondary framing, metal panel assemblies and accessories from single source from single manufacturer.

2.2 SYSTEM DESCRIPTION

- A. Provide a complete, integrated set of mutually dependent components and assemblies that form a metal building system capable of withstanding structural and other loads, thermally induced movement, and exposure to weather without failure or infiltration of water into building interior.
- B. Primary-Frame Type:
 1. Rigid Clear Span: Solid-member, structural-framing system without interior columns.
- C. End-Wall Framing: Manufacturer's standard, for buildings not required to be expandable, consisting of primary frame, capable of supporting one-half of a bay design load, and end-wall columns.
- D. Secondary-Frame Type: Manufacturer's standard 8 inch purlins and 8 inch exterior-framed (bypass) girts.
- E. Eave Height: 20 feet.

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- F. Bay Spacing: As indicated on Drawings.
- G. Roof Slope: Match existing.
- H. Roof System:
 - 1. Type: CFR Standing Seam Roof System as manufactured by Nucor Building Systems.
 - 2. Architect's approved equal.
- I. Exterior Wall System: Manufacturer's standard fastener, flush-profile, metal wall panels.
 - 1. Type: Classic Wall panel as manufactured by Nucor Building Systems.
 - 2. Architect's approved equal.

2.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design metal building system.
- B. Structural Performance: Metal building systems shall withstand the effects of gravity, live, dead, snow and wind loads and the following loads and stresses within limits and under conditions indicated according to procedures in MBMA's "Metal Building Systems Manual" and the "New Jersey Uniform Construction Code" and all applicable subcodes.
 - 1. Deflection and Drift Limits: Design metal building system assemblies to withstand serviceability design loads without exceeding deflections and drift limits recommended in AISC Steel Design Guide No. 3 "Serviceability Design Considerations for Steel Buildings."
- C. Seismic Performance: Metal building system shall withstand the effects of earthquake motions determined according to the "New Jersey Uniform Construction Code" and all applicable subcodes.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.
- E. Fire Propagation Characteristics: Exterior wall assemblies containing foam plastics pass NFPA 285 fire test.
- F. Structural Performance for Metal Roof and Wall Panels: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E1592:
 - 1. Wind Loads: 115 MPH, Exposure B.

- G. Air Infiltration for Metal Roof Panels: Air leakage of not more than 0.06 cfm/sq. ft. (0.3 L/s per sq. m) when tested according to ASTM E1680 at the following test-pressure difference:
 - 1. Test-Pressure Difference: 6.24 lbf/sq. ft.
- H. Air Infiltration for Metal Wall Panels: Air leakage of not more than 0.06 cfm/sq. ft. (0.3 L/s per sq. m) when tested according to ASTM E283 at the following test-pressure difference:
 - 1. Test-Pressure Difference: 6.24 lbf/sq. ft.
- I. Water Penetration for Metal Roof Panels: No water penetration when tested according to ASTM E1646 at the following test-pressure difference:
 - 1. Test-Pressure Difference: 6.24 lbf/sq. ft.
- J. Water Penetration for Metal Wall Panels: No water penetration when tested according to ASTM E331 at the following test-pressure difference:
 - 1. Test-Pressure Difference: 6.24 lbf/sq. ft.
- K. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.
 - 1. Uplift Rating: UL 60.
- L. Thermal Performance for Opaque Elements: Provide the following maximum U-factors and minimum R-values when tested according to ASTM C1363 or ASTM C518:
 - 1. Roof:
 - a. U-Factor: 0.067.
 - b. R-Value: 15.
 - 2. Walls:
 - a. U-Factor: 0.067.
 - b. R-Value: 15.

2.4 STRUCTURAL-STEEL FRAMING

- A. Structural Steel: Comply with AISC 360, "Specification for Structural Steel Buildings."
- B. Bolted Connections: Comply with RCSC's "Specification for Structural Joints Using High-Strength Bolts."
- C. Cold-Formed Steel: Comply with AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members" for design requirements and allowable stresses.

- D. Primary Framing: Manufacturer's standard primary-framing system, designed to withstand required loads and specified requirements. Primary framing includes transverse and lean-to frames; rafters, rake, and canopy beams; sidewall, intermediate, end-wall, and corner columns; and wind bracing.
1. General: Provide frames with attachment plates, bearing plates, and splice members. Factory drill for field-bolted assembly. Provide frame span and spacing indicated.
 - a. Slight variations in span and spacing may be acceptable if necessary to comply with manufacturer's standard, as approved by Architect.
 2. Rigid Clear-Span Frames: I-shaped frame sections fabricated from shop-welded, built-up steel plates or structural-steel shapes. Interior columns are not permitted.
 3. Exterior Column: Tapered.
 4. Rafter: Tapered.
- E. End-Wall Framing: Manufacturer's standard primary end-wall framing fabricated for field-bolted assembly to comply with the following:
1. End-Wall Rafters: C-shaped, cold-formed, structural-steel sheet; or I-shaped sections fabricated from shop-welded, built-up steel plates or structural-steel shapes.
- F. Secondary Framing: Manufacturer's standard secondary framing, including purlins, girts, eave struts, flange bracing, base members, gable angles, clips, headers, jambs, and other miscellaneous structural members. Unless otherwise indicated, fabricate framing from either cold-formed, structural-steel sheet or roll-formed, metallic-coated steel sheet, prepainted with coil coating, to comply with the following:
1. Purlins: C- or Z-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes; minimum 2-1/2-inch- (64-mm-) wide flanges.
 - a. Depth: As needed to comply with system performance requirements.
 2. Girts: C- or Z-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes. Form ends of Z-sections with stiffening lips angled 40 to 50 degrees from flange, with minimum 2-1/2-inch- (64-mm-) wide flanges.
 - a. Depth: 8 inches.
 3. Eave Struts: Unequal-flange, C-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes; to provide adequate backup for metal panels.
 4. Flange Bracing: Minimum 2-by-2-by-1/8-inch (51-by-51-by-3-mm) structural-steel angles or 1-inch- (25-mm-) diameter, cold-formed structural tubing to stiffen primary-frame flanges.
 5. Sag Bracing: Minimum 1-by-1-by-1/8-inch (25-by-25-by-3-mm) structural-steel angles.
 6. Base or Sill Angles: Manufacturer's standard base angle, minimum 3-by-2-inch (76-by-51-mm), fabricated from zinc-coated (galvanized) steel sheet.
 7. Purlin and Girt Clips: Manufacturer's standard clips fabricated from steel sheet. Provide galvanized clips where clips are connected to galvanized framing members.

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8. Framing for Openings: Channel shapes; fabricated from cold-formed, structural-steel sheet or structural-steel shapes. Frame head and jamb of door openings and head, jamb, and sill of other openings.
 9. Miscellaneous Structural Members: Manufacturer's standard sections fabricated from cold-formed, structural-steel sheet; built-up steel plates; or zinc-coated (galvanized) steel sheet; designed to withstand required loads.
- G. Bracing: Provide adjustable wind bracing as needed to comply with system performance requirements.
- H. Materials:
1. W-Shapes: ASTM A992/A992M; ASTM A572/A572M, Grade 50 or 55 (345 or 380); or ASTM A529/A529M, Grade 50 or 55 (345 or 380).
 2. Channels, Angles, M-Shapes, and S-Shapes: ASTM A36/A36M; ASTM A572/A572M, Grade 50 or 55 (345 or 380); or ASTM A529/A529M, Grade 50 or 55 (345 or 380).
 3. Plate and Bar: ASTM A36/A36M; ASTM A572/A572M, Grade 50 or 55 (345 or 380); or ASTM A529/A529M, Grade 50 or 55 (345 or 380).
 4. Structural-Steel Sheet: Hot-rolled, ASTM A1011/A1011M, Structural Steel (SS), Grades 30 through 55 (205 through 380), or High-Strength Low-Alloy Steel (HSLAS) or High-Strength Low-Alloy Steel with Improved Formability (HSLAS-F), Grades 45 through 70 (310 through 480); or cold-rolled, ASTM A1008/A1008M, Structural Steel (SS), Grades 25 through 80 (170 through 550), or HSLAS, Grades 45 through 70 (310 through 480).
 5. Metallic-Coated Steel Sheet: ASTM A653/A653M, SS, Grades 33 through 80 (230 through 550), or HSLAS or HSLAS-F, Grades 50 through 80 (340 through 550); with G60 (Z180) coating designation; mill phosphatized.
 6. Metallic-Coated Steel Sheet Prepainted with Coil Coating: Steel sheet, metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A755/A755M.
 - a. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653/A653M, SS, Grades 33 through 80 (230 through 550), or HSLAS or HSLAS-F, Grades 50 through 80 (340 through 550); with G90 (Z275) coating designation.
 7. Non-High-Strength Bolts, Nuts, and Washers: ASTM A307, Grade A, carbon-steel, hex-head bolts; ASTM A563 (ASTM A563M) carbon-steel hex nuts; and ASTM F844 plain (flat) steel washers.
 - a. Finish: Plain.
 8. High-Strength Bolts, Nuts, and Washers: ASTM F3125/F3125M, Grade A325 (Grade A325M), Type 1, heavy-hex steel structural bolts; ASTM A563, Grade DH, (ASTM A563M, Class 10S) heavy-hex carbon-steel nuts; and ASTM F436/F436M, Type 1, hardened carbon-steel washers.
 - a. Finish: Plain.

9. Unheaded Anchor Rods: ASTM F1554, Grade 36.
 - a. Configuration: Straight with 3-inch projection.
 - b. Nuts: ASTM A563 (ASTM A563M).
 - c. Plate Washers: ASTM A36/A36M carbon steel.
 - d. Washers: ASTM F436 (ASTM F436M) hardened carbon steel.
 - e. Finish: Plain.

I. Finish: Factory primed. Apply specified primer immediately after cleaning and pretreating.

1. Clean and prepare in accordance with SSPC-SP2.
2. Coat with manufacturer's standard primer. Apply primer to primary and secondary framing to a minimum dry film thickness of 1 mil (0.025 mm).
 - a. Prime secondary framing formed from uncoated steel sheet to a minimum dry film thickness of 0.5 mil (0.013 mm) on each side.

2.5 METAL ROOF PANELS

A. Standing-Seam, Vertical-Rib, Metal Roof Panels: Formed with vertical ribs at panel edges and intermediate stiffening ribs symmetrically spaced between ribs; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels and engaging opposite edge of adjacent panels.

1. Material: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.024-inch (24 gauge) nominal uncoated steel thickness. Prepainted by the coil-coating process to comply with ASTM A755/A755M.
 - a. Exterior Finish: Two-coat fluoropolymer.
 - b. Color: As selected by Architect from manufacturer's full range.
2. Clips: Manufacturer's recommended One-piece fixed or Two-piece sliding to accommodate thermal movement.
3. Joint Type: Mechanically seamed.
4. Panel Coverage: 24 inches.
5. Panel Height: 3 inches.

B. Finishes:

1. Exposed Coil-Coated Finish:
 - a. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

2. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil (0.013 mm).

2.6 METAL WALL PANELS

- A. Exposed-Fastener, Tapered-Rib, Metal Wall Panels: Formed with raised, trapezoidal major ribs and intermediate stiffening ribs symmetrically spaced between major ribs; designed to be installed by lapping side edges of adjacent panels and mechanically attaching panels to supports using exposed fasteners in-side laps.
 1. Material: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.018-inch (26 gauge) nominal uncoated steel thickness. Prepainted by the coil-coating process to comply with ASTM A755/A755M.
 - a. Exterior Finish: Siliconized polyester.
 - b. Color: As selected by Architect from manufacturer's full range.
 2. Major-Rib Spacing: 12 inches o.c.
 3. Panel Coverage: 36 inches.
 4. Panel Height: 1.25 inches.
- B. Finishes:
 1. Exposed Coil-Coated Finish:
 - a. Siliconized Polyester: Epoxy primer and silicone-modified, polyester-enamel topcoat; with a minimum dry film thickness of 0.2 mil (0.005 mm) for primer and 0.8 mil (0.02 mm) for topcoat.
 2. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil (0.013 mm).

2.7 THERMAL INSULATION

- A. Roof Insulation: Subject to compliance with requirements, **provide one of the two following types of roof insulation w/ a minimum R-Value of 15.**
 1. Basis of Design: R-Seal is a rigid polyurethane insulation board with a bonded polypropylene/scrim and tape tabs as manufactured by Pacific Insulation Products or a comparable product by one of the following:
 - a. Architect's approved equal.

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2. Basis of Design: EcoTouch Certified R Metal Building Insulation is a light density fibrous glass blanket with a white polyethylene vapor retarder liner fabric as manufactured by Owens Corning or a comparable product by one of the following:
 - a. Architect's approved equal.
 3. Vapor-Retarder Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.
- B. Wall Insulation: Subject to compliance with requirements, provide the following type of wall insulation with a minimum R-Value of 15.
1. Basis of Design: R-Seal is a rigid polyurethane insulation board with a bonded polypropylene/scrim and tape tabs as manufactured by Pacific Insulation Products or a comparable product by one of the following:
 - a. Architect's approved equal.
- C. Slab and Foundation Insulation: Extruded polystyrene board insulation, Type IV: ASTM C578, , 40-psi (276-kPa) ASTM D1621 minimum compressive strength; unfaced.
1. 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:
 - a. Dow Chemical Company (The).
 - b. Owens Corning.
 - c. Architect's approved equal.
 2. Flame-Spread Index: Not more than 5 when tested in accordance with ASTM E84.
 3. Smoke-Developed Index: Not more than 45-175 when tested in accordance with ASTM E84.
- D. Sheet Vapor Barrier, Class A: ASTM E1745, Class A, with maximum water-vapor permeance of 0.1 and a minimum tensile strength of 45 lb/in; not less than 10 mils (0.25 mm) thick. Include manufacturer's recommended adhesive or pressure-sensitive tape.
1. 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:
 - a. Stego Industries, LLC.
 - b. W.R. Meadows, Inc.
 - c. Architect's approved equal.
 - d. Vapor-Barrier Tape: Pressure-sensitive tape of type recommended by vapor-barrier manufacturer for sealing joints and penetrations in vapor barrier.

E. Accessories:

1. Retainer Strips: For securing insulation between supports, 0.025-inch (0.64-mm) nominal-thickness, formed, metallic-coated steel or PVC retainer clips colored to match insulation facing.

2.8 PERSONNEL DOORS AND FRAMES

A. Interior Swinging Personnel Doors and Frames Heavy-Duty Doors and Frames: ANSI/SDI A250.8, Level 2; ANSI/SDI A250.4, Level B to receive factory- and field-applied hardware according to BHMA A156 Series.

1. Doors:

- a. Type: As indicated in the Door and Frame Schedule.
- b. Face: Uncoated steel sheet, minimum thickness of 0.042 inch (1.0 mm).
- c. Edge Construction: Model 1, Full Flush.
- d. Edge Bevel: Provide manufacturer's standard beveled or square edges.
- e. Fabricate concealed stiffeners, reinforcement, edge channels, and moldings from either cold- or hot-rolled steel sheet.
- f. Core: Kraft-paper honeycomb.
- g. Glazing Frames: Steel frames to receive field-installed glass.

2. Frames:

- a. Materials: Uncoated steel sheet, minimum thickness of 0.053 inch (1.3 mm).
- b. Construction: Knocked down or welded.

3. Exposed Finish: Prime.

B. Exterior Swinging Personnel Doors and Frames: Extra-Heavy-Duty Doors and Frames: ANSI/SDI A250.8, Level 3; ANSI/SDI A250.4, Level A to receive factory- and field-applied hardware according to BHMA A156 Series.

1. Doors:

- a. Type: As indicated in the Door and Frame Schedule.
- b. Face: Metallic-coated steel sheet, minimum thickness of 0.053 inch (1.3 mm), with minimum A40.
- c. Edge Construction: Model 1, Full Flush.
- d. Edge Bevel: Provide manufacturer's standard beveled or square edges.
- e. Top Edge Closures: Close top edges of doors with flush closures of same material as face sheets. Seal joints against water penetration.
- f. Bottom Edges: Close bottom edges of doors where required for attachment of weather stripping with end closures or channels of same material as face sheets. Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape.

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- g. Fabricate concealed stiffeners, reinforcement, edge channels, and moldings from either cold- or hot-rolled steel sheet.
 - h. Core: Polyurethane or Polyisocyanurate.
 - i. Glazing Frames: Steel frames to receive field-installed glass.
- 2. Frames:
 - a. Materials: Metallic-coated steel sheet, minimum thickness of 0.067 inch (1.7 mm), with minimum A40.
 - b. Construction: Welded.
- 3. Exposed Finish: Prime.
- 4. Hardware:
 - a. Hardware Set-01: Provide the following hardware for doors 100.1 & E110.1, as follows:
 - 1) Hinges: BHMA A156.1. Three antifriction-bearing, standard-weight, full-mortise, stainless-steel, template-type hinges; 4-1/2 by 4-1/2 inches (114 by 114 mm), with nonremovable pin.
 - 2) Exit Device: BHMA A156.3. Rim device with lever trim, Grade 1. Match owners existing keying system.
 - 3) Threshold: BHMA A156.21. Extruded aluminum.
 - 4) Closer: BHMA A156.4. Surface-applied, heavy-duty rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm.
 - 5) Weather Stripping: Vinyl applied to head and jambs, with vinyl sweep at sill.
 - b. Hardware Set-02: Provide the following hardware for door 101.1, as follows:
 - 1) Hinges: BHMA A156.1. Three antifriction-bearing, standard-weight, full-mortise, stainless-steel, template-type hinges; 4-1/2 by 4-1/2 inches (114 by 114 mm), with nonremovable pin.
 - 2) Lockset: BHMA A156.2. Key-in-lever cylindrical type, Grade 1. Match owners existing keying system.
 - 3) Threshold: BHMA A156.21. Extruded aluminum.
 - 4) Closer: BHMA A156.4. Surface-applied, heavy-duty rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm.
 - 5) Weather Stripping: Vinyl applied to head and jambs, with vinyl sweep at sill.

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- c. Hardware Set-03: Provide the following hardware for doors E100.1 & E100.2, as follows:
 - 1) Exit Device: BHMA A156.3. Rim device with lever trim, Grade 1. Match owners existing keying system.
- d. Hardware Set-04: Provide the following hardware for door 107.1, as follows:
 - 1) Hinges: BHMA A156.1. Three antifriction-bearing, standard-weight, full-mortise, stainless-steel, template-type hinges; 4-1/2 by 4-1/2 inches (114 by 114 mm), with nonremovable pin.
 - 2) Lockset: BHMA A156.2. Office function key-in-lever cylindrical type, Grade 1. Match owners existing keying system.
 - 3) Silencers: Rubber; three silencers on strike jambs of single door frames and two silencers on heads of double door frames.
 - 4) Wall Stop: Concave rubber stop with 2 1/2 inch diameter base and stainless steel cover.
- e. Hardware Set-05: Provide the following hardware for door 108.1, as follows:
 - 1) Hinges: BHMA A156.1. Three antifriction-bearing, standard-weight, full-mortise, stainless-steel, template-type hinges; 4-1/2 by 4-1/2 inches (114 by 114 mm), with nonremovable pin.
 - 2) Lockset: BHMA A156.2. Office function key-in-lever cylindrical type, Grade 1. Match owners existing keying system.
 - 3) Silencers: Rubber; three silencers on strike jambs of single door frames and two silencers on heads of double door frames.
 - 4) Closer: BHMA A156.4. Surface-applied, heavy-duty rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm.
 - 5) Wall Stop: Concave rubber stop with 2 1/2 inch diameter base and stainless steel cover.
- f. Hardware Set-06: Provide the following hardware for doors 109.1 & 111.1, as follows:
 - 1) Hinges: BHMA A156.1. Three antifriction-bearing, standard-weight, full-mortise, stainless-steel, template-type hinges; 4-1/2 by 4-1/2 inches (114 by 114 mm), with nonremovable pin.
 - 2) Lockset: BHMA A156.2. Office function key-in-lever cylindrical type, Grade 1. Match owners existing keying system.
 - 3) Silencers: Rubber; three silencers on strike jambs of single door frames and two silencers on heads of double door frames.
 - 4) Closer: BHMA A156.4. Surface-applied, heavy-duty rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm.

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5. Anchors and Accessories: Manufacturer's standard units, galvanized according to ASTM A123/A123M.
6. Fabrication: Fabricate doors and frames to be rigid; neat in appearance; and free from defects, warp, or buckle. Provide continuous welds on exposed joints; grind, dress, and make welds smooth, flush, and invisible.

C. Materials:

1. Cold-Rolled Steel Sheet: ASTM A1008/A1008M, Commercial Steel (CS), Type B, suitable for exposed applications.
2. Hot-Rolled Steel Sheet: ASTM A1011/A1011M, CS, Type B; free of scale, pitting, or surface defects; pickled and oiled.
3. Metallic-Coated Steel Sheet: ASTM A653/A653M, CS, Type B; with A40 (ZF180) zinc-iron-alloy (galvannealed) coating designation.

D. Finishes for Personnel Doors and Frames:

1. Prime Finish: Factory-apply manufacturer's standard primer immediately after cleaning and pretreating.
 - a. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

E. Glazing:

1. Safety Glass: Category II materials complying with testing requirements in 16 CFR 1201.
 - a. Provide safety glazing labeling.
 - b. Refer to Section 081000 - "Door Schedule".
2. Glazing Stops: Screw-applied or snap-on glazing stops. Match material and finish of window frames.

2.9 WINDOWS

A. Aluminum Windows: Metal building system manufacturer's standard, with self-flashing mounting fins, and as follows:

1. Type, Performance Class, and Performance Grade: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 and as follows:
 - a. Horizontal-Sliding Units: HS-CW30.
2. Aluminum Extrusions: ASTM B221 (ASTM B221M), alloy and temper recommended by manufacturer for strength, corrosion resistance, and application of required finish, but not

less than 0.064-inch (1.63-mm) thickness at any location for main frame and sash members.

- a. Thermally Improved Construction: Fabricate window units with an integral, concealed, low-conductance thermal barrier; located between exterior materials and window members exposed on interior side; in a manner that eliminates direct metal-to-metal contact.
3. Fasteners, Anchors, and Clips: Nonmagnetic stainless steel, aluminum, or other noncorrosive material, compatible with aluminum window members, trim, hardware, anchors, and other components of window units. Fasteners shall not be exposed, except for attaching hardware.
 - a. Reinforcement: Where fasteners screw-anchor into aluminum less than 0.128 inch (3.26 mm) thick, reinforce interior with aluminum or nonmagnetic stainless steel to receive screw threads, or provide standard, noncorrosive, pressed-in, spline grommet nuts.
 4. Hardware: Manufacturer's standard; of aluminum, stainless steel, die-cast steel, malleable iron, or bronze; including the following:
 - a. Cam-action sweep sash lock and keeper at meeting rails.
 - b. Nylon sash rollers for horizontal-sliding units.
 5. Sliding-Type Weather Stripping: Woven-pile weather stripping of wool, polypropylene, or nylon pile and resin-impregnated backing fabric; complying with AAMA 701/702.
 6. Insect Screens: Provide removable insect screen on each operable exterior sash, with screen frame finished to match window unit, and as follows:
 - a. Fabric: Manufacturer's standard aluminum wire fabric or glass-fiber mesh fabric.
- B. Glazing:
1. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of 2.5-mm-thick clear float glass separated by a dehydrated interspace, qualified according to ASTM E2190.
 2. Safety Glass: Category II materials complying with testing requirements in 16 CFR 1201.
 - a. Provide safety glazing labeling.
 3. Glazing Stops: Screw-applied or snap-on glazing stops. Match material and finish of window frames.
 4. Factory-Glazed Fabrication: Glaze window units in the factory to greatest extent possible and practical for applications indicated.

C. Finish:

1. Baked-Enamel Finish, Organic Coating: Thermosetting, modified-acrylic enamel primer/topcoat system complying with AAMA 2603 except with a minimum dry film thickness of 0.7 mil (0.02 mm), medium gloss.
 - a. Color: As selected by Architect from manufacturer's full range.

2.10 ACCESSORIES

A. General: Provide accessories as standard with metal building system manufacturer and as specified. Fabricate and finish accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes. Comply with indicated profiles and with dimensional and structural requirements.

1. Form exposed sheet metal accessories that are without excessive oil-canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.

B. Roof Panel Accessories: Provide components required for a complete metal roof panel assembly including copings, fasciae, corner units, ridge closures, clips, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal roof panels unless otherwise indicated.

1. Closures: Provide closures at eaves and ridges, fabricated of same material as metal roof panels.
2. Clips: Manufacturer's standard, formed from steel sheet, designed to withstand negative-load requirements.
3. Cleats: Manufacturer's standard, mechanically seamed cleats formed from steel or nylon-coated aluminum sheet.
4. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- (25-mm-) thick, flexible closure strips; cut or premolded to match metal roof panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
5. Thermal Spacer Blocks: Where metal panels attach directly to purlins, provide thermal spacer blocks of thickness required to provide 1-inch (25-mm) standoff; fabricated from extruded polystyrene.

C. Wall Panel Accessories: Provide components required for a complete metal wall panel assembly including copings, fasciae, mullions, sills, corner units, clips, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal wall panels unless otherwise indicated.

1. Closures: Provide closures at eaves and rakes, fabricated of same material as metal wall panels.
2. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- (25-mm-) thick, flexible closure

strips; cut or premolded to match metal wall panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

- D. Flashing and Trim: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.018-inch (0.46-mm) nominal uncoated steel thickness, prepainted with coil coating; finished to match adjacent metal panels.
1. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers.
 2. Opening Trim: Manufacturer's standard zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, prepainted with coil coating. Trim head and jamb of door openings, and head, jamb, and sill of other openings.
- E. Gutters: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.018-inch (0.46-mm) nominal uncoated steel thickness, prepainted with coil coating; finished to match roof fascia and rake trim. Match profile of gable trim, complete with end pieces, outlet tubes, and other special pieces as required. Fabricate in minimum 96-inch- (2438-mm-) long sections, sized according to SMACNA's "Architectural Sheet Metal Manual."
1. Gutter Supports: Fabricated from same material and finish as gutters.
- F. Downspouts: Corrugated zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.018-inch (0.46-mm) nominal uncoated steel thickness, prepainted with coil coating; finished to match metal wall panels. Fabricate in minimum 10-foot- (3-m-) long sections, complete with formed elbows and offsets.
1. Mounting Straps: Fabricated from same material and finish as gutters.
- G. Snow Guards: Prefabricated, noncorrosive units designed to be installed without penetrating metal roof panels, and complete with predrilled holes, clamps, or hooks for anchoring. Snow guard design and compatibility shall be acceptable to the metal roof panel manufacturer.
1. Snow guard design and compatibility shall be acceptable to the metal roof panel manufacturer.
 2. Seam-Mounted, Bar-Type Snow Guards: Aluminum rods or bars held in place by stainless-steel clamps attached to vertical ribs of standing-seam metal roof panels.
 - a. Aluminum Finish: Mill.
 - b. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - 1) Metal Roof Innovations, Ltd.; Model S-5 with ColorGard Snow Retention System.
 - 2) Architect's approved equal.
 - c. Color: As selected by Architect from manufacturers standard colors.

- H. Pipe Flashing: Premolded, EPDM pipe collar with flexible aluminum ring bonded to base or as indicated on the Mechanical drawings.
- I. Materials:
 - 1. Fasteners: Self-tapping screws, bolts, nuts, self-locking rivets and bolts, end-welded studs, and other suitable fasteners designed to withstand design loads. Provide fasteners with heads matching color of materials being fastened by means of plastic caps or factory-applied coating.
 - a. Fasteners for Metal Roof Panels: Self-drilling or self-tapping, zinc-plated, hex-head carbon-steel screws, with a stainless-steel cap or zinc-aluminum-alloy head and EPDM sealing washer.
 - b. Fasteners for Metal Wall Panels: Self-drilling or self-tapping, zinc-plated, hex-head carbon-steel screws with EPDM sealing washers bearing on weather side of metal panels.
 - c. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws with hex washer head.
 - 2. Corrosion-Resistant Coating: Cold-applied asphalt mastic, compounded for 15-mil (0.4-mm) dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.
 - 3. Nonmetallic, Shrinkage-Resistant Grout: ASTM C1107/C1107M, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.
 - 4. Metal Panel Sealants:
 - a. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene-compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape of manufacturer's standard size.
 - b. Joint Sealant: ASTM C920; one-part elastomeric polyurethane or polysulfide; of type, grade, class, and use classifications required to seal joints in metal panels and remain weathertight; and as recommended by metal building system manufacturer.

2.11 FABRICATION

- A. General: Design components and field connections required for erection to permit easy assembly.
 - 1. Mark each piece and part of the assembly to correspond with previously prepared erection drawings, diagrams, and instruction manuals.
 - 2. Fabricate structural framing to produce clean, smooth cuts and bends. Punch holes of proper size, shape, and location. Members shall be free of cracks, tears, and ruptures.
- B. Tolerances: Comply with MBMA's "Metal Building Systems Manual" for fabrication and erection tolerances.

- C. Primary Framing: Shop fabricate framing components to indicated size and section, with baseplates, bearing plates, stiffeners, and other items required for erection welded into place. Cut, form, punch, drill, and weld framing for bolted field assembly.
1. Make shop connections by welding or by using high-strength bolts.
 2. Join flanges to webs of built-up members by a continuous, submerged arc-welding process.
 3. Brace compression flange of primary framing with steel angles or cold-formed structural tubing between frame web and purlin web or girt web, so flange compressive strength is within allowable limits for any combination of loadings.
 4. Weld clips to frames for attaching secondary framing if applicable, or punch for bolts.
 5. Shop Priming: Prepare surfaces for shop priming according to SSPC-SP 2. Shop prime primary framing with specified primer after fabrication.
- D. Secondary Framing: Shop fabricate framing components to indicated size and section by roll forming or break forming, with baseplates, bearing plates, stiffeners, and other plates required for erection welded into place. Cut, form, punch, drill, and weld secondary framing for bolted field connections to primary framing.
1. Make shop connections by welding or by using non-high-strength bolts.
 2. Shop Priming: Prepare uncoated surfaces for shop priming according to SSPC-SP 2. Shop prime uncoated secondary framing with specified primer after fabrication.
- E. Metal Panels: Fabricate and finish metal panels at the factory to greatest extent possible, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements. Comply with indicated profiles and with dimensional and structural requirements.
1. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of metal panel.

2.12 SOURCE QUALITY CONTROL

- A. Special Inspection:
1. Accredited Manufacturers: Special inspections will not be required if fabrication is performed by an IAS AC472-accredited manufacturer approved by authorities having jurisdiction to perform such Work without special inspection.
 - a. After fabrication, submit copy of certificate of compliance to authorities having jurisdiction, certifying that Work was performed according to Contract requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with erector present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Before erection proceeds, survey elevations and locations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments to receive structural framing, with erector present, for compliance with requirements and metal building system manufacturer's tolerances.
 - 1. Engage land surveyor to perform surveying.
- C. Proceed with erection only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition.
- B. Provide temporary shores, guys, braces, and other supports during erection to keep structural framing secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural framing, connections, and bracing are in place unless otherwise indicated.

3.3 ERECTION OF STRUCTURAL FRAMING

- A. Erect metal building system according to manufacturer's written instructions and drawings.
- B. Do not field cut, drill, or alter structural members without written approval from metal building system manufacturer's professional engineer.
- C. Set structural framing accurately in locations and to elevations indicated, according to AISC specifications referenced in this Section. Maintain structural stability of frame during erection.
- D. Base and Bearing Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials and roughen surfaces prior to setting plates. Clean bottom surface of plates.
 - 1. Set plates for structural members on wedges, shims, or setting nuts as required.
 - 2. Tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
 - 3. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.

- E. Align and adjust structural framing before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with framing. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
 - 1. Level and plumb individual members of structure.
- F. Primary Framing and End Walls: Erect framing level, plumb, rigid, secure, and true to line. Level baseplates to a true even plane with full bearing to supporting structures, set with double-nutted anchor bolts. Use grout to obtain uniform bearing and to maintain a level base-line elevation. Moist-cure grout for not less than seven days after placement.
 - 1. Make field connections using high-strength bolts installed according to RCSC's "Specification for Structural Joints Using High-Strength Bolts" for bolt type and joint type specified.
 - a. Joint Type: Snug tightened or pretensioned as required by manufacturer.
- G. Secondary Framing: Erect framing level, plumb, rigid, secure, and true to line. Field bolt secondary framing to clips attached to primary framing.
 - 1. Provide rake or gable purlins with tight-fitting closure channels and fasciae.
 - 2. Locate and space wall girts to suit openings such as doors and windows.
 - 3. Provide supplemental framing at entire perimeter of openings, including doors, windows, louvers, ventilators, and other penetrations of roof and walls.
- H. Bracing: Install bracing in roof and sidewalls where indicated on erection drawings.
 - 1. Tighten rod and cable bracing to avoid sag.
 - 2. Locate interior end-bay bracing only where indicated.
- I. Framing for Openings: Provide shapes of proper design and size to reinforce openings and to carry loads and vibrations imposed, including equipment furnished under mechanical and electrical work. Securely attach to structural framing.
- J. Erection Tolerances: Maintain erection tolerances of structural framing within AISC 303.

3.4 METAL PANEL INSTALLATION, GENERAL

- A. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.
- B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.

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- C. Examination: Examine primary and secondary framing to verify that structural-panel support members and anchorages have been installed within alignment tolerances required by manufacturer.
 - 1. Examine roughing-in for components and systems penetrating metal panels, to verify actual locations of penetrations relative to seams before metal panel installation.
- D. General: Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.
 - 1. Field cut metal panels as required for doors, windows, and other openings. Cut openings as small as possible, neatly to size required, and without damage to adjacent metal panel finishes.
 - a. Field cutting of metal panels by torch is not permitted unless approved in writing by manufacturer.
 - 2. Install metal panels perpendicular to structural supports unless otherwise indicated.
 - 3. Flash and seal metal panels with weather closures at perimeter of openings and similar elements. Fasten with self-tapping screws.
 - 4. Locate and space fastenings in uniform vertical and horizontal alignment.
 - 5. Locate metal panel splices over structural supports with end laps in alignment.
 - 6. Lap metal flashing over metal panels to allow moisture to run over and off the material.
- E. Lap-Seam Metal Panels: Install screw fasteners using power tools with controlled torque adjusted to compress EPDM washers tightly without damage to washers, screw threads, or metal panels. Install screws in predrilled holes.
 - 1. Arrange and nest side-lap joints so prevailing winds blow over, not into, lapped joints. Lap ribbed or fluted sheets one full rib corrugation. Apply metal panels and associated items for neat and weathertight enclosure. Avoid "panel creep" or application not true to line.
- F. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with corrosion-resistant coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by metal roof panel manufacturer.
- G. Joint Sealers: Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of metal panel assemblies. Provide types of gaskets, fillers, and sealants indicated; or, if not indicated, provide types recommended by metal panel manufacturer.
 - 1. Seal metal panel end laps with double beads of tape or sealant the full width of panel. Seal side joints where recommended by metal panel manufacturer.

3.5 METAL ROOF PANEL INSTALLATION

- A. General: Provide metal roof panels of full length from eave to ridge unless otherwise indicated or restricted by shipping limitations.
1. Install ridge caps as metal roof panel work proceeds.
 2. Flash and seal metal roof panels with weather closures at eaves and rakes. Fasten with self-tapping screws.
- B. Standing-Seam Metal Roof Panels: Fasten metal roof panels to supports with concealed clips at each standing-seam joint, at location and spacing and with fasteners recommended by manufacturer.
1. Install clips to supports with self-drilling or self-tapping fasteners.
 2. Install pressure plates at locations indicated in manufacturer's written installation instructions.
 3. Seamed Joint: Crimp standing seams with manufacturer-approved motorized seamer tool so that clip, metal roof panel, and factory-applied sealant are completely engaged.
 4. Rigidly fasten eave end of metal roof panels and allow ridge end free movement for thermal expansion and contraction. Pre-drill panels for fasteners.
 5. Provide metal closures at rake edges, rake walls and each side of ridge caps.
- C. Metal Fascia Panels: Align bottom of metal panels and fasten with blind rivets, bolts, or self-drilling or self-tapping screws. Flash and seal metal panels with weather closures where fasciae meet soffits, along lower panel edges, and at perimeter of all openings.
- D. Metal Roof Panel Installation Tolerances: Shim and align metal roof panels within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.6 METAL WALL PANEL INSTALLATION

- A. General: Install metal wall panels in orientation, sizes, and locations indicated on Drawings. Install panels perpendicular to girts, extending full height of building, unless otherwise indicated. Anchor metal wall panels and other components of the Work securely in place, with provisions for thermal and structural movement.
1. Unless otherwise indicated, begin metal panel installation at corners with center of rib lined up with line of framing.
 2. Shim or otherwise plumb substrates receiving metal wall panels.
 3. When two rows of metal panels are required, lap panels 4 inches (102 mm) minimum.
 4. When building height requires two rows of metal panels at gable ends, align lap of gable panels over metal wall panels at eave height.
 5. Rigidly fasten base end of metal wall panels and allow eave end free movement for thermal expansion and contraction. Pre-drill panels.
 6. Flash and seal metal wall panels with weather closures at eaves and rakes, and at perimeter of all openings. Fasten with self-tapping screws.
 7. Install screw fasteners in predrilled holes.

8. Install flashing and trim as metal wall panel work proceeds.
 9. Apply elastomeric sealant continuously between metal base channel (sill angle) and concrete, and elsewhere as indicated on Drawings; if not indicated, as necessary for waterproofing.
 10. Align bottom of metal wall panels and fasten with blind rivets, bolts, or self-drilling or self-tapping screws.
 11. Provide weatherproof escutcheons for pipe and conduit penetrating exterior walls.
- B. Metal Wall Panels: Install metal wall panels over rigid board insulation on exterior side of girts. Attach metal wall panels to supports with fasteners as recommended by manufacturer.
- C. Installation Tolerances: Shim and align metal wall panels within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m), noncumulative; level, plumb, and on location lines; and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.7 THERMAL INSULATION INSTALLATION

- A. General: Install insulation concurrently with metal panel installation, in thickness indicated to cover entire surface, according to manufacturer's written instructions.
1. Set vapor-retarder-faced units with vapor retarder toward warm side of construction unless otherwise indicated. Do not obstruct ventilation spaces except for firestopping.
 2. Tape joints and ruptures in vapor retarder and seal each continuous area of insulation to the surrounding construction to ensure airtight installation.
 3. Install factory-laminated, vapor-retarder-faced blankets straight and true in one-piece lengths, with both sets of facing tabs sealed, to provide a complete vapor retarder.
- B. Blanket Roof Insulation: Comply with one of the following installation methods:
1. Between-Purlin Installation: Extend insulation and vapor retarder between purlins. Carry vapor-retarder-facing tabs up and over purlin, overlapping adjoining facing of next insulation course and maintaining continuity of retarder. Hold in place with bands and crossbands below insulation.
 2. Over-Purlin-with-Spacer-Block Installation: Extend insulation and vapor retarder over and perpendicular to top flange of secondary framing. Install layer of filler insulation over first layer to fill space formed by metal roof panel standoffs. Hold in place by panels fastened to standoffs.
 - a. Thermal Spacer Blocks: Where metal roof panels attach directly to purlins, install thermal spacer blocks.
 3. Two-Layers-between-Purlin-with-Spacer-Block Installation: Extend insulation and vapor retarder between purlins. Carry vapor-retarder-facing tabs up and over purlin, overlapping adjoining facing of next insulation course and maintaining continuity of retarder. Install layer of filler insulation over first layer to fill space between purlins formed by thermal spacer blocks. Hold in place with bands and crossbands below insulation.

- a. Thermal Spacer Blocks: Where metal roof panels attach directly to purlins, install thermal spacer blocks.
4. Retainer Strips: Install retainer strips at each longitudinal insulation joint, straight and taut, nesting with secondary framing to hold insulation in place.
- C. Board Roof Insulation: Extend board insulation in thickness indicated to cover entire roof. Hold in place as recommended by insulation manufacturer to secondary framing. Comply with manufacturers' written instructions.
 1. Retainer Strips: Install retainer strips at each longitudinal insulation joint, straight and taut, nesting with secondary framing to hold insulation in place.
- D. Board Wall Insulation: Extend board insulation in thickness indicated to cover entire wall. Hold in place by metal wall panels fastened to secondary framing. Comply with manufacturers' written instructions.
 1. Retainer Strips: Install retainer strips at each longitudinal insulation joint, straight and taut, nesting with secondary framing to hold insulation in place.
- E. Board Foundation and Slab Insulation:
 1. Foundation Wall Insulation: Extend board insulation in thickness indicated a minimum of 24 inches vertically below exterior grade line. Fasten insulation to concrete substrates with insulation adhesive according to manufacturer's written instructions. Butt panels together for tight fit.
 2. Slab Insulation: Extend board insulation in thickness indicated a minimum of 24 inches horizontally from interior face of exterior wall. Loosely lay insulation units according to manufacturer's written instructions. Stagger end joints and tightly abut insulation units.

3.8 INSTALLATION OF VAPOR BARRIER

- A. Sheet Vapor Barriers: Place, protect, and repair sheet vapor barrier in accordance with ASTM E1643 and manufacturer's written instructions.
 1. Install vapor barrier with longest dimension parallel with direction of concrete pour.
 2. Face laps away from exposed direction of concrete pour.
 3. Lap vapor barrier over footings and grade beams not less than 6 inches (150 mm), sealing vapor barrier to concrete.
 4. Lap joints 6 inches (150 mm) and seal with manufacturer's recommended tape.
 5. Terminate vapor barrier at the top of floor slabs, grade beams, and pile caps, sealing entire perimeter to floor slabs, grade beams, foundation walls, or pile caps.
 6. Seal penetrations in accordance with vapor barrier manufacturer's instructions.
 7. Protect vapor barrier during placement of reinforcement and concrete.
 - a. Repair damaged areas by patching with vapor barrier material, overlapping damages area by 6 inches (150 mm) on all sides, and sealing to vapor barrier

3.9 DOOR AND FRAME INSTALLATION

- A. General: Install doors and frames plumb, rigid, properly aligned, and securely fastened in place according to manufacturers' written instructions. Coordinate installation with wall flashings and other components. Seal perimeter of each door frame with elastomeric sealant used for metal wall panels.
- B. Personnel Doors and Frames: Install doors and frames according to NAAMM-HMMA 840. Fit non-fire-rated doors accurately in their respective frames, with the following clearances:
 - 1. Between Doors and Frames at Jambs and Head: 1/8 inch (3 mm).
 - 2. At Door Sills with Threshold: 3/8 inch (9.5 mm).
 - 3. At Door Sills without Threshold: 3/4 inch (19.1 mm).
- C. Door Hardware:
 - 1. Install surface-mounted items after finishes have been completed at heights indicated in DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 - 2. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 - 3. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
 - 4. Set thresholds for exterior doors in full bed of sealant complying with requirements for concealed mastics.

3.10 WINDOW INSTALLATION

- A. General: Install windows plumb, rigid, properly aligned, without warp or rack of frames or sash, and securely fasten in place according to manufacturer's written instructions. Coordinate installation with wall flashings and other components. Seal perimeter of each window frame with elastomeric sealant used for metal wall panels.
 - 1. Separate dissimilar materials from sources of corrosion or electrolytic action at points of contact with other materials by complying with requirements specified in AAMA/WDMA/CSA 101/I.S.2/A440.
- B. Set sill members in bed of sealant or with gaskets, for weathertight construction.
- C. Install windows and components to drain condensation, water penetrating joints, and moisture migrating within windows to the exterior.
- D. Mount screens directly to frames with tapped screw clips.

3.11 ACCESSORY INSTALLATION

- A. General: Install accessories with positive anchorage to building and weathertight mounting and provide for thermal expansion. Coordinate installation with flashings and other components.
1. Install components required for a complete metal roof panel assembly, including trim, copings, ridge closures, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
 2. Install components for a complete metal wall panel assembly, including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
 3. Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with corrosion-resistant coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by manufacturer.
- B. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible and set units true to line and level. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
1. Install exposed flashing and trim that is without excessive oil-canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance.
 2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (600 mm) of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with mastic sealant (concealed within joints).
- C. Gutters: Join sections with lapped-and-sealed joints. Attach gutters to eave with gutter hangers spaced as required for gutter size, but not more than 36 inches (914 mm) o.c. using manufacturer's standard fasteners. Provide end closures and seal watertight with sealant. Provide for thermal expansion.
- D. Downspouts: Join sections with 1-1/2-inch (38-mm) telescoping joints. Provide fasteners designed to hold downspouts securely 1 inch (25 mm) away from walls; locate fasteners at top and bottom and at approximately 48 inches o.c. in between.
1. Provide elbows at gutters and base of downspouts to direct water away from building where indicated on the drawings.
 2. Tie downspouts to underground drainage system where indicated on the drawings.
- E. Snow Guards: Attach supports to vertical ribs of standing-seam metal roof panels with clamps or set screws. Do not use fasteners that will penetrate metal roof panels.
1. Provide one row of snow guards at each eave, at locations indicated on Drawings.

- F. Pipe Flashing: Form flashing around pipe penetration and metal roof panels. Fasten and seal to panel as recommended by manufacturer.

3.12 FIELD QUALITY CONTROL

- A. Product will be considered defective if it does not pass tests and inspections.
- B. Prepare test and inspection reports.

3.13 ADJUSTING

- A. Doors: After completing installation, test and adjust doors to operate easily, free of warp, twist, or distortion.
- B. Door Hardware: Adjust and check each operating item of door hardware and each door to ensure proper operation and function of every unit. Replace units that cannot be adjusted to operate as intended.
- C. Windows: Adjust operating sashes and ventilators, screens, hardware, and accessories for a tight fit at contact points and at weather stripping to ensure smooth operation and weathertight closure. Lubricate hardware and moving parts.

3.14 CLEANING AND PROTECTION

- A. Repair damaged galvanized coatings on galvanized items with galvanized repair paint according to ASTM A780/A780M and manufacturer's written instructions.
- B. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.
- C. Touchup Painting: After erection, promptly clean, prepare, and prime or reprime field connections, rust spots, and abraded surfaces of prime-painted structural framing bearing plates, and accessories.
 - 1. Clean and prepare surfaces by SSPC-SP 2, "Hand Tool Cleaning," or by SSPC-SP 3, "Power Tool Cleaning."
 - 2. Apply a compatible primer of same type as shop primer used on adjacent surfaces.
- D. Metal Panels: Remove temporary protective coverings and strippable films, if any, as metal panels are installed. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.
 - 1. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

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- E. Insulation: Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes.
 - 1. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.
- F. Doors and Frames: Immediately after installation, sand rusted or damaged areas of prime coat until smooth and apply touchup of compatible air-drying primer.
- G. Windows: Clean metal surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances. Clean factory-glazed glass immediately after installing windows.

END OF SECTION 133419

SECTION 311200 – SELECTIVE SITE CLEARING

PART 1 GENERAL

1.1 DESCRIPTION

- A. Site clearing consists of clearing of the site within the limits of construction to include the following:
 - 1. Removal and legal disposal of trees, brush, weeds, roots and similar materials within areas where work is to be performed.
 - 2. Removal and disposal of structures and all other obstructions which are designated for removal by the ARCHITECT during construction.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Tree paint: Applicable section of the Standard Specifications.
- B. Other materials: At Contractor's option, subject to the approval of the ARCHITECT.

PART 3 EXECUTION

3.1 METHODS OF CONSTRUCTION

- A. Referenced sections in the Standard Specifications.
 - 1. Section 201: Clearing Site.
 - 2. Section 801: Miscellaneous Landscaping Materials.
- B. Protection: Roads, structures, pavement areas, grass or landscaping to remain shall be protected by Contractor in a manner approved by the ARCHITECT.
- C. General: Site Clearing shall conform to Section 201 of the Standard Specifications, and as designated on Plans or as directed by the ARCHITECT.
 - 1. Clear the project site within the limits shown on the Plans, or as directed by the ARCHITECT.
 - 2. Repair all injuries to bark, trunk, limbs, and roots of remaining plants by properly dressing, cutting, bracing, and painting using approved tree surgery methods, tools and equipment.
 - 3. Clear designated area of brush, weeds, trees, roots, debris, and other unsuitable material.

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4. Trim tree branches overhanging proposed structures and pavements, and along proposed trails. Trim tree branches overhanging roadways, driveways, or other paved areas to height of sixteen feet.
5. Remove existing structures required for construction of roadways, driveways or other paved areas. Notify property owners forty-eight hours prior to removal of privately owned structures.
 - a. Coordinate removal of privately owned structures with individual property owners.
 - b. Remove privately owned structures desired to be retained by property owner in a manner which will minimize damage. If desired, property owner shall be given opportunity to remove said structures himself, provided this work is completed within time limit which will not conflict with Contractor's operations.
 - c. Upon removal, property owner shall be given opportunity to remove privately owned structures from the project site.
 - d. Coordinate this work with ARCHITECT.
 - e. This work shall be subject to approval of ARCHITECT.
6. Legally dispose of accumulated waste materials.
7. Grade all grubbed and cleared areas as specified in applicable sections.

END OF SECTION

SECTION 312300.10 - SITE EXCAVATION, FILLING AND GRADING

PART 1 GENERAL

1.1 DESCRIPTION

- A. Description of work:
- B. Excavation, filing and grading includes but is not limited to:
 - 1. Excavating for pavement and foundations.
 - 2. Filling and backfilling to attain indicated grades.
 - 3. Trenching and trench backfilling, if and where directed by the ARCHITECT.
 - 4. Rough and finish grading of site; furnishing and installing broken stone subbase for slabs, foundations and structures.
 - 5. Furnishing and installing quarry blend stone subbase material for pavements and other structures.
 - 6. Any additional work as may be specified in the Statement of Work.
- C. Definitions:
 - 1. Excavation: Removal and disposal of all material encountered when establishing required grade elevations, including pavements and other obstructions visible on the ground surface, and underground structures and utilities indicated to be demolished and removed.
 - 2. Unauthorized excavation: Removal of material beyond specified subgrade elevations without approval of ARCHITECT.

PART 2 PRODUCTS

2.1 MATERIALS

- A. General: All fill and backfill materials shall be subject to the approval of the ARCHITECT.
- B. Notifications: For approval of borrow materials, notify the ARCHITECT at least five (5) working days in advance of intention to import material, designate the proposed borrow area, and perform sampling and testing at CONTRACTOR'S expense, if directed by the ARCHITECT, to prove the quality and suitability of the material.
- C. On-Site Fill:

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1. All on-site materials used for fill shall be subject to the approval of the ARCHITECT, and to the following requirements:
 - a. Free from deleterious substances, stumps, brush, weeds, roots, sod, rubbish, garbage and matter that may decay.
 - b. Free of large rocks or lumps that, in the opinion of the ARCHITECT, may create voids or prevent proper compaction.

D. Borrow fill materials:

Free from deleterious substances, stumps, brush, weeds, roots, sod, rubbish, garbage and matter that may decay, and shall conform to the Standard Specifications, except as modified by the supplemental requirements below:

1. Containing no rocks or lumps over one inch (1") in greatest dimension.
2. Composed of soil aggregate, or soil aggregate and rock. The portion passing the four inch sieve shall contain not more than fifteen percent (15%) by weight of material passing the number 200 sieve. When composed of soil aggregate and rock, the proportion of soil aggregate shall not be less than that required to fill all the rock voids.

E. Trench and structural backfill material:

1. Shall conform to the requirements specified for on-site fill material except as modified by the supplemental requirements below:
2. Backfill to a height of two feet above the top of pipes, culverts and other structures and immediately adjacent to structures with material free from stones or rock fragments larger than two inches in greatest dimension.
3. Select backfill material shall be soil aggregate I-13. Soil aggregate select backfill materials, when designated, shall conform to Section 901.11 of the Standard Specifications.

F. Broken stone material:

1. Broken stone subbase material under slabs, foundations and structures shall conform to Section 901.03.01 of the Standard Specifications, and meeting the gradations specified in Table 901-1.03.01-1. Size shall be 3/8".
2. Trench stabilization material for bedding shall conform to the above requirements. Size shall be as shown on the Plans.

G. Subbase Material: Quarry blend stone subbase for bituminous and concrete pavements and other structures shall be Type I-5 conforming to the requirements for Dense Graded Aggregate Base Course in Section 302 of the Standard Specifications.

- H. Other materials: All other materials, not specifically described for a complete and proper installation, shall be as selected by the CONTRACTOR and approved by the ARCHITECT.

PART 3 EXECUTION

3.1 METHODS OF CONSTRUCTION

- A. Requirements of regulatory agencies:
1. All excavations shall be in compliance with Federal Occupational Safety and Health Act and Rules and Regulations of State of New Jersey Department of Labor and Industry, Bureau of Engineering and Safety, N.J.A.C. 12:180.
 2. Excavation work shall be in compliance with applicable requirements of other governing authorities having jurisdiction.
- B. Reference standards included in this Specification section:
1. Standard Specifications:
 - a. Section 202: Excavation
 - b. Section 301: Subbase
 - c. Subsection 302: Aggregate Base Coarse
 - d. Subsection 901: Aggregates
 2. American Society for Testing and Materials (ASTM):
 - a. D-1556-64 (Reapproved 1974): Density of Soil in Place by the Sand-Cone Method
 - b. D-1557-78: Moisture Density Relations of Soils and Soil Aggregate Mixtures Using 10 lb. Rammer and 18-Inch Drop
 - c. D-2049-69: Relative Density of Cohesionless Soils
 - d. D-2166-66 (Reapproved 1979): Unconfined Compressive Strength of Cohesive Soil
 - e. D-2922-78: Density of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth).
- C. Existing utilities:

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1. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult the Utility Owner immediately for directions. Cooperate with owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of Utility Owner.
 2. Do not interrupt existing utilities serving facilities occupied and used by OWNER or others, except when permitted in writing by ARCHITECT and then only after acceptable temporary utility services have been provided.
 3. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies for shut-off of services if lines are active.
- D. Use of explosives: The use of explosives is not permitted.
- E. Protection of persons and property:
1. Barricade open excavations occurring as part of this work and post with warning lights as required to protect persons on the site. Operate warning lights as recommended by authorities having jurisdiction.
 2. Protect trees, shrubs, lawns, and other features remaining as part of final landscaping.
 3. Protect structures, utilities, sidewalks, pavements and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.
 4. Refer to paragraphs of General Conditions regarding protection of vegetation and structures.
 5. In the event of damage, immediately make all repairs and replacements to the approval of the ARCHITECT at no cost to the OWNER.
- F. Dust control:
1. Use all means necessary to control dust on and near the work if such dust is caused by the CONTRACTOR'S operations during performance of the work or if resulting from the conditions in which the CONTRACTOR leaves the site.
 2. Thoroughly moisten all surfaces as required to prevent dust being a nuisance to the public, neighbors and concurrent performance of other work on the site.
- G. Weather conditions: Do not place, spread, roll or fill material during freezing, raining, or otherwise unfavorable weather conditions. Do not resume work until conditions are favorable as determined by the ARCHITECT.

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- H. Inspection by Contractor: Examine the areas and conditions under which excavating, filling and grading are to be performed and notify the ARCHITECT, in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.
- I. Preparation:
1. Prior to commencement of work, establish location and extent of all utilities in the work areas. Maintain, protect as required existing utilities which pass through the work area.
 2. Prior to excavation in pavement areas, cut existing pavement vertically with sharp tool on a straight line to the limits of excavation shown on Plans or as directed by the ARCHITECT. Maintain cut straight and neat, or recut and dress as directed by the ARCHITECT.
- J. Excavation:
1. Unauthorized excavation: Unauthorized excavation, including remedial work directed by the ARCHITECT, shall be at the CONTRACTOR'S expense. Lean concrete fill may be used to bring subgrade elevations to proper positions when acceptable to the ARCHITECT.
 2. Additional excavation:
 - a. When excavation has reached required subgrade elevations, notify the ARCHITECT who will make an inspection of conditions.
 - b. If unsuitable bearing materials are encountered at the required subgrade elevations, carry excavations deeper and replace the excavated material as directed by the ARCHITECT.
 - c. Removal of unsuitable material and its replacement as directed will be paid on the basis of contract conditions relative to changes in work if payment has not been provided for in the Proposal.
 3. Dewatering:
 - a. Prevent surface water and subsurface or groundwater from flowing into excavations and from flooding project site and surrounding area.
 - b. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.

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- c. Convey water removed from excavations and rain water to collecting or run-off areas. Establish and maintain temporary drainage ditches and other diversions outside excavation limits for each structure. Do not use trench excavations as temporary drainage ditches.
4. Material storage:
 - a. Stockpile satisfactory excavated materials where directed until required for use as backfill or fill. Place, grade and shape stockpiles for proper drainage.
 - b. Locate and retain soil materials away from edge of excavations.
 - c. Dispose of excess soil material and waste materials as herein specified. Excavated material unsuitable for backfilling shall be kept separate from other materials excavated, and disposed of. Materials suitable for backfilling shall not be disposed of until completion of filling or backfilling operations.
5. Excavation for pavements: Cut surface under pavements to comply with cross-sections, elevations and grades as shown.
6. Excavation for trenches, if and where directed by the ARCHITECT:
 - a. Dig trenches to the uniform width required for the particular item to be installed, sufficiently wide to provide ample working room.
 - (1). Maximum trench width to a point of two feet (2') above the outside top of pipe shall be the pipe outer diameter plus twenty-four inches (24").
 - (2). Maximum trench width at ground surface shall be as shown on Plans.
 - b. Excavate trenches to the depth indicated or required. Carry the depth of trenches for piping to establish the indicated flow lines and invert elevations. Beyond the building perimeter, keep bottoms of trenches for which elevations are not given sufficiently below finish grade to avoid freeze-ups.
 - c. Trenches for pipes shall not be operated more than the numbers of linear feet of pipe that can be placed and backfilled in one (1) day.
 - d. Place the various types of materials in the areas as designated on the Plans, or as directed by the ARCHITECT.
 - e. Pipe bedding shall be as shown on Plans.

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7. Cold weather protection: Protect excavation bottoms against freezing when atmospheric temperature is less than thirty-five (35) degrees.

K. Backfill, fill and compaction:

1. General:

- a. Place acceptable material in layers to required subgrade elevations.
- b. Fills: Use material obtained from on-site excavation, except use borrow material when specified and/or shown on the Plans.
- c. Backfilling: Use material obtained from on-site excavation, except use select backfill where indicated on Plans or as directed by the ARCHITECT. Backfill to a height of two feet (2') above top of pipe with earth free from stones, rock fragments, dirt clods or frozen material greater than one inch (1") in largest dimension.
- d. Do not provide borrow material until all acceptable excavated materials on the site have been utilized in the work.
- e. Place the various types of materials in the areas as designated on the Plans, or as directed by the ARCHITECT.

2. Backfill excavation as promptly as work permits, but not until completion of the following:

- a. Removal of concrete formwork.
- b. Removal of trash and debris.
- c. Inspection, testing, approval and recording locations of underground utilities.

3. Backfilling prior to approvals:

- a. Should any of the work be so enclosed or covered up before it has been approved, uncover all such work at no additional cost to the OWNER.
- b. After the work has been completely tested, inspected and approved, make all repairs and replacements necessary to restore the work to the condition in which it was found at the time of uncovering, all at no additional cost to the OWNER.

4. Ground surface preparation prior to filling:

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- a. Remove vegetation, debris, unsatisfactory soil materials, obstructions and deleterious materials from existing ground surface to a depth of not less than four inches (4") and not more than six inches (6") prior to placement of fills. Plow, strip or break-up sloped surfaces steeper than one (1) vertical to four (4) horizontal to a depth of not less than six inches (6") so that fill material will bond with existing surface.
 - b. When 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 required depth and percentage of maximum density.
5. Placement and compaction:
- a. Place backfill materials in layers not more than six inches (6") in loose depth.
 - b. Control soil compaction during construction providing minimum percentage of density specified for each area classification listed below.
 - c. Pavement areas defined, for the purpose of this Paragraph, as extending a minimum of five feet (5') beyond the pavement.
 - d. 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 D-1557; and not less than the following percentages of relative density determined in accordance with ASTM D-2049, for soils which will not exhibit a well defined moisture-density relationship.
 - (1) Structures: Compact top twelve inches (12") of subgrade and each layer of backfill of fill material at ninety-five percent (95%) maximum dry density or ninety percent (90%) relative dry density.
 - (2) Lawn or Unpaved Areas: Compact top six inches (6") of subgrade and each layer of backfiller or fill material at 90 percent (90%) maximum dry density.
 - (3) Walkways: Compact top six inches (6") of subgrade and each layer of backfill or fill material at 95 percent (95%) maximum dry density or 90 percent (90%) relative dry density.
 - (4) Pavement Areas: Compact top twelve inches (12") of subgrade and each layer of backfill or fill material at 95 percent (95%) maximum dry density or 90 percent (90%) relative dry density.
 - (5) Subbase Materials: Compact each layer of subbase material to 95 percent (95%) of maximum dry density.

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- (6) Trench stabilization materials: Compact each layer of material to ninety-five percent (95%) of maximum dry density.
 - e. Moisture control:
 - (1) Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material, to prevent free water appearing on surface during or subsequent to compaction operations.
 - (2) Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
 - (3) 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 dicing, harrowing or pulverizing until moisture content is reduced to a satisfactory value.
 - f. Puddling or jetting will not be permitted.
 - g. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice, or other unsuitable materials.
 - h. Place backfill and fill materials evenly adjacent to structures, to required elevations. Take care to prevent wedging action of backfill against structures by carrying the material uniformly around structure to approximately same elevation in each lift.
- L. Grading:
- 1. General: Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finish surface within specified tolerances, compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.
 - 2. Grading:
 - a. Lawn or unpaved areas: Finish area to receive topsoil to within not more than 0.10 feet above or below the required subgrade elevations.
 - b. Walks: Shape surface of areas under walks to line, grade and cross-section, with finish surface not more than 1/2 inch above or below the required subgrade elevation.
 - c. Pavement: Shape surface of areas under pavement line, grade and cross-section, with finish surface not more than 1/2 inch above or below the required subgrade elevation.

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3. Compaction: After grading, compact subgrade surface to the depth and percentage of maximum density for each area classification.
 4. Treatment after grading:
 - a. After grading is completed and the ARCHITECT has finished his inspection, permit no further excavating, filling or grading except with the approval of and inspection of the ARCHITECT.
 - b. Use all means necessary to prevent erosion of freshly graded areas during construction and until such time as permanent drainage and erosion control measures have been installed.
 5. Subgrade preparation: All subgrade preparation shall be performed in accordance with the applicable Articles of the New Jersey State Highway Department Standard Specifications except as may be modified by this Specification Section.
- M. Subbase course:
1. General:
 - a. Subbase Course consists of placing quarry blend stone subbase materials in layers of specified thickness over subgrade, as shown on Plans.
 - b. Provide Subbase Course in accordance with Section 301 of the Standard Specifications, except as otherwise modified by this Specification Section.
 2. Grade control: During construction, maintain lines and grades including crown and cross-slope of subbase course.
 3. Placing:
 - a. Prior to placing subbase course under bituminous concrete or other non-portland cement concrete surfaces, apply an herbicide to the subgrade material. The type of herbicide and the method of application shall be approved by the ARCHITECT prior to beginning this work.
 - b. Place subbase course material on prepared subgrade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting subbase material during placement operations.
 - c. When a compacted subbase course is shown to be eight inches (8") or less, place material in equal layers, except no single layer shall be more than eight inches (8") in thickness when compacted.

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- d. Spread, shape and compact all subbase course material deposited on the subgrade during the same day.
- N. Broken (crushed) stone subbase course:
1. General: Broken Stone Subbase Course consists of placing material in layers of specified thickness, over subgrade to support structures as shown on the Plans.
 2. Placing: Place Broken Stone Subbase Course as specified for Quarry Blend Stone Subbase Course.
- O. Field quality control:
1. Quality control testing during construction: Allow testing service to inspect and approve subgrades and fill layers before further construction work is performed.
 - a. Subgrade. The subgrade shall be in a proper finished condition conforming to the proper line and grade and free of any soft spots or other deficiencies. The subgrade shall be tested by running a roller of a weight at least equal to that used in the paving operation over the entire subgrade. If the deformation of the subgrade is excessive, in the opinion of the ARCHITECT, the subgrade must be stabilized in a manner satisfactory to the ARCHITECT.
 - b. Subbase course. If the subgrade has a CBR value of twenty (20) or greater, as determined by the American Society for testing and Materials Method for Bearing ratio of Laboratory Compacted Soils (ASTM Designation D 1883), no subbase course is required. Subgrade soils of Type A-1, A-2-4 and A-2-5 of the American Association of State Highway Officials Classification System for Soils (AASHO Designation M 145) will not normally require a subbase course. Subgrade soils of other types will normally require a subbase course of Soil Aggregate Type 2, Class A or B, with a minimum thickness of four (4) inches, to provide the required CBR value.
 - c. Take all tests at locations as directed by the ARCHITECT.
 2. If in the opinion of ARCHITECT based on testing service reports, subgrade or fill which have been placed are below specified density, provide additional compaction and testing as directed by the ARCHITECT, at no expense to the OWNER. This shall include compaction and testing at areas initially tested and at other locations as directed.
- P. Maintenance:
1. Protection of graded area:

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- a. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
 - b. Repair and re-establish grades in settled, eroded and rutted areas to specified tolerances.
2. Reconditioning compacted areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape and compact to required density prior to further construction.
- Q. Disposal of excess and waste materials:
1. Removal and disposal of excess material shall be the responsibility of the CONTRACTOR.

END OF SECTION

SECTION 312316.10 - EXCAVATION (UNCLASSIFIED)

PART 1 GENERAL

1.1 DESCRIPTION

- A. The excavation and removal of all earth, rock, brick, stone, concrete, small structures, existing pavements, and all other materials of whatever character encountered, required for the construction of roadways and their appurtenances; the transportation of the excavated materials; the construction of embankment with the materials excavated; all grading, fertilizing, seeding, and mulching; the disposal of unsuitable and surplus materials; and all other work as specified in this section.

PART 2 PRODUCTS

2.1 MATERIALS

- A. No materials are involved.

PART 3 EXECUTION

3.1 METHODS OF CONSTRUCTION

- A. Reference Standards used in this Specification section.
 - 1. Standard Specifications:
 - a. Section 202: Excavation
 - b. Section 203: Embankment
- B. Protection:
 - 1. Protect trees, shrubs, lawns and other features remaining as part of final landscaping.
 - 2. Protect curbs, inlets, manholes, utility poles, and all other existing structures to remain.
 - 3. Protect vegetation and structures.
 - 4. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
 - 5. Repair and reestablish grades in settled, eroded, and rutted areas to specified tolerance.

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6. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape and compact to required density prior to further construction.

C. Preparation:

1. Field measurements:
 - a. Layout work limits. Coordinate this work with the ENGINEER.
 - b. Set grade stakes.
2. Prior to commencement of work, establish location and extent of all utilities in the work areas. Maintain, protect as required existing utilities which pass through the work area.
3. Prior to excavating, cut existing pavement vertically with sharp tool on a straight line at a distance of six (6") inches beyond limits of excavation shown on plans. Maintain cut straight and neat, or recut and dress as directed by the ENGINEER.

D. Grading:

1. Grade project site to required levels, profiles, contours, and elevation, ready for finish grading and paving.
2. Methods of construction for excavation and grading shall conform to Section 203 of the Standard Specifications.
3. Grades shall be uniform levels or slopes between points where elevations are given or between such points and existing finished grades. Abrupt change in slopes shall be rounded.
4. Use all means necessary to prevent dust being a nuisance to the public.
5. Soil shall not be worked, or fill placed, during freezing weather, when frozen, or unstable due to excessive moisture.
6. Unstable or unsuitable material encountered at the prescribed bottom limits of roadway excavation shall be removed within limits as directed by the ENGINEER. Backfill the excavated areas with suitable material obtained from project excavation as directed by the ENGINEER.
7. Compaction: Compact any embankment for this project as specified in Section 203.03.02, Placing and Compacting Methods, of the Standard Specifications. Embankment material shall be free of stumps, brush, weeds, roots, and other material that may decay.
8. Compact subgrade in all paved areas as specified in Section 203.03 of the Standard Specifications.

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9. Dispose of surplus or unsuitable excavated materials.

END OF SECTION

SECTION 312500 - TEMPORARY SOIL EROSION AND SEDIMENT CONTROL MEASURES

PART 1 GENERAL

1.1 DESCRIPTION

- A. This work shall consist of temporary control measures ordered by the ARCHITECT during the life of the contract and as shown on Plans, to control erosion and sediment through use of berms, dikes, dams, sediment basins, fiber mats, netting, gravel, mulches, grasses, and other erosion control devices or methods.
- B. The primary objective of this specification is to control soil erosion to the maximum extent possible with reasonable and economical construction practices.
- C. The temporary control provisions contained herein shall be coordinated with the permanent erosion control features (grass, pavement and other restorations) specified elsewhere in the contract to the extent practical to assure economical, effective and continuous erosion control throughout the construction and post-construction period.
- D. The erosion control measures described herein shall be continued until the construction is complete and final restorations installed.
- E. Wherever construction exposes work which is subject to erosion, the extent of such exposure in advance of the subsequent construction shall be subject to the approval of the ARCHITECT. Erosion control features or other work to be completed within such areas shall follow as soon after exposure as practical.
- F. All materials and methods of construction shall be in accordance with the New Jersey State Standards for Soil Erosion and Sediment Control.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Mulches may be hay, straw, fiber mats, netting, wood cellulose, corn or tobacco stalks, bark, corn cobs, wood chips, or other suitable material acceptable to the ARCHITECT and shall be reasonable clean and free of noxious weeds deleterious materials.
- B. Grass shall be a quick growing species (such rye grass, Italian rye grass, or cereal grasses) suitable to the area providing a temporary cover.
- C. Fertilizer and soil conditioners shall be a standard commercial grade acceptable to the ARCHITECT.
- D. Others as specified by the ARCHITECT.

PART 3 EXECUTION

3.1 METHODS OF CONSTRUCTION

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- A. Preconstruction conference: At the preconstruction conference or prior to the start of the applicable construction, the CONTRACTOR shall submit for acceptance his schedules for accomplishment of temporary and permanent erosion control work, as are applicable for excavation work, and any other elements of the project which may contribute to ground erosion or siltation.
- B. Construction requirements:
1. The ARCHITECT has the authority to limit the surface area of erodible earth material exposed by excavation and grading operations, and to direct the CONTRACTOR to provide immediate permanent or temporary pollution control measures to prevent contamination of adjacent streams, water sources, or bodies of water. Such work may involve the construction of temporary berms, dikes, dams, sediment basins, slopes drains, and use of temporary mulches, mats, seeding or other control devices or methods as necessary to control erosion. Cut slopes shall be temporarily seeded and mulched as the excavation proceeds to the extent considered desirable and practical.
 2. The CONTRACTOR will be required to incorporate all permanent erosion control features to include the required pavement and grass restorations into the project at the earliest practical time as out-lined in his accepted schedule. Temporary control measures will be used to correct conditions that develop during construction that were not foreseen during the design stages that are needed prior to installation or permanent control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.
 3. Where erosion is likely to be a problem, excavation and grading operation shall be so scheduled and performed that permanent erosion control features can follow immediately; otherwise temporary erosion control measures may be required between successive construction stages.
 4. The ARCHITECT will limit the area of excavation and grading operations in progress commensurate with the CONTRACTOR's capability and progress in keeping the finish permanent pollution control measures current in accordance with the accepted schedule. Should seasonal limitations make such coordination unrealistic, temporary erosion control measures shall be taken immediately to the extent feasible and justified.
 5. The ARCHITECT may increase or decrease the amount of surface area of erodible earth material to be exposed at one time by excavation and grading operations as determined by his analysis of project conditions.
 6. Project soil conditions and the demonstrated ability and performance of the CONTRACTOR in controlling erosion will be the prime factors used by the ARCHITECT in the determination of reasonable areas.
 7. In the event of conflict between these requirements and pollution control laws,

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rules, or regulations of other federal or state or location agencies, the more restrictive laws, rules, or regulations shall apply.

8. The CONTRACTOR will be responsible for maintaining all soil erosion and sediment control measures in an acceptable manner. All temporary measures shall be removed by the CONTRACTOR if and as directed by the ARCHITECT.

END OF SECTION

SECTION 313116 - TERMITE CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Soil treatment.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components, and profiles for termite control products.
 - 2. Include the EPA-Registered Label for termiticide products.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer.
- B. Product Certificates: For each type of termite control product.
- C. Application Notification: Scheduled application date with the Owner. Do not apply treatment without Owner's approval of the application date.
- D. Soil Treatment Application Report: After application of termiticide is completed, submit report for Owner's records and include the following:
 - 1. Date and time of application.
 - 2. Moisture content of soil before application.
 - 3. Termiticide brand name and manufacturer.
 - 4. Quantity of undiluted termiticide used.

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5. Dilutions, methods, volumes used, and rates of application.
6. Areas of application.
7. Water source for application.

E. Sample Warranties: For special warranties.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A specialist who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment and products in jurisdiction where Project is located and who employs workers trained and approved by manufacturer to install manufacturer's products.

1.7 FIELD CONDITIONS

A. Soil Treatment:

1. Environmental Limitations: To ensure penetration, do not treat soil that is water saturated or frozen. Do not treat soil while precipitation is occurring. Comply with requirements of the EPA-Registered Label and requirements of authorities having jurisdiction.
2. Related Work: Coordinate soil treatment application with excavating, filling, grading, and concreting operations. Treat soil under footings, grade beams, and ground-supported slabs before construction.

1.8 WARRANTY

A. Soil Treatment Special Warranty: Manufacturer's standard form, signed by Applicator and Contractor, certifying that termite control work consisting of applied soil termiticide treatment will prevent infestation of subterranean termites. If subterranean termite activity or damage is discovered during warranty period, re-treat soil and repair or replace damage caused by termite infestation.

1. Warranty Period: Three years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain termite control products from single source.

2.2 SOIL TREATMENT

A. Termiticide: EPA-Registered termiticide acceptable to authorities having jurisdiction, in an aqueous solution formulated to prevent termite infestation.

1. Service Life of Treatment: Soil treatment termiticide that is effective for not less than three years against infestation of subterranean termites.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Application Notification: Scheduled application date with the Owner. Do not apply treatment without Owner's approval of the application date.
- B. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for moisture content of soil per termiticide label, interfaces with earthwork, slab and foundation work, landscaping, utility installation, and other conditions affecting performance of termite control.
- C. Proceed with application only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. General: Prepare work areas according to the requirements of authorities having jurisdiction and according to manufacturer's written instructions before beginning application and installation of termite control treatment(s). Remove extraneous sources of wood cellulose and other edible materials, such as wood debris, tree stumps and roots, stakes, formwork, and construction waste wood from soil within and around foundations.
- B. Soil Treatment Preparation: Remove foreign matter and impermeable soil materials that could decrease treatment effectiveness on areas to be treated. Loosen, rake, and level soil to be treated, except previously compacted areas under slabs and footings. Termiticides may be applied before placing compacted fill under slabs if recommended in writing by termiticide manufacturer.
 1. Fit filling hose connected to water source at the site with a backflow preventer, according to requirements of authorities having jurisdiction.

3.3 APPLYING SOIL TREATMENT

- A. Application: Mix soil treatment termiticide solution to a uniform consistency. Distribute treatment uniformly. Apply treatment at the product's EPA-Registered Label volume and rate for maximum specified concentration of termiticide to the following so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction.
 1. Slabs-on-Grade and Basement Slabs: Underground-supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.

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2. Foundations: Soil adjacent to and along the entire inside perimeter of foundation walls; along both sides of interior partition walls; around plumbing pipes and electric conduit penetrating the slab; around interior column footers, piers, and chimney bases; and along the entire outside perimeter, from grade to bottom of footing.
3. Masonry: Treat voids.
4. Penetrations: At expansion joints, control joints, and areas where slabs and below-grade walls will be penetrated.

B. Post warning signs in areas of application.

C. Reapply soil treatment solution to areas disturbed by subsequent excavation, grading, landscaping, or other construction activities following application.

3.4 PROTECTION

A. Avoid disturbance of treated soil after application. Keep off treated areas until completely dry.

B. Protect termiticide solution dispersed in treated soils and fills from being diluted by exposure to water spillage or weather until ground-supported slabs are installed. Use waterproof barrier according to EPA-Registered Label instructions.

END OF SECTION 313116

SECTION 321123 - DENSE GRADED AGGREGATE BASE COURSE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Dense Grade Aggregate (D.G.A.) base course.

1.2 REFERENCES

- A. AASHTO T180 - Moisture-Density Relations of Soils Using a 10-lb (4.54 kg) Rammer and an 18-in. (457 mm) Drop.
- B. ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb (2.49 Kg) Rammer and 12 inch (304.8 mm) Drop.
- C. ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb (4.54 Kg) Rammer and 18 inch (457 mm) Drop.
- D. ASTM D2167 - Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
- E. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
- F. ASTM D3017 - Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures.

1.3 SUBMITTALS FOR REVIEW

- A. Submit one (1) sample and gradation from a certified material laboratory which shall include the name of source location of material.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Dense Graded Aggregate: As specified in Section 901.10.01 and Table 901.10.01-1 Gradation Requirements for D.G.A. of the Standard Specifications shall be met.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify subbase has been excavated and compacted, gradients and elevations are correct, and is dry.

3.2 PREPARATION

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- A. Correct irregularities in subbase gradient and elevation by scarifying, reshaping, and re-compacting.
- B. Do not place D.G.A. on soft, muddy, or frozen surfaces.

3.3 AGGREGATE PLACEMENT

- A. Spread aggregate over prepared subbase to a total compacted thickness as specified on the Plans.
- B. Place aggregate in maximum 8" inch layers, and compact to specified density.
- C. Level and contour surfaces to elevations and gradients indicated.
- D. Add small quantities of fine aggregate to coarse aggregate as appropriate to assist compaction.
- E. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.
- F. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

3.4 TOLERANCES

- A. Flatness: Maximum variation of 1/2" inch measured with 10 foot (3 m) straight edge.
- B. Scheduled Compacted Thickness: Within 1/2" inch.
- C. Variation From Design Elevation: Within 1/2" inch.

3.5 FIELD QUALITY CONTROL

- A. Compaction testing will be performed in accordance with referenced standards.
- B. If tests indicate Work does not meet specified requirements, remove Work, replace and retest.
- C. Frequency of Tests: One (1) test per 1000 sy, if and where directed by ARCHITECT.

3.6 SCHEDULES

- A. Under Asphalt Pavement:
 - 1. Compact placed dense graded aggregate materials to achieve dry density compaction of 95% percent.
- B. Under Concrete Pavement:

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1. Compact placed dense graded aggregate materials to achieve dry density compaction of 95% percent.
- C. Surface Course
1. Compact placed dense graded aggregate materials to achieve dry density compaction of 95% percent.

END OF SECTION

SECTION 329113.16 - MULCHING

PART 1 GENERAL

1.1 DESCRIPTION

- A. Provide straw mulch for seeded areas.
- B. Provide binder for straw mulch.

1.2 SUBMITTALS

- A. Manufacturer's Literature and Recommendations:
 - 1. Submit manufacturer's descriptive literature and printed application instruction for synthetic plastic emulsion, fiber mulch and vegetable based gel binders.
 - 2. Submit all of the above for ARCHITECT'S approval.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Mulch:
 - 1. Straw:
 - a. Threshed, unrotted stalks of rye, barley, or wheat; relatively free from seeds, noxious weeds, and other foreign material.
 - b. Not ground or chopped into short pieces.
- B. Straw mulch binder gels:
 - 1. Vegetables based gels:

Materials which can be classified as naturally occurring powder based hydrophylic additives formulated to provide gels, which when applied under satisfactory curing conditions, will form membraned networks of water insoluble polymers. Physiologically harmless and not having phytotoxic or crop damaging properties.
 - 2. High polymer synthetic plastic emulsion:

Miscible with all normally available water when diluted to any proportion. No longer soluble or dispersible in water after adequate drying, but tacky until grass seed has germinated. Physiologically harmless, and not having any phytotoxic or crop damaging properties.

3. Fiber mulch:

Made from wood or plant fibers containing no growth of germination inhibiting materials.

PART 3 EXECUTION

3.1 METHODS OF CONSTRUCTION

A. Product delivery, storage and handling:

1. Deliver all binder materials in manufacturer's original packaging with all tags and labels intact and legible.
2. Store and handle binder materials in accordance with manufacturer's instructions.

B. Job conditions:

1. Existing conditions: Perform mulching only after preceding related work is accepted.
2. Environmental requirements:

Do not apply synthetic plastic emulsion binder or vegetable based gel binder during rain or freezing weather.
3. Protection: Restrict foot and vehicular traffic from mulched areas to end of maintenance period.

C. Inspection:

Verify that seeding and all work affecting ground surface have been completed.

D. Preparation:

Immediately before mulching, relime, refertilize, and reseed areas which have become eroded or otherwise disturbed.

E. Installation:

1. General:
 - a. Apply straw mulch to seeded areas within seven (7) days of seed application.
 - b. Leave all mulch in place and allow to disintegrate, except remove excessive amounts of straw when directed by the ARCHITECT.

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2. Straw mulch:
 - a. Spread straw uniformly in layer 1 to 1 ½ inches thick, loose measurement.
3. Binder for straw mulch:
 - a. Evenly distribute binder over mulch.
 - b. In areas where pedestrian traffic would make use of asphalt binder objectionable, ARCHITECT may direct spreading of small quantities of topsoil on the mulch as an alternative method of securing the mulch in place.
 - c. Bind mulch in place using one (1) of the following binder materials:
 - (1) Vegetable Base Gels: Mix with water and apply by hydraulic pressure equipment. Apply in accordance with manufacturer's printed instructions, do not mix less than 40 pounds of dry material in 750 gallons of water.
 - (2) High Polymer Synthetic Plastic Emulsion: Apply by hydraulic pressure equipment at rate of 30 gallons of undiluted material per acre. Dilute in water at ratio of 1:15. Apply in accordance with manufacturer's printed instructions.
 - (3) Fiber Mulch: Mix with water and apply by hydraulic equipment. Apply in accordance with manufacturer's printed instructions, except do not use less than 400 pounds of dry product per acre.

F. Mulch maintenance:

1. Remulch all areas requiring reseeding.
2. Relime, refertilize, reseed and remulch all areas where straw mulch is displaced.
3. Perform all mulch maintenance work in accordance with the specifications without additional compensation.
4. Mulch maintenance period to extend until acceptance of project by ARCHITECT.

G. Cleaning:

In addition to cleaning required in Section Cleaning and Restorations:

1. Immediately clean spills from paved and finished surface areas.
2. Remove debris and excess materials from project site.

END OF SECTION

SECTION 329119.13 - TOPSOILING

PART 1 GENERAL

1.1 DESCRIPTION

- A. Prepare topsoil subsoil.
- B. Prepare topsoil stripped from the site, furnish topsoil required in excess of that obtained from stripping of site form approved sources located outside the project limits.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Topsoiling: General requirements for topsoil furnished from within or outside the project limits.
 - 1. Containing no stones, lumps, roots or other objects larger than ½ inch in any dimension.
 - 2. Acid-Alkaline Range: pH 5.8 to 6.5
 - 3. Free of pests, pest larvae, and matter toxic to plants.
 - 4. Maximum soluble salts: 500ppm
 - 5. Free of viable Bermudagrass, quackgrass, Johnsongrass, nutsedge, poison ivy, Canada thistle, and other objectionable grassy or broadleaf weeds.
 - 6. Contractor shall submit a sample of topsoil prior to installation. If borrow material is proposed, the topsoil must be tested by CONTRACTOR for compliance with these specifications, and screened, if necessary, to remove objects larger than specified dimension.
- B. Topsoil furnished from outside project limits:
 - 1. Gradation range:
 - Sand (2.00mm to 0.05mm) 40 - 80 percent
 - Silt (0.050mm to 0.005mm) 10 - 30 percent
 - Clay (0.005mm and smaller) 0-10 percent
 - a. When one-half of the sand content is larger than 0.500 mm., the maximum sand content shall be seventy-five percent; and maximum clay content shall be fifteen percent.

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- b. Lower limits of silt and clay shall be flexible to extent that soils with minimum combined silt and clay content of twenty percent shall be satisfactory. However, if more than one-half of the sand is larger than 0.500mm., then the minimum combined silt and clay content shall be twenty-five percent.
 2. Organic content:
 - a. Minimum of 2.75 percent by weight.
 - b. If necessary, add peat at rate necessary to attain minimum organic content.
 3. Taken from borrow area acceptable to ARCHITECT.
- C. Soil conditioners:
- Peat:
1. Sedge or reed peat:
 - a. Consisting of incompletely decomposed plant residues resulting from anaerobic activity in water-saturated areas.
 - b. Containing no gravel, debris, or toxic compounds. Average Water Content: Not to exceed sixty-five percent by weight.
 - c. pH value: Not less than 4.
 - d. Not cultivated or aged.
 - e. Shredded or resemble texture of cultivated peat.
 - f. Minimum organic content: 75 percent by weight.
 - g. Inorganic materials: Consisting only of sand, silt and clay.
 2. If required, add peat to topsoil obtained from sources outside project limits, at rate necessary to attain minimum organic content of 2.75 percent.

PART 3 EXECUTION

3.1 METHODS OF CONSTRUCTION

A. Submittals:

1. Legal documents:
 - a. One executed copy of each legal right or easement required for storage of topsoil on private property located outside the limits of easement of right-of-way areas acquired by the OWNER.
 - b. Submit to ARCHITECT prior to storing of topsoil on any private property.

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2. Delivery slips:
 - a. Accompany all shipments of topsoil with delivery slip showing the product weight and name of supplier.
 - b. Submit delivery slip to ARCHITECT at end of each working day.
- B. Product delivery and storage.
 1. Transport topsoil from outside project limits in accordance with local regulations.
 2. Obtain all legal rights or easements necessary from private owners on whose lands topsoil may be stored. Furnish rights or easements in written form satisfactory to ARCHITECT, and signed by both CONTRACTOR and property owner involved, or their duly authorized representatives.
- C. Job conditions:
 1. Existing conditions:
 - a. Perform topsoiling only after preceding work affecting ground surface is completed.
 2. Environmental requirements:
 - a. Do not prepare or place frozen or saturated topsoil.
 3. Protection:
 - a. Protect trees and shrubs to remain as part of final landscaping against damage.
- D. Preparation:
 1. Verify that clearing, earthwork, grading and other preceding work affecting ground surface have been completed.
 2. Verify that trees, shrubs, and other plants to remain as part of final landscaping have been identified.
 3. Assure that area to be topsoiled is cleared, shaped, dressed, and approved by ARCHITECT.
 4. Do not proceed with topsoiling until conditions are satisfactory.
 5. Preparation of topsoil subsoil:

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- a. Shape and dress area to be topsoiled. This work included grading to required lines and elevations; removal of all stones, clods, lumps one-half inches ($\frac{1}{2}$ ") or larger in any dimension; removal of all wires, cables, pieces of concrete, tree roots, and debris or other unsuitable material.
- b. Do not proceed with installation of topsoil until this work has been approved by the ARCHITECT.

E. Installation:

1. Plane an even layer that will produce a prescribed compacted thickness of four inches.
2. If quantity of topsoil obtained from stripping is insufficient for the project requirements, provide required topsoil from approved sources located outside project limits.
3. Remove stones, lumps, roots, and other objects larger than one-half inches ($\frac{1}{2}$ ") in any dimension from graded topsoil surface.

F. Protection:

When directed by ARCHITECT, erect temporary signs and barriers to protect topsoiled areas.

G. Maintenance:

1. Immediately before establishment of ground cover, retopsoil and regrade areas which become eroded or otherwise disturbed.
2. Perform all maintenance work in accordance with the Specifications without additional compensation.
3. Maintenance period to extend until installation of ground cover.

H. Cleaning:

In addition to cleaning required in Specification entitled, "Cleaning and Restoration for Sitework":

1. Immediately clean spills, soil, and conditioners on paved and finished areas.
2. Distribute, stockpile, or haul topsoil in excess of the quantity required for the project as directed by the ARCHITECT.
3. Dispose of protective barricades and warning signs at termination of maintenance period.

END OF SECTION

SECTION 329219 - FERTILIZING AND SEEDING

PART 1 GENERAL

1.1 DESCRIPTION

- A. Provide topsoil, lime, fertilizer and Type "A-3" seed:
 - 1. Restoration of existing grass areas disturbed by CONTRACTOR's operations.
 - 2. Temporary soil erosion control.

1.2 SUBMITTALS

- A. Certificates:
 - 1. Seed producer's certified analysis of composition, purity, and germination of seed mixture, dated within nine (9) months of sowing.
 - 2. Manufacturer's certificate chemical analysis of fertilizer composition.
 - 3. Manufacturer's certified chemical and physical composition analysis of ground limestone.
 - 4. Submit all of the above the ARCHITECT prior to incorporation of materials into project.
- B. Delivery slips: Accompany each delivery of seed, ground limestone, and fertilizer with delivery slip showing the product weight.
- C. Test reports:
 - 1. Submit results of test report for pH analysis of soil, and when ground limestone is required, the total amount of magnesium and calcium oxides required.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Seed Mixture:

1. Type "A-3" Seed Mixture:

Kind of Seed	Percent Mixture	Minimum Germination Percent
Perennial Ryegrass	10	85
Tall Fescue	60	80
Chewings Fescue	20	85
Kentucky Bluegrass	10	75

2. Use clean, dry, new crop seed. Use seed listed in the top 100 of the NTEP.

B. Topsoil: As specified in Specification Section entitled, "Topsoiling."

C. Ground limestone:

1. Minimum total calcium and magnesium oxides content: 40 percent (40%).

2. Physical Properties:

Sieve Size	Total Percent Passing Minimum
No. 20	100
No. 60	80
No. 100	60

D. Fertilizer:

1. Use fertilizer having commercial designation of 10-20-10 or and 1-2-1 ratio fertilizer.

2. Minimum available nutrients, percent by total weight:

- a. 5, Nitrogen (N)
- b. 10, Phosphoric Oxide (P₂O₅)
- c. 5, Potash (K₂O).

3. For fertilizer to be applied with mechanical spreader in dry form, a minimum of 75 percent (75%) shall pass a No. 8 sieve, minimum of 75 percent (75%) shall be retained on a No. 16 sieve, and maximum free moisture content shall be 2 percent (2%).

E. Water: Free of substances harmful to plant growth.

- F. Mulch: As specified in Specification Section entitled, "Mulching."

PART 3 EXECUTION

3.1 METHODS OF CONSTRUCTION

- A. Product delivery, storage and handling:
1. Deliver all materials in accordance with manufacturer's printed instructions, and in such manner as to protect from moisture.
 2. Store and handle material in accordance with manufacturer's printed instructions, and in such manner as to protect from moisture.
- B. Job conditions:
1. Existing conditions: Perform seeding only after preceding work affecting ground surface is completed.
 2. Environmental requirements:
 - a. Plant seed on unfrozen soil. Soil shall be in friable condition at time of seeding.
 - b. Do not perform seeding when wind exceeds 15 mph.
 - c. Do not seed between calendar dates from May 15th to August 15th, and from October 15th to March 1st, except when weather and soil conditions are favorable as determined by ARCHITECT.
 3. Protection: Restrict foot and vehicular traffic from seeded areas after planting to end of the establishment period.
- C. Protection (prior to seeding):
1. Check that clearing, soil preparation and proceeding work affecting around surface is completed.
 2. Verify that soil is unfrozen and within allowable moisture content.
 3. Do not start work until conditions are satisfactory.
 4. When specified, install bed of topsoil.
 5. When soil to be seeded has a pH value of less than 5.8, evenly spread ground limestone, which is dry and free flowing, over area to be seeded at rate that will change soil Ph value to 6.5. Thoroughly mix limestone into upper 3 to 4 inches of soil by dicing, harrowing, or other approved method.

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6. Within limits set forth under materials, select fertilizer for use on the project. Use one selection throughout project. Apply fertilizer in quantity necessary to yield 60 pounds of nitrogen per acre. Thoroughly mix fertilizer into upper 3 to 4 inches of soil by dicing, harrowing, or other approved method.
 7. Water dry soil at least 24 hours prior to seeding to obtain a loose friable seed bed.
 8. Before applying seed, remove all stones, rocks, lumps, roots, wires, clods, and other objects measuring 1 inch or larger in any dimension.
- D. Application:
1. Broadcast half of seed with mechanical seeder.
 2. Broadcast remaining half of seed at right angles to first seeding pattern, using same broadcast method.
 3. Apply seed at the rate of 100 lbs./acre:

Type "A-3" Seed Mixture: 100 lbs/acre.
 4. Cover seed to depth of 1/8 inch by raking or other method approved by ARCHITECT.
 5. Roll seeded area with roller weighing maximum of 159 pounds per foot of width.
 6. Water seeded area until water penetrates to a depth of 3 to 4 inches.
 7. Finished seeded areas shall be smooth, even, and to prescribed lines and contour.
- E. Protection (after seeding): When directed by ARCHITECT, erect temporary signs and barriers to protect seeded areas from pedestrian and vehicular traffic.
- F. Lawn establishment:
1. Watering:
 - a. Keep soil moist during seed germination period.
 - b. Method of watering shall provide equal distribution and coverage to all areas seeded.
 - c. CONTRACTOR shall water area to a depth of 2" once a week until final acceptance.
 2. Mowing: Mow unacceptable weedy areas in fertilized and seeded area as directed by ARCHITECT if, prior to the establishment of a satisfactory stand of grass, an excess amount of weed growth becomes established. Mow at CONTRACTOR's expense.

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3. Relime, refertilize and reseed, as directed by the ARCHITECT, all seeded areas which become eroded or otherwise disturbed; or which require mowing of weedy areas in order to establish acceptable turf.
4. Relime, refertilize and reseed, as directed by ARCHITECT, spots larger than one square foot not having uniform stand of grass practically weed free, and not containing plants in reasonable proportion to the various kinds of seed in the grass seed mixture.
5. Perform all lawn establishment work in accordance with the specifications without additional compensation.
6. Establishment period to extend until acceptance of project by ARCHITECT.

G. Cleaning:

In addition to cleaning required in Specification Section entitled, "Cleaning and Restoration for Sitework":

1. Immediately clean spills on paved and finished surface areas.
2. Remove debris and excess materials from projects site.
3. Dispose of protective barricades and warning signs at termination of lawn establishment period.

H. Field quality control:

Seed mixture:

1. ARCHITECT reserves the right to have certified seed mixtures samples and tested after delivery to the project. CONTRACTOR shall pay for testing and related costs when materials are found not to be in compliance with this specification.
2. Sampling and testing will be conducted in accordance with the New Jersey State Seed Law, Chapter 189, P.L. 1948, and with the rules and regulations for testing seeds adopted by the Association of Official Seed Analysts.

END OF SECTION

SECTION 330513 - INLET AND MANHOLE CASTINGS

PART 1 GENERAL

1.1 DESCRIPTION

- A. Description of system: Provide and install cast iron castings for manholes, inlets, drains and other structures where shown on the plans and as specified herein.

1.2 QUALITY ASSURANCE

- A. Qualifications of manufacturer: Products used in the work of this section shall be produced by manufacturers regularly engaged in the manufacturer of similar items and with a history of successful production acceptable to the ARCHITECT.
- B. Provide only manufactured products of the United States, wherever available, in accordance with the Instruction to Bidders.

1.3 SUBMITTALS

- A. Materials lists: Submit six (6) copies of a complete list of all materials and equipment proposed to be furnished and installed under this portion of the work, giving manufacturer's name, catalog number, and catalog cut for each item where applicable.
- B. Submit manufacturer's certification that products to be supplied conform to specified requirements.

1.4 PRODUCTS HANDLING

- A. Protection: Use all means necessary to protect the materials of this section before, during, and after installation and to protect the installed work and materials of all other trades.
- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the ARCHITECT and at no additional cost to the OWNER.
- C. Deliver materials in manufacturer's original packaging with all tags and labels intact and legible.
- D. Store and handle materials in such a manner as to avoid damage; store at site under cover.

PART 2 PRODUCTS

2.1 GENERAL

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- A. Proprietary products: References to specified proprietary products are used to establish minimum standards of utility and quality. Unless otherwise approved by the ARCHITECT, provide only the specified products. Design is based on the materials specified. Other materials may be considered by the ARCHITECT in accordance with the provisions of these specifications.

2.2 CASTINGS

- A. Gray iron castings shall conform to ASTM A48, Class 30B and shall be true to pattern in form and dimensions, free from pouring faults, sponginess, cracks, blowholes, and other defects in composition affecting their strength and value for the service intended. The castings shall be sandblasted or otherwise effectively cleaned of scale and sand so as to present a smooth and uniform surface.
- B. Parallel bar grates: Gray iron castings shall conform to Section 909.03 of the Standard Specifications and shall have a minimum load carrying capacity of 54,000 pounds. The load carrying capacity will be determined by the average of three tests made by applying a vertical load concentrated on a 9-inch circular steel plate, 1 inch thick, placed at the center of the grate. The grate shall be supported on one longitudinal side and two transverse sides.
- C. When the size of the casting permits, each casting shall bear the identifying mark of the manufacturer and the part of pattern number at a location at the discretion of the producer.
- D. Manhole and inlet castings shall have cast on the face, in raised letter, the logo "US-1".
- E. Cast iron frames, grates and covers shall be fitted together and match-marked before being delivered to prevent rocking of covers and grates.
- F. Castings shall be as specified on the Plans, or approved equal.
- G. Non-conforming castings shall be rejected.
- H. Manhole castings shall have cast on the face, in raised letter, the word "STORM" or "SEWER" as required.

PART 3 EXECUTION

3.1 EXISTING CONDITIONS

- A. Inspection: Prior to all work of this section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
- B. Discrepancies:

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1. In the event of discrepancy, immediately notify the ARCHITECT.
2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.2 INSTALLATION

- A. General: Install the work of this section in strict accordance with the manufacturer's recommendation as approved by the ARCHITECT.
- B. If castings are to be set in concrete or cement mortar, all anchors or bolts shall be in place and position before the concrete or mortar is placed. The casting shall not be disturbed until mortar or concrete has set.
- C. When castings are to be placed upon previously constructed masonry, the bearing surface of masonry shall be brought to line and grade and present an even bearing surface in order that the entire face or back of the casting will come in contact with the masonry. Castings shall be set in mortar beds or anchored to the masonry as indicated.
- D. Frames shall be well set in mortar, making a watertight joint, and shall be adjusted so that the rim is approximately 1/4 inch above finished grade. Cover and frame shall have a shop coat of asphalt pitch and shall have a field coat of similar paint after the frame is set in a final position.

3.3 CLEANING

- A. Clean exposed surface of all grease, dirt and other foreign materials.
- B. Touch up all marred or abraded surfaces as specified herein.

END OF SECTION

SECTION 330516 - INLETS AND MANHOLES

PART 1 GENERAL

1.1 SUMMARY

A. Work Included:

1. Brick, block, or concrete storm drainage inlets.
2. Block or precast concrete manholes for sanitary sewer system or storm drainage system.
3. Infiltration prevention inserts for Manholes.

B. Related work:

1. Section 312300.10: Site Excavation, Grading and Filling

C. References:

1. Standard Specifications:
 - a. Section 602.03.02, Inlets and Manholes.
2. American Society for Testing and Materials (ASTM):
 - a. ASTM C-361: Reinforced Concrete Low-Head Pressure Pipe.
 - b. ASTM C-443: Joints for Circular Concrete Sewer and Culvert Pipe Using Rubber Gaskets.
 - c. ASTM C-478: Precast Reinforced Concrete Manhole Sections.
 - d. ASTM C-913: Precast Concrete Water and Wastewater Structures.
 - e. ASTM C-923: Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals.
3. American Association of State Highway and Transportation Officials (AASHTO):
 - a. AASHTO M105 Standard Specification for Gray Iron Castings.
 - b. AASHTO M198 - Joints for Circular Concrete Sewer and Culvert Pipe using Flexible Watertight Gaskets.
 - c. AASHTO M199 - Standard Specification for Precast Reinforced Concrete Manhole Sections.

1.2 SUBMITTALS

- A. Submit manufacturer's product data for precast manholes.
- B. Submit manufacturer's product data for Infiltration Prevention inserts.
- C. Provide certification stating that concrete block or brick; clay or shale brick; conform to Specifications. Submit two (2) copies prior to installing materials.
- D. All deliveries of concrete shall be accompanied by delivery slips. Provide copies of all delivery slips to ARCHITECT at end of each working day.

1.3 GUARANTEE

- A. Manufacturer of infiltration prevention inserts shall provide written three year guarantee to the OWNER from the date of purchase by the CONTRACTOR. Guarantee shall be for material failure. Manufacturer shall replace failed inserts at no cost to the OWNER.

PART 2 PRODUCTS

2.1 GENERAL

- A. References to specified proprietary products are used to establish minimum standards of utility and quality.
- B. Other materials may be used if approved by the ARCHITECT.

2.2 MANHOLES AND INLETS

- A. Materials for brick or concrete block manholes and inlets shall conform to Section 602.03.02 of the Standard Specifications, except as modified by the following:
 - 1. Concrete: Provide air entrained concrete having a minimum twenty-eight (28) day compressive strength of 4,000 psi.
- B. Ladder rungs:
 - 1. Conforming to ASTM C478.
 - 2. Steps shall be twelve inches (12") wide with a non-slip surface, with the ends turned up a minimum of two inches (2"). Rungs shall be set into the wall a minimum of three inches (3") and extend six inches (6") from the manhole wall.
- C. Precast concrete manholes shall conform to ASTM C478.
- D. Precast concrete inlets shall conform to ASTM C913.

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- E. Joint construction shall be in accordance with ASTM C443. Water tightness shall be provided by either an all weather butyl material conforming to ASTM C990 and as approved by the ARCHITECT or a rubber gasket conforming to ASTM C443. Gasket for precast manhole and inlet sections shall conform to ASTM C443 or AASHTO M198.
- F. Rubber gasket pipe to structure seal for precast inlets or manholes shall conform to ASTM C923 and be cast integrally in structure wall.
- G. Non-shrink mortar for pipe to structure seal for masonry inlets and manholes shall be as approved by ARCHITECT prior to construction.

2.3 INFILTRATION PREVENTION INSERTS

- A. Inserts shall be manufactured from a high density polyethylene copolymer material that meets ASTM D-1248, Class A, Category 5, Type III.
- B. Inserts shall have a minimum impact brittleness temperature of -105°F in accordance with ASTM D746.
- C. Insert material shall have a minimum softening temperature of 254°F meeting all requirements of ASTM D 1525.
- D. Insert material shall have a minimum tensile strength of 3700 psi and an elongation factor of 800% meeting all requirements of ASTM D 638.
- E. The insert thickness shall be a uniform 1/8" (minimum).
- F. The insert shall be provided with a polypropylene ethylene valve designed to release gas pressure at approximately 1 psi, and vacuum pressure at approximately 2 psi. The valve shall be unaffected by temperatures within a range of -70°F to 350°F. Valve body shall be corrosion and wear resistant.
- G. Insert shall have a corrosion resistant nylon strap installed for easy removal and reinstallation into the manhole frame.
- H. After installation the insert shall not allow more than 5 gallons of inflow per 24 hours at four feet of water head above the frame.
- I. The insert diameter shall be based on dimensions provided to the manufacturer by the CONTRACTOR.
- J. Manhole inserts shall be provided as manufactured by Parson Environmental Products, Inc. (800-356-9023) or approved equal.

PART 3 EXECUTION

3.1 EXISTING CONDITIONS

- A. Inspection:

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1. Prior to all work of this section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
2. Verify that the work of this section may be installed in accordance with all pertinent codes and regulations, the original design, and the referenced standards.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the ARCHITECT.
2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.2 INSTALLATION

A. General:

1. Install the work of this section in strict accordance with the manufacturer's recommendations as approved by the ARCHITECT.
2. The general method of construction shall conform to Section 602 of the Standard Specifications. The manhole, inlets and flared end sections shall be constructed as shown on the Plans.

B. Manholes:

1. Manhole walls shall be constructed of precast concrete rings, brick or concrete block and all joints between bricks or blocks shall be completely filled with 1:2 cement-sand mortar. Joints shall be made to produce a smooth and uniform surface. The outside surface of each manhole shall be plastered and troweled smooth with cement-sand mortar of the same consistency as above. Manhole walls may be constructed of poured concrete, subject to approval by the ARCHITECT. Installation of rubber gaskets for precast manholes shall be in accordance with the manufacturer's recommendations.
2. The invert channels shall be smooth and semicircular in shape conforming to the inside of the adjacent sewer section. Changes in direction of flow shall be made with a smooth curve of as large a radius as the size of the manhole will permit. Changes in size and grade of the channels shall be made gradually and evenly. The invert channels shall be formed in the concrete fill above the manhole base, or shall be half tile laid in concrete, or shall be constructed by laying full section sewer pipe through the manhole and cutting out the top half after the surrounding concrete has hardened. The floor of the manhole outside the channels shall be smooth and shall slope toward the channels not less than one inch (1") per foot nor more than two inches (2") per foot.
3. Construct manholes to the lines and grades shown on the Plans.

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C. Inlets:

1. Concrete block shall be laid with broken joints. All horizontal joints, and all keyways of vertical joints shall be filled with 1:2 cement-sand mortar. All horizontal joints shall be not more than 3/8 inch wide. The outside wall shall be plastered with a minimum of 1/2 inch thickness of 1:2 cement-sand mortar, troweled to a smooth finish.
2. To provide temporary drainage at such inlets as the ARCHITECT may direct, omit one or more blocks in whichever course or courses of the structure as the ARCHITECT may determine during construction. Prior to construction of base and pavement courses at inlets where blocks are temporarily omitted, place the required blocks and complete the inlet walls.
3. Inlets shall be constructed as follows:
 - a. Inside inlet dimensions: As shown on Plan details.
 - b. Base: 4,000 psi air entrained concrete, 8 inches thick; place on a bedding of 3/4 inch size stone, 8 inches in thickness.
 - c. Walls: 6 inches thick.
 - d. The inlet walls at pipe openings shall be sealed with non-shrink mortar.
 - e. Steps: Place 12 inches on center; and firmly embedded in the inlet wall.
 - f. Grate: Set to the required finished grade elevation, and firmly bedded in 1:2 cement-sand mortar.
 - g. All construction methods shall be subject to approval of the ARCHITECT.
4. The construction of the inlets shall include all construction necessary to connect the inlets to the existing or proposed storm drainage pipe.

D. Setting castings:

1. Frames shall be well set in mortar, making a watertight joint, and shall be adjusted so that the rim is approximately 1/4 inch above finished grade. Cover and frame shall have a shop coat of asphaltic pitch and shall have a field coat of similar paint after the frame is set in final position. Steps shall be provided in the manhole as shown on the Plans.
2. If castings are to be set in concrete or cement mortar, all anchors or bolts shall be in place and position before the concrete or mortar is placed. The casting shall not be disturbed until the mortar or concrete has set.

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3. When castings are to be placed upon previously constructed masonry, the bearing surface of masonry shall be brought to line and grade and present an even bearing surface in order that the entire face or back of the casting will come in contact with the masonry. Castings shall be set in mortar beds or anchored to the masonry as indicated.

E. Infiltration Prevention Inserts

1. Install inserts in strict accordance with the manufacturer's recommendations as approved by the ARCHITECT.
2. Thoroughly clean the seating surfaces of the frames and covers with a wire brush before installing the inserts.

END OF SECTION

SECTION 334100.20 - REINFORCED CONCRETE STORM PIPE

PART 1 GENERAL

1.1 DESCRIPTION

- A. Provide reinforced concrete pipe for proposed storm drainage system.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Round reinforced concrete pipe and fittings: ASTM C-76, Class III, Wall B unless otherwise shown.
- B. Joint design, round R.C.P and fittings: ASTM C-443. Conic surface of spigot or tongue shall be designed to properly contain and seat the gasket, or gasket shall be designed so that it is properly contained and seated on conic surface of spigot or tongue.
- C. Joint Material: Flexible rubber gaskets, ASTM C-443.
- D. Joint material primer/adhesive: As provided or specified by pipe manufacturer.
- E. Lifting hoe sealant: Tapered rubber plugs as supplied by pipe manufacturer and approved by the ARCHITECT.

PART 3 EXECUTION

3.1 METHODS OF CONSTRUCTION

- A. Reference standards used herein: American Society for Testing and Materials (ASTM).
 - 1. ASTM C-76-78: Reinforced Concrete Culvert Storm Drain, and Sewer Pipe.
 - 2. ASTM C-270-73: Mortar for Unit Masonry.
 - 3. ASTM C-443-78: Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.
- B. Submittals:
 - 1. Manufacturer's literature and recommendations:
 - a. Submit manufacturer's descriptive literature for all materials to be used.
 - b. When using rubber gaskets for joint seal, submit pipe manufacturer's recommend method of gasket installation.
 - c. When using preformed butyl-rubber tape for joint seal, submit pipe manufacturer's recommendations for the following:

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- (1) Size of coil material, and number coils to be used (1 or 2) for making joints for each size of pipe.
 - (2) Maximum distance between vertical faces of pipe when in closed position.
 - d. Submit all of the above for ARCHITECT'S approval.
2. Certificates:
 - a. Submit manufacturer's certified letter stating that pipe or joint material ordered meets requirements of this Specification. Letter shall indicate compliance with appropriate ASTM or Federal Specification designations listed.
 - b. Submit two copies prior to installing materials.
- C. Product, delivery, storage and handling:
 1. Storage of materials:
 - a. Store materials to prevent physical damage.
 - b. Store pipe and fittings off ground to prevent dirt and debris from entering.
 - c. Store flexible gasket materials not cemented to pipe, and joint primer of adhesive compounds, in a cool, dry place. Keep rubber gaskets and preformed joint sealant clean, away from oil, grease, excessive heat, and out of direct rays of sun.
 2. Handling of materials:
 - a. Protect materials during transportation and installation to avoid physical damage.
 - b. Unload pipe using following methods:
 - (1) Method No. 1 - Conventional Lifting Equipment and Automatic Unloaders:
 - (a) Lifting device (such as sling, chain, steel wire, cable, rope) which connects to pipe shall enable proper and safe handling without damage to pipe.
 - (b) Lifting device which could chip or damage pipe shall be provided with padding between pipe and lifting device.
 - (c) When pipe is provided with lifting hole, lifting device shall pass through the wall and distribute weight along inside barrel of pipe.

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- (2) Method No. 2 - Skids and Windrowed Earth.
- (3) Method No. 3 - Ropes and Skids.
- (4) All other methods of unloading shall be subject to approval of the ARCHITECT.

D. Inspection:

1. Check pipe for following information which shall be clearly marked on each pipe section:
 - a. Specification designation (ASTM).
 - b. Pipe class of strength designation.
 - c. Date of manufacturer.
 - d. Name or trademark of manufacturer.
2. Inspect pipe for defects prior to placement in trench. Individual section of pipe shall be considered defective based on the following:
 - a. Fractures or cracks passing through the wall, except for a single end crack that does not exceed the depth of the joint.
 - b. Defects that indicate imperfect proportioning, mixing, and molding.
 - c. Surface defects indicating honeycombed or open texture.
 - d. Damaged or cracked ends where such damage would prevent making a satisfactory joint.
 - e. Any continuous crack having a surface width of 0.01 inches or more and extending for a length of twelve inches or more regardless of position in the wall of the pipe.
 - (1) Consider the crack 0.01 inches in width when the point of measuring gage will, without forcing, penetrate 1/16 inch at close intervals throughout the specified distance of one foot. Measure the width of the crack by means of a gage made from a leaf 0.01 inch in thickness (as in a set of standard machinist gages).

E. Installation:

1. Lay pipe only in the presence of the ARCHITECT. ARCHITECT may order removal and relaying of pipe not so laid.

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2. Fine grade trench bottom so that pipe is supported for its full length.
3. Lay pipe to lines and grades shown on the Plans. Face socket end of pipe in direction of pipe laying.
4. Do not lay pipe on unsuitable material, in wet trench, or in same trench with another pipe or utility.
5. Lower pipe into trench with ropes, machinery, or other means approved by the ARCHITECT. Use same care as when pipe was unloaded from delivery trucks. Place pipe with lifting holes (pipe larger than 36-inch round, or 29-inch x 45-inch Elliptical) so that lifting hole is at crown of pipe.
6. Types of joint material, and general procedure for applying joint material.
 - a. Rubber gasket sealant for joints:
 - (1) O-Ring Gaskets:
 - (a) Clean gasket groove and all joining surfaces of sand, mud, and other foreign matter prior to inserting gasket.
 - (b) Properly seal gasket. Insert smooth round object such as a screwdriver under gasket, move around circumference two to three times to equalize stretch in gasket.
 - (c) Lubricate gasket and socket end of pipe. Keep all joining surfaces clean.
 - (2) Flat gaskets: Shall be factory applied to pipe unless otherwise approved by the ARCHITECT.
 - (a) Clean factory applied gasket and all joining surfaces of sand, mud and other foreign matter. Repair damaged or loose gaskets.
 - (b) Apply adhesive/lubricant to gasket and socket end of pipe. Keep all joining surfaces clean.
 - b. Method of installing joint material and joining pipe shall be in strict accordance with manufacturer's printed instructions. The above joining procedures shall be considered as a general guide. Any above requirements which conflict with the manufacturer's printed instructions as approved by the ARCHITECT shall be void to the extent of such conflict.
 - c. NO MORTAR JOINTS WILL BE PERMITTED.
7. General procedure for joining pipe:

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- a. Join pipe up to twenty-four inches (24") in diameter when installed on nongranular and firm bedding, by means of a bar and wood block.
 - b. Join larger diameter pipe, or where bedding is granular material, using mechanical pipe pullers.
 - c. DO NOT USE EXCAVATING EQUIPMENT TO SHOVE PIPE SECTIONS TOGETHER.
 - d. Hold pipe securely and in popular alignment when joining.
 - e. Do not disturb previously made joints. Check completed piping to assure joints are intact. Insure backfilling is accomplished without disturbing pipe position.
 - f. Do not allow earth, stones, or other debris to enter pipe or fittings.
8. Seal lifting holes in pipe (pipe larger than 36-inch Round; or 29-inch x 45-inch Elliptical):
- a. Seal pipe lifting holes using approved rubber plugs. Position plug securely in place in the lifting hole, and mortar over using a 1:2 cement-sand mixture. Upon completion, the sealed lifting hole shall be watertight. Lifting holes that are not sealed watertight will not be accepted.
 - b. Insure placement of backfill over pipe is accomplished without disturbing lifting hole seals.
 - c. Alternate methods for sealing lifting holes will be considered by ARCHITECT. Submit written installation procedure and materials Specification for approval by ARCHITECT prior to pipe installation.
- F. Field quality control:
1. ARCHITECT will lamp all installed pipe between manholes, inlets, or other structures. Drainage lines shall meet the following standards to pass the lamping inspection.
 - a. Barrel of pipe shall have no vertical deflection, and at least seventy-five percent of barrel should be visible in the horizontal direction.
 - b. Pipe not meeting this Specification shall be re-laid and re-lamped until compliance is achieved at no additional cost to OWNER.

END OF SECTION

SECTION 340000 - CONTRACTOR'S USE OF APPENDIX AND/OR EXHIBIT DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. It shall be expressly understood that the documents and other information provided as part of the Appendix and/or Exhibits are to be considered helpful information, are not fact and have not been verified by the Owner and the Design Consultant(s).
- B. It is expressly understood and agreed that the Owner and the Design Consultant(s) assume no responsibility whatsoever in respect to the sufficiency or accuracy of the information, the records thereof or of the interpretations set forth therein or made by the Owner or the Design Consultant(s), in its use thereof other than to establish a record of the visible conditions noted at the time the documents were produced.
- C. There is no warranty or guaranty either expressed or implied, that the conditions indicated are representative of those existing throughout such areas, or any part thereof, or that unlooked-for developments may not occur, or that conditions other than or in proportions different from those indicated may be encountered.
- D. Contractors may utilize these documents at their own risk and shall be fully responsible for the results obtained from the use of these documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

3.1 SCHEDULE OF EXHIBITS

	NO.	TITLE	PAGES
A.	EX-01	Sample Owner/Contractor Contract	2
B.	EX-02	Soil and Foundation Engineering Report	29

END OF SECTION 340000

EXHIBIT-01

SAMPLE

CONTRACT FOR 2018 ROAD PROGRAM

THIS AGREEMENT, between the Township of Evesham, a municipal corporation of the State of New Jersey, having its principal offices located at 984 Tuckerton Road, Marlton, New Jersey 08053, hereinafter referred to as Owner and Lexa Concrete, LLC, having its principal place of business located at 11 Commerce Way Drive, Hammonton, New Jersey 08037, hereinafter referred to as "Contractor;"

WITNESSETH;

That for and in consideration of the sum of One Million, Six Hundred Eight-Two Thousand, Four Hundred Forty-Nine Dollars and 67/100 (\$1,682,449.67), contractor agrees to furnish to the Owner, the labor, material, equipment and services in accordance with the contract documents hereinafter set forth.

That for and in consideration of the amount payable under this agreement by the Owner, the Contractor agrees, at its own proper cost and expense, and with due skill and diligence, that it will complete the 2018 Road Program project in accordance with the contract documents and in compliance with this agreement.

Contractor agrees to receive as full compensation the amount stated herein, namely \$1,682,449.67, for said services provided to the Owner. Contractor shall be responsible for all loss or damage arising out of the furnishing of the services aforesaid.

To prevent all disputes and litigation, it is agreed by and between the parties to the Contract that the Owner shall in all cases determine the quantity of the goods delivered and paid for under this contract, and as to the interpretation of any ambiguity in or intent of the drawings and specifications.

The Contract documents shall consist of the following:

1. Notice to Bidders.
2. Specifications.
3. Contractors Proposal (as accepted).
4. Contract Agreement.
5. Contract Drawings
6. All Addenda.

The parties to this contract agree to incorporate into this contract the mandatory language of the Regulations promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq. and N.J.A.C. 17:27, as amended and supplemented from time to time and the contractor or subcontractor agrees to comply fully with the terms, provisions, and obligations of said Regulations.

AND in all respects comply with all requirements of the Labor Laws of the State of New Jersey, applicable to contracts on behalf of the Municipal Government for construction, alteration, or repair of any building or public work, including particularly, be without limitation of the foregoing, the provision that not less than the prevailing rate of daily wages in the locality where the work is performed shall be paid to mechanics, workmen and laborers employed by the contractors or subcontractors or by or in behalf of the State or any county or municipality;

Lexa Concrete, LLC shall maintain all documentation related to products, transactions or services under this contract for a period of five years from the date of final payment. Such records shall be made available to the New Jersey Office of the State Comptroller upon request."

Payment shall be made to said Contractor by orders upon the Treasurer of said Township, founded upon estimates of the Township Council as to the amount of work done or articles furnished and delivered, or both, and upon presentation by said Contractor, to the Township Treasurer of said Township an appropriate voucher setting forth, in writing, the amount of work done or goods furnished, and that the work done or articles furnished are according to this Contract, and according to law;

AND it is distinctly and mutually understood and agreed by and between the parties hereto, that in case a default is made in the completion of the Contract, in accordance with the terms and conditions hereof, such money as may be due to said Contractor, or such as would have become due had the terms and conditions of this Contract and agreement been complied with, shall be and is hereby forfeited to said Township, and said Township is free to use the same in and about the completion of said contract, and in case said Township is put to any costs and expenses over and above the contract price of the

EXHIBIT-01

Contractor, in and about the completion of the Contract, said Contractor for themselves, itself, their heirs, executors, administrators, successors and assigns, expressly agree to hold themselves, itself, their heirs, executors, administrators, successors and assigns, liable therefore, and hereby covenant and agree to make good the same to the Township. Upon Township determination that services provided by the contractor are unsatisfactory, said contract may be cancelled subject to thirty (30) days written notice being provided to the contractor;

The Contractor agrees to make payments of all proper charges for labor and materials required in the aforementioned work, and defend, indemnify and save harmless the Township of Evesham, its officers, agents and servants and each and every one of them against and from all suits and costs of every name and description, including attorney's fees and costs and from all damages to which said Township of Evesham or any of its officers, agents or servants may be put by reason of injury to the person or property of others resulting from carelessness in the performance of said work, or through the negligence of the Contractor, or through any improper or defective machinery, implements or appliances used by said Contractor in the aforesaid work or through any act or omission on the part of said Contractor, or his agent or agents. This provision applies regardless of whether insurance coverage is provided. It is also agreed and understood that the acceptance of the final payment by the Contractor shall be considered as a release in full of all claims against the Township out of, or by reason of, the work done and materials furnished under this contract; and

AND it is expressly understood and agreed that this Contract and the referenced inclusion of the bid documents represent the full understanding between the parties and any representations, whether oral or in writing, not contained herein, will not be binding on the parties hereto.

This agreement, together with the contract documents, forms the contract and they are as fully a part of this contract as if hereto attached or herein repeated.

The Owner and the Contractor, for themselves, their heirs, executors, administrators, successors or assigns, hereby agree to the full performance of the covenants herein contained.

IN WITNESS WHEREOF, they have executed this Agreement.

LEXA CONCRETE, LLC:

Alex O. Gherardi, Mg Member

Print Name & Title

ATTEST:

BY

THERESA McCULLOUGH
NOTARY PUBLIC OF NJ
My Commission Expires February 23, 2019
I.D. # 2222432

Print Name & Title (Seal)

Dated this 23rd day of October, 2018

TOWNSHIP OF EVESHAM:

[Signature]

ATTEST:

BY

Mary Lou Berch
(Seal)

Dated this 31st day of October, 2018.

EXHIBIT-02

SOIL AND FOUNDATION ENGINEERING REPORT

MUNICIPAL COMPLEX
6700 SF BUILDING ADDITION
Medford Evesboro Road & Sharp Road
Evesham Township
Burlington County, New Jersey

FOR

GUZZI ENGINEERING ASSOCIATES

418 Stokes Road
Medford, NJ 08055

October 25, 2019

UNDERWOOD ENGINEERING COMPANY
U.E. Reference No: 4604-10079-1 (WO 19-0193)

UNDERWOOD ENGINEERING COMPANY

SOIL & FOUNDATION ENGINEERING

143 Harding Ave. Bellmawr, NJ 08031

William R. Underwood, PE - President

Phone (856) 933-1818 Fax (856) 933-3121

10/25/2019

GUZZI ENGINEERING ASSOCIATES

418 Stokes Road
Medford, NJ 08055

RE: Soil and Foundation Engineering Report
Municipal Complex 6700 SF Building Addition
Medford Evesboro Road & Sharp Road
Evesham Township
Burlington County, New Jersey

U.E. Reference No: 4604-10079-1 (WO 19-0193)

Sir / Madame:

Underwood Engineering Company has been retained by Guzzi Engineering Associates, to perform a soil investigation, analysis and to make recommendations for the most suitable foundation system for the above referenced project. Presented herewith is the required information.

We appreciate the opportunity of working with you on this project. If we may be of further assistance, please do not hesitate to contact our office.

Respectfully submitted,
Underwood Engineering Company



William R. Underwood, P.E.
President



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I SITE DESCRIPTION

A. Location

The building addition site is located along the West side of Building 3 within the Evesham Municipal Utilities Authority Complex. The Evesham Municipal Utilities Authority Complex is located at the intersection of Evesboro – Medford Road & Sharp Road in Evesham Township, Burlington County, New Jersey.

B. Surface Conditions

The proposed building addition area is located along the West side of the existing one-story pre-engineered steel building (Building # 3). The area is currently occupied by a gravel parking lot and two (2), one story concrete and canvas structures. In general, the proposed building addition area is relatively flat with existing ground surface elevations ranging from approximate elevations 69.00 to 70.00.

C. Project Plans

A non-dated and non-signed, site plan showing the proposed building addition location and existing site features was provided by Guzzi Engineering Associates via email on October 17th, 2019, Entitled “Site Plan & Utility Plan”.

Existing site plans showing the existing site features were prepared by Everland, Shrouds & Associates, Inc., dated 3/2/00, Entitled “Final Major Site Plan, Lipinski Landscape, Block 14, Lots 5 & 5.03, Evesham Township, Burlington County, New Jersey”.

II PROJECT DESCRIPTION

A. Type of Structure

The project is to consist of the proposed construction of a one-story addition measuring approximately 96 feet long by 70 feet wide along the West side of the existing building # 3. The building will be used for vehicle maintenance. Framework for the proposed addition is anticipated to be pre-engineered steel with concrete foundations, concrete slab on grade construction.

B. Structural Load Data

Anticipated loading conditions for the proposed structure are as follows:

Maximum Column Loads: 25.0 kips

Maximum Horizontal Column Load: 15 kips

Maximum Wall Loads: 0.5 kips / ft.

C. Finished Floor Elevations

Project grading was not available for review as of the published date of this report. All project grading information is to be supplied to Underwood Engineering Company as it is made available so that additions, corrections or modifications to the recommendations contained herein may be made, if necessary.

The proposed finished floor elevations are assumed to approximate the existing grade elevations / existing finished floor elevations.

III FIELD INVESTIGATION & SUBSURFACE CONDITIONS

A. Field Investigation

1) Borings

The field investigation consisted of three (3) test borings advanced to depths of approximately twenty-five (25) feet below the existing ground surface elevations with standard penetration resistance per ASTM D-1586 on October 22, 2019. The findings and locations are shown in Appendices A and B to include the Boring Location Plan and Soil Boring Logs.

The site soils encountered consisted generally of the following profile:

Zone 1

Medium dense fills consisting of fine to coarse sands with little amounts of silt were encountered in test boring TB-3 directly below the existing gravel ground surface to a depth of approximately two (2) feet below the existing ground surface elevations.

Zone 2

Loose, medium dense and dense fine to coarse sands with little / some amounts of silts / silty clays and trace to little amounts of gravel were encountered in test borings TB-1 through TB-3 directly below the existing gravel ground surface and the Zone 1 materials. Test borings TB-1 through TB-3 were terminated in the medium dense and dense Zone 2 sands at depths of approximately twenty-five (25) feet below the existing ground surface elevations.

See attached Soil Boring Logs (Appendix B) for more detailed soil descriptions and profiles.

2) Water Table

The ground water table was encountered at depths of approximately four (4) and six (6) feet below the existing ground surface elevations as evidenced by direct observation and saturation of the soil samples.

It should be noted that the ground water data presented on the individual boring logs may not be representative of daily or seasonal variations in the ground water level.

IV RECOMMENDATIONS

A. Earthwork

1) Existing Soil Conditions

All existing paving, existing foundation elements, any organic materials and all deleterious materials are to be removed from the proposed building addition area.

Any existing utilities to be abandoned should be completely removed or properly capped and sealed with grout.

2) Construction Dewatering

Based on the test boring data, groundwater may / will be encountered during the earthwork activities, excavation for foundations, utilities etc. Should water be encountered, the dewatering specifications should be of a type capable of maintaining the water table a minimum of two (2) feet below the prevailing excavation bottom during the excavations as well as during backfill operations. As stated above, groundwater and/or perched water levels encountered during construction may vary from those encountered during soil boring operations due to seasonal variations or other climatic conditions. Should water be encountered during earthwork activities, foundation excavations and utility trenches,

etc., temporary dewatering may be required i.e. installation of sump pits/pumps.

3) Proofrolling & Densification

The exposed subgrades for the slab on grades and any paved areas are to be proofrolled with a vibrator compactor in the presence of the soil engineer to detect and repair any unsuitable soil conditions and to attain a uniform firm subgrade throughout. Any loose soils encountered may be densified by proofrolling and further compaction by additional passes if necessary. This is extremely important due to areas of loose soils encountered in the soil borings.

Prior to placement of structural fills, building pad area subgrades are to be densified utilizing a 15-ton equivalent vibratory compactor. A minimum of six (6) passes over the building subgrade areas is recommended.

4) Structural Fill Placement

Bring existing grade up to the desired elevation with a granular type soil that complies with the following specifications or soils which are reviewed and approved by the soil engineer and compact it to within the specifications listed under **Compaction**, unless approved by the Soils Engineer.

<u>SIEVE SIZE</u>	<u>Percent by Weight Passing Square Mesh Sieve</u>
2"	100
3/4"	70-100
#4	30-80
#50	10-35
#200	5-12

It is strongly recommended that bulk samples of material to be used as load bearing structural fill be taken and tested prior to the commencement of work so that moisture / density relationships (compaction) can be determined.

5) On Site Soils

On site granular soils, as approved by the Soil Engineer, are suitable for use, as load-bearing fill but will require strict moisture control due to the presence of fine grain material and elevated groundwater (i.e. silt and clay). If on site soils are used as structural fill, they must be placed under favorable weather conditions and may require conditioning (i.e. aerated, moisture reducing applications) such that they are dried to within optimum moisture content ranges. This is extremely important to properly compact the soils as specified herein. If inclement weather is a factor, the onsite soils may be unsuitable, and provisions should be taken to import suitable structural materials and / or the use of moisture reducing applications.

6) Backfilling & Densification of Load-Bearing Fill

Building subgrades may be brought up to desired elevation with approved on-site soils or imported structural fill in lifts no greater than twelve (12) inches loose thickness and compacted to 95% of the material's maximum dry density per ASTM D-1557 as illustrated below. Materials compacted by hand operated equipment shall be placed in lifts no greater than four (4) inches loose thickness.

7) Compaction

All backfill and fill materials should be compacted to the degree noted in the following table in accordance with ASTM D-1557 latest standard.

<u>Building Area</u>	<u>% Maximum Dry Density (ASTM D-1557)</u>
Supporting Foundations	95%
Supporting Floor Slabs	95%
Pavements	95%
Site (Non Load Bearing)	90%

8) Foundation Compaction

All exposed footing subgrades are to be compacted by two (2) passes with a jumping jack compactor immediately prior to the placement of the footing concrete.

Based on groundwater levels recorded during the test boring program and moisture sensitive soils on site, crushed stone may be required to stabilize excavations and to aid in the control of groundwater locations.

B. Building Foundation

1) Type

The proposed building addition is to be placed on a spread footing foundation system.

2) Elevation

The footings may be placed at any elevation provided the minimum depth criteria is met and the recommendations listed herein are performed.

The footing / foundation bottoms for the proposed addition must bear at the same elevations of the existing structures.

Note: If the proposed foundations fall below the existing foundations the existing wall foundations in the area of the addition must be underpinned in a phased sequence to transfer the existing building loads down to the bottom of the addition. The phased underpinning to be designed by others.

3) Minimum Depth of Foundation

All footing bottoms are to be founded at least three (3) feet beneath or away from atmospherically exposed final soil subgrade.

4) Allowable Bearing Values

The spread footing foundations may be designed for a maximum allowable bearing capacity of 3,000 Pounds per Square Foot provided that the requirements under Earthwork are adhered to strictly.

5) Settlements

Using the allowable bearing value and following the recommendations under Earthwork will keep total and differential settlements negligible.

C. Lateral Earth Pressures

The following values may be used for calculating lateral earth pressures utilizing the on-site f/m sands with l./s. silts / silty clays

Active Earth Pressure Coefficient, $K_A = 0.333$

At Rest Earth Pressure Coefficient, $K_R = 0.50$

Passive Earth Pressure Coefficient, $K_P = 3.00$

Angle of internal friction (ϕ) = 30.0°

Unit Weight of Soil, $\gamma = 120 \text{ lbs. / ft}^3$

The above values assume a level embankment.

D. Concrete Floor Slabs

Concrete floor slabs may be placed on grade provided they are underlain by a minimum of four (4) inches of porous material and all soft areas are to be removed and repaired as recommended under Earthwork.

E. Paved Areas

1) Subgrade Preparation

After the procedures as outlined under Proofrolling are completed, the subgrade should be compacted to 95% of the material's Maximum Dry Density (ASTM D-1557). Prior to the installation of the bituminous base course the subgrade is to be proofrolled with a loaded ten-wheel dump truck in the presence of the soils engineer. This is extremely important and will be the primary criteria for subgrade acceptance. Any localized weak areas are to be repaired.

2) Design Criteria

In the design of pavements, a maximum CBR value of ten (10) should be used.

3) Stone Base Course

Pavement areas are to be provided with at least a four (4) inch thick crushed stone or coarse gravel base course.

4) Reinforcing Fabric

A geotechnical reinforcing fabric (Mirafi 500X or equal) should be considered for placement under any heavy traffic areas.

V INSPECTION

It is recommended that all earthwork operations be inspected full time by a qualified representative of the Soil Engineer, especially the proofrolling operations and all footing subgrades immediately prior to placing the footing concrete. Foundation excavation evaluations should be performed to confirm that the design allowable bearing pressure is available. Footing subgrade evaluations should be performed through a combination of visual observation and hand rod probing in conjunction with comparison to the test borings. Concrete placement should be performed immediately after footing subgrade evaluations are made to prevent exposure and potential weakening of foundation subgrades.

VI QUALIFICATIONS

Our recommendations are based on the subsurface conditions as revealed by the test borings, and on the assumptions outlined in the Project Description and Site Description sections of this report.

Our recommendations are also based on the assumption that the provisions for strict field inspection will be followed as outlined.

This report does not reflect any variations, which may be encountered during construction.

We should be informed immediately of such conditions so that we may modify our conclusions and recommendations, if necessary.

Underwood Engineering Company will not be responsible for variations in subsurface soils encountered in areas other than those tested.

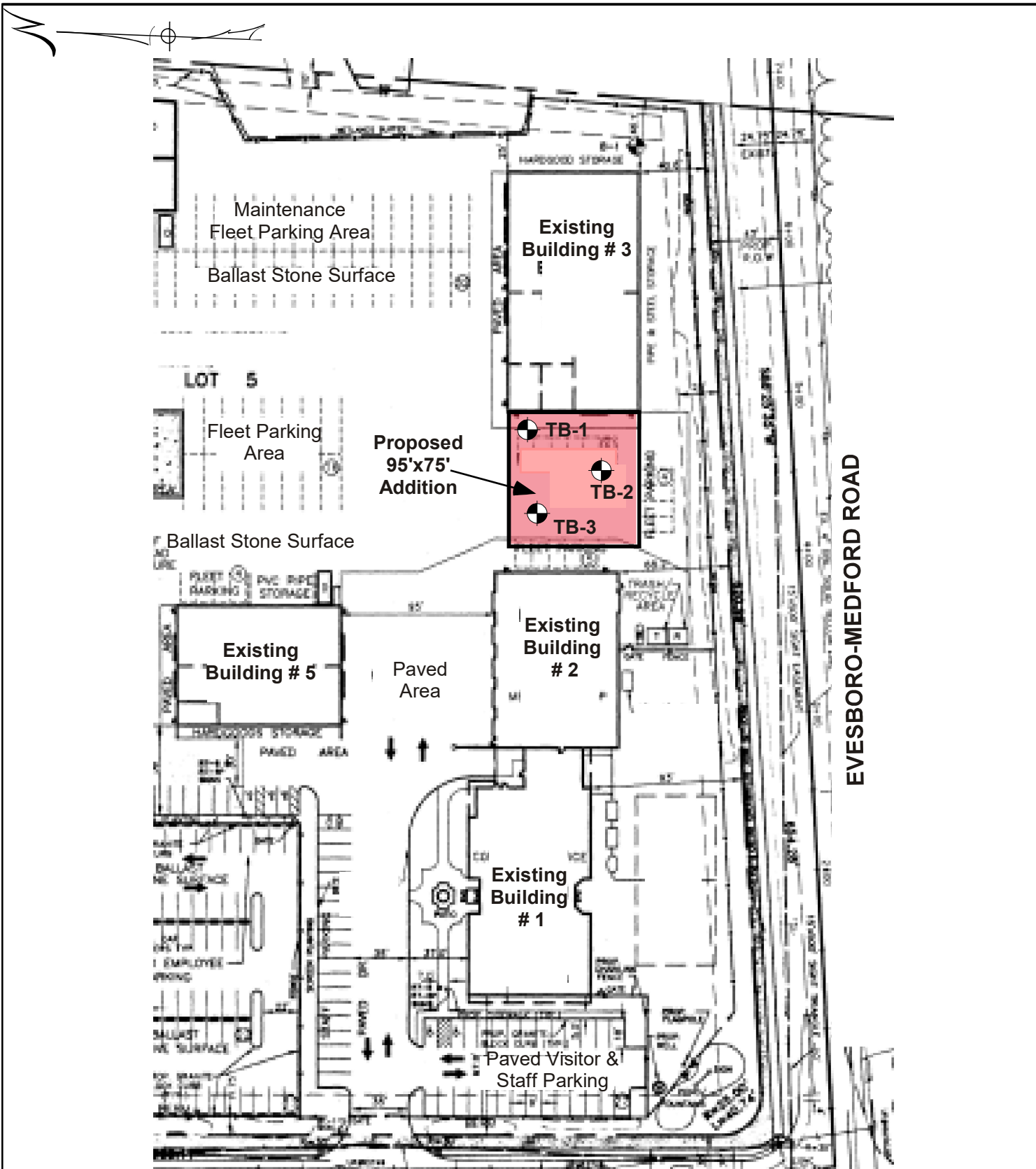
Respectfully submitted,
Underwood Engineering Company



William R. Underwood, P.E.
President



Appendix A
Boring Location Plan



Revised 11/18/19

SHARP ROAD

Test Boring Location  T.B.-

Guzzi Engineering Associates

Municipal Complex 6700 SF Building Addition
Medford Evesboro Road & Sharp Road
Evesham Township, Burlington Co., NJ

BORING LOCATION PLAN

Underwood Engineering Company

Scale:
N.T.S.

Date:
Oct. 25, 2019

UE Ref. No.:
4604-10079-1

D - 1

Appendix B
Boring Logs

CLIENT: Guzzi Engineering Associates
 PROJECT: Municipal Complex 6700 SF Addition
 100 Sharp Road
 Evesham Township, NJ

DATE: 10/22/19

BORING No.: TB-1

UNDERWOOD ENGINEERING COMPANY

143 Harding Avenue, Bellmawr, NJ 08031

Ph.# 856.933.1818 Fx.# 856.933.3121

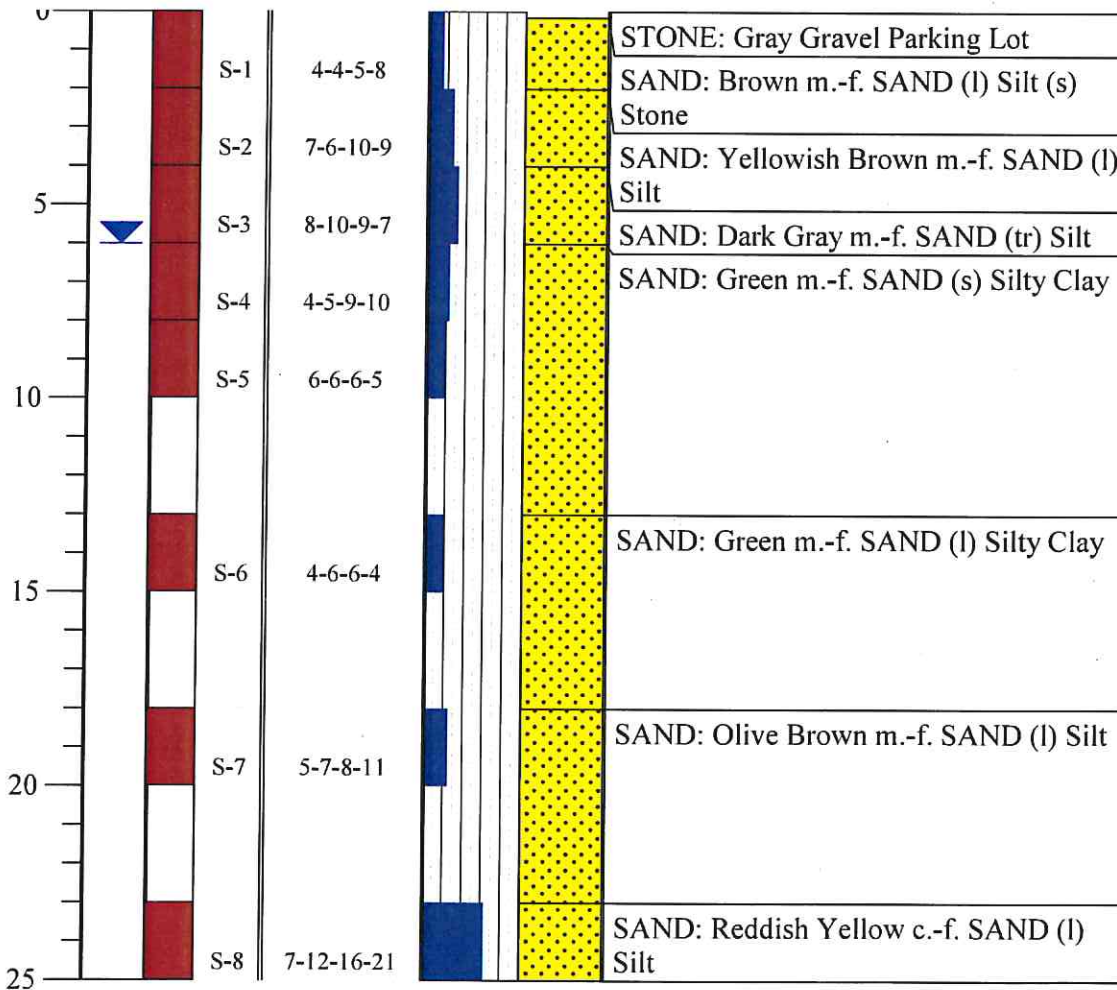
William R. Underwood, P.E., President

GROUND SURFACE ELEVATION: N/A

GROUNDWATER DATA	
DEPTH	Hours After Completion
6'	Sample Saturated with Water

METHOD OF ADVANCING BORING	DEPTH (FT.)
CONTINUOUS SPLIT SPOON SAMPLE	0' to 10'
AUGERS	10' to 23'
2" O.D. SPLIT SPOON	23' to 25'

Depth (ft)	Groundwater	Sampling Interval	Sample #	Blows	N-Values	Lithology	Soil Description*	Notes:
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*FIELD CLASSIFICATION ONLY. SOIL CLASSIFICATION FOR PARTICULAR USES SHOULD BE ASCERTAINED BY LABORATORY TESTS.

CLIENT: Guzzi Engineering Associates
 PROJECT: Municipal Complex 6700 SF Addition
 100 Sharp Road
 Evesham Township, NJ

DATE: 10/22/19

BORING No.: TB-2

UNDERWOOD ENGINEERING COMPANY

143 Harding Avenue, Bellmawr, NJ 08031

Ph.# 856.933.1818 Fx.# 856.933.3121

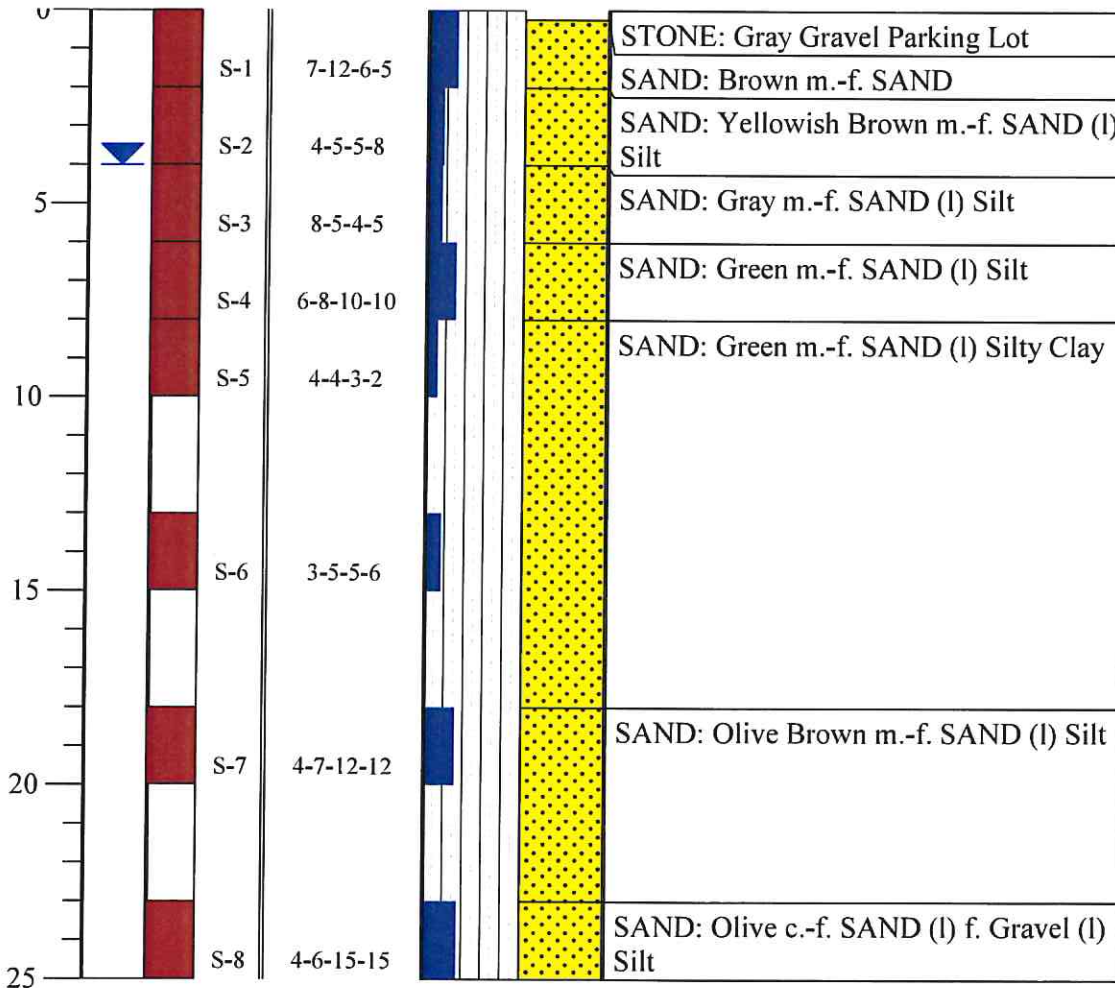
William R. Underwood, P.E., President

GROUND SURFACE ELEVATION: N/A

GROUNDWATER DATA	
DEPTH	Hours After Completion
4'	☞ Sample Saturated with Water

METHOD OF ADVANCING BORING	DEPTH (FT.)
CONTINUOUS SPLIT SPOON SAMPLE	0' to 10'
AUGERS	10' to 23'
2" O.D. SPLIT SPOON	23' to 25'

Depth (ft)	Groundwater	Sampling Interval	Sample #	Blows	N-Values	Lithology	Soil Description*	Notes:
------------	-------------	-------------------	----------	-------	----------	-----------	-------------------	--------



*FIELD CLASSIFICATION ONLY. SOIL CLASSIFICATION FOR PARTICULAR USES SHOULD BE ASCERTAINED BY LABORATORY TESTS.

CLIENT: Guzzi Engineering Associates
 PROJECT: Municipal Complex 6700 SF Addition
 100 Sharp Road
 Evesham Township, NJ
 DATE: 10/22/19
 BORING No.: TB-3

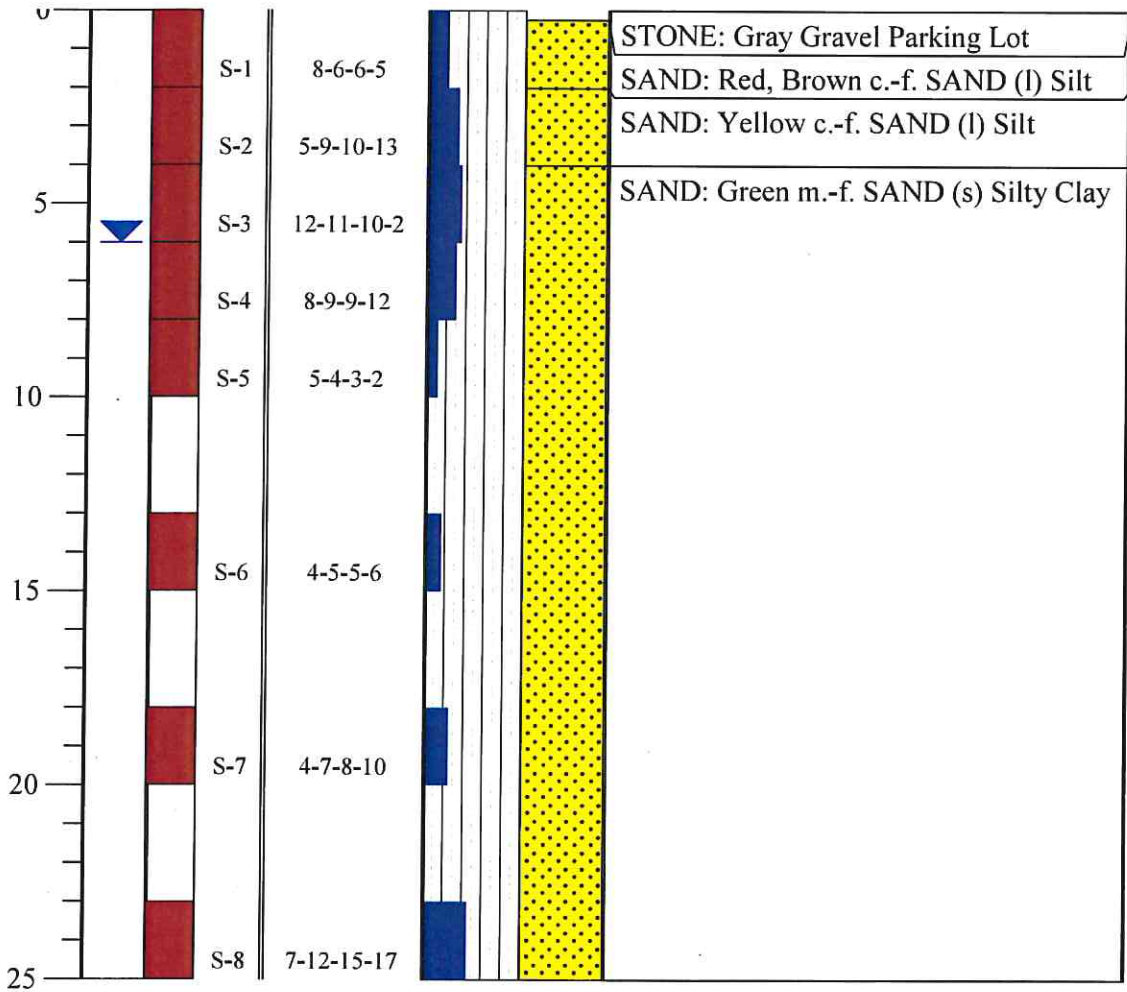
UNDERWOOD ENGINEERING COMPANY	
143 Harding Avenue, Bellmawr, NJ 08031	
Ph.# 856.933.1818 Fx.# 856.933.3121	
William R. Underwood, P.E., President	

GROUND SURFACE ELEVATION: N/A

GROUNDWATER DATA	
DEPTH	Hours After Completion
6'	# Sample Saturated with Water

METHOD OF ADVANCING BORING	DEPTH (FT.)
CONTINUOUS SPLIT SPOON SAMPLE	0' to 10'
AUGERS	10' to 23'
2" O.D. SPLIT SPOON	23' to 25'

Depth (ft)	Groundwater	Sampling Interval	Sample #	Blows	N-Values	Lithology	Soil Description*	Notes:



*FIELD CLASSIFICATION ONLY. SOIL CLASSIFICATION FOR PARTICULAR USES SHOULD BE ASCERTAINED BY LABORATORY TESTS.

Appendix C
Mechanical Sieve (Gradation) Analysis Results



Material Test Report

Report No: MAT:19-0848-S01
 Issue No: 1

Client: Guzzi Engineering Associates CC:

Project: Evesham Township Maintenance Facility
 Medford Evesboro Road, Evesham, NJ

This report is based on the visual and physical inspection described below. The inspectors, laboratory tests and subsequent results are based on a representative sample of the overall project. Inspection by Underwood Engineering, Inc. in no way releases the contractor or sub-contractor of full responsibility of meeting contract documents, plans, specifications, shop drawings and standard in the industry. No other warranty is expressed or implied. No conclusions should be drawn from this report other than those specifically stated.



Submitted By:
 Date of Issue:

Bill Underwood
 11/7/2019

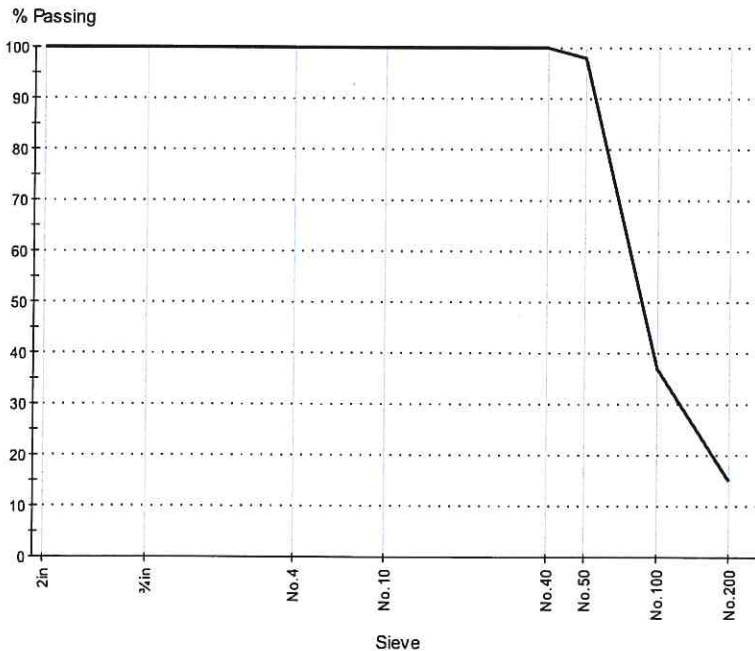
Sample Details

Sample ID 19-0848-S01
 Date Sampled 10/25/2019
 Source Test Boring
 Specification I-5 plus No. 100 Sieve
 Location B1 @ 13' to 15'

Other Test Results

Description	Method	Result	Limits
Water Content (%)	ASTM D 2216	25.8	
Method		B	
Tested By		Cait Brevik	
Date Tested		10/25/2019	

Particle Size Distribution



Method: AASHTO T 27, AASHTO T 11

Drying by: Oven

Date Tested: 10/25/2019

Tested By: Cait Brevik

Sieve Size	% Passing	Limits
2in	100	
3/4in	100	
No. 4	100	
No. 10	100	
No. 40	100	
No. 50	98	
No. 100	37	
No. 200	15	

Comments

Greenish Brown m.f. SAND (I) Silt & Clay





Material Test Report

Report No: MAT:19-0848-S02
Issue No: 1

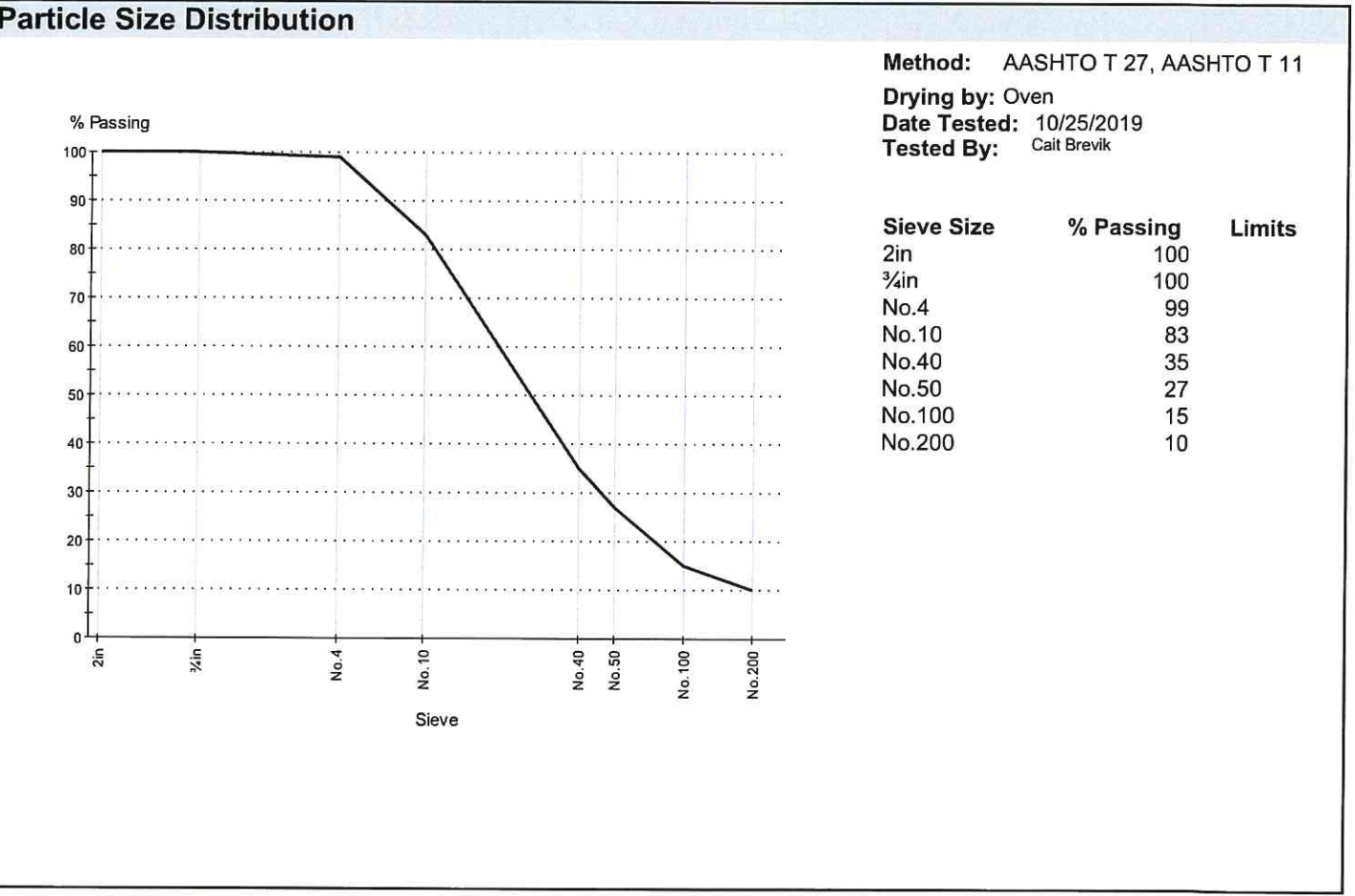
Client: Guzzi Engineering Associates **CC:**
Project: Evesham Township Maintenance Facility
 Medford Evesboro Road, Evesham, NJ

This report is based on the visual and physical inspection described below. The inspections, laboratory tests and subsequent results are based on a representative sample of the overall project. Inspection by Underwood Engineering, Inc. in no way releases the contractor or sub-contractor of full responsibility of meeting contract documents, plans, specifications, shop drawings and standard in the industry. No other warranty is expressed or implied. No conclusions should be drawn from this report other than those specifically stated.

Submitted By: Bill Underwood
Date of Issue: 11/7/2019

Sample Details		Other Test Results			
Sample ID	19-0848-S02	Description	Method	Result	Limits
Date Sampled	10/25/2019	Water Content (%)	ASTM D 2216	10.6	
Source	Test Boring	Method		B	
Specification	I-5 plus No. 100 Sieve	Tested By		Cait Brevik	
Location	B2 @ 23' to 25'	Date Tested		10/25/2019	



Comments
 Greenish Brown & Reddish Yellow c.f. SAND (l) f. Gravel (tr) Silt & Clay



Underwood Engineering, Inc.
 143 Harding Avenue
 Bellmawr, NJ 08031
 856-933-1818 Phone
 856-933-3121 Fax

Material Test Report

Report No: MAT:19-0848-S03
Issue No: 1

Client: Guzzi Engineering Associates **CC:**

Project: Evesham Township Maintenance Facility
 Medford Evesboro Road, Evesham, NJ

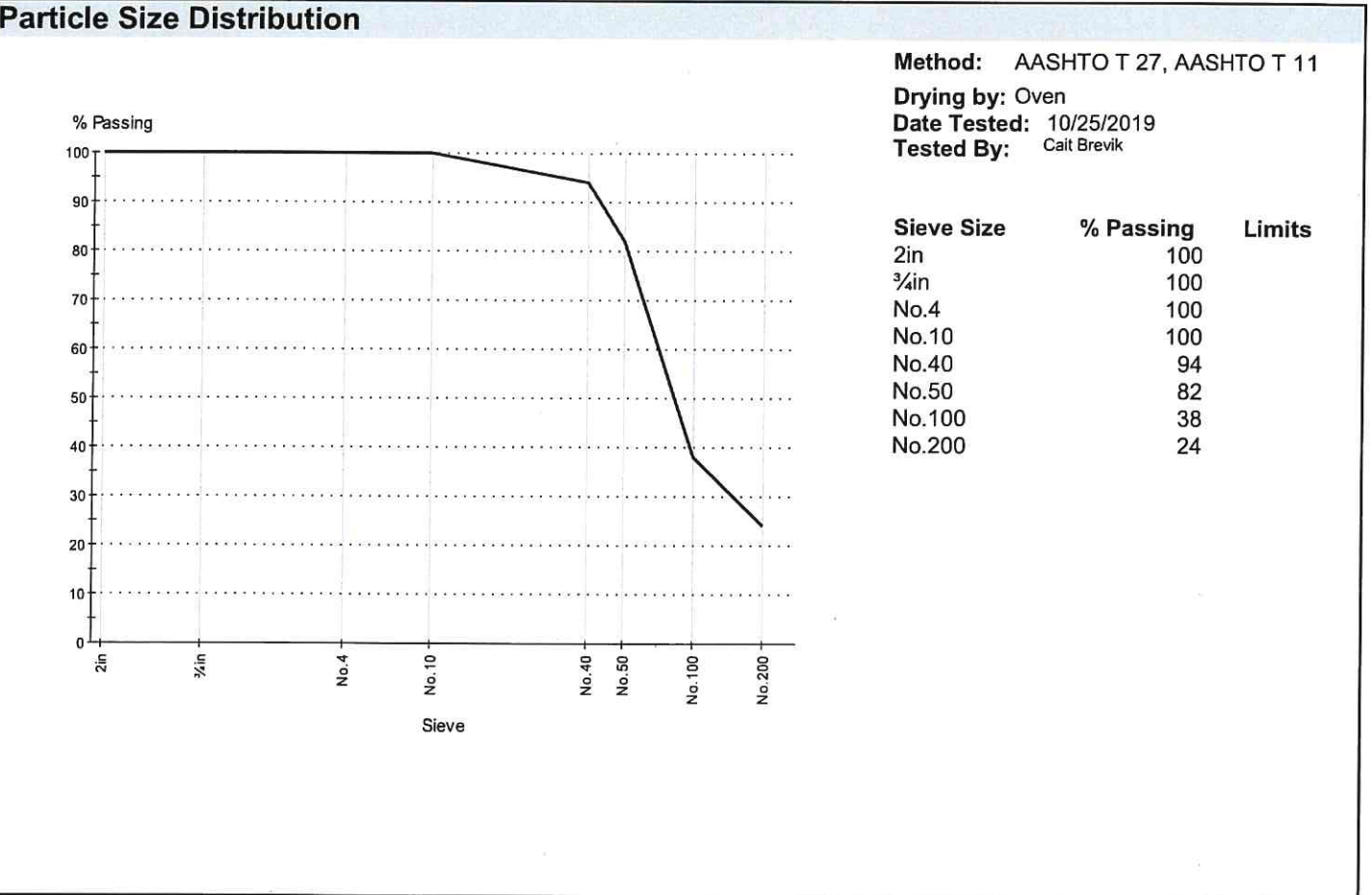
This report is based on the visual and physical inspection described below. The inspections, laboratory tests and subsequent results are based on a representative sample of the overall project. Inspection by Underwood Engineering, Inc. in no way releases the contractor or sub-contractor of full responsibility of meeting contract documents, plans, specifications, shop drawings and standard in the industry. No other warranty is expressed or implied. No conclusions should be drawn from this report other than those specifically stated.


 Submitted By:
 Date of Issue:



Bill Underwood
 11/7/2019

Sample Details		Other Test Results			
Sample ID	19-0848-S03	Description	Method	Result	Limits
Date Sampled	10/25/2019	Water Content (%)	ASTM D 2216	13.3	
Source	Test Boring	Method		B	
Specification	I-5 plus No. 100 Sieve	Tested By		Cait Brevik	
Location	B3 @ 4' to 6'	Date Tested		10/25/2019	



Comments

Dark Green c.f. SAND (s) Silt & Clay

Appendix D
General Soil Terms

General Soil Terms

Particle Sizes		Classifications
Boulders	Greater than 2 inches (305mm)	The major soil constituent is the principal noun, i.e. clay, silt, sand, gravel. The second major soil constituent and other minor constituents are reported as follows:
Cobbles	3 inches (76.233) to 12 inches (305mm)	
Gravel-coarse	3/4 inches (19.05mm) to 3 inches (76.2mm)	
Gravel-fine	No. 4- 3/16 inches (4 75mm) to 3/4 inches (19.05mm)	Second Major Constituent-Minor Constituents (Percentage by weight)
Sand-coarse	No. 10 (2.00mm) to No. 4 (4 75mm)	
Sand-medium	No. 40 (0.425mm) to No. 10 (2.00.)	
Sand-fine	No. 200 (0.075mm) to No. 40 (0.425mm)	Trace – 1 to 12% Trace – 1 to 12% Adjective – 12 to 35% Little – 12 to 23 (clayey, silty, etc.)
Silt	0.005mm to 0.074mm	
Clay	Less than 0.005mm	
		Some – 23 to 33% And – Over 35%

Cohesive Soils

If clay content is sufficient so that clay dominates soil properties, clay becomes the principal noun with other major soil constituent as modifier: i.e. silty clay. Other minor soil constituents may be included in accordance with the classification breakdown for cohesionless soils: i.e. silty clay, trace of sand, little gravel

Unconfined Compressive Strength (psf)

Consistency		Approximate Range of (N)
Very Soft	Below 500	0-2
Soft	500-1000	3-4
Medium	1000-2000	5-8
Stiff	2000-4000	9-15
Very Stiff	4000-8000	16-30
Hard	8000-16000	31-50
Very Hard	Over 16000	Over 50

Consistency of cohesive soils is based upon an evaluation of the observed resistance to deformation under load and not upon Standard Penetration Resistance (N)

Cohesionless Soils

Density Classification	Relative Density	Approximate Range of (N)
Very Loose	0-15	0-4
Loose	16-35	5-10
Medium Compact	36-65	11-30
Compact	66-85	31-50
Very Compact	86-100	Over 50

Relative Density of Cohesionless Soils is based upon the evaluation of the Standard Penetration Resistance (N), modified as required for depth effects, sampling effects, etc.

Standard Penetration Test (ASTM D 1586) – A 2.0" outside-diameter split barrel sampler is driven into undisturbed soil by means of a 140-pound weight falling freely through a vertical distance of 30 inches. The sampler is normally driven three successive 6-inch increments. The total number of blows required for the final 12 inches of penetration is the Standard Penetration Resistance (N).

Appendix E
Important Information about Your Geotechnical Engineering Report-ASFE

GEOTECHNICAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES, PERSONS, AND PROJECTS

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared solely to the client. No one except you should rely on your geotechnical engineering report without first conferring with the GEOTECHNICAL engineer who prepared it. And no one—not even you—should apply the report for any purpose or project except the one originally contemplated.

A GEOTECHNICAL ENGINEERING REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and the other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- *not prepared for you,
- *not prepared for your project,
- *not prepared for the specific site explored, or
- *completed before important project changes were made

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- *the function of the proposed structure, as when it changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse
- *elevation, configuration, location, orientation, or weight off the proposed structure,
- *composition of the design team, or
- *project ownership

As a general rule, always inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.

SUBSURFACE CONDITIONS CAN CHANGE

A geotechnical engineering report is based on conditions that existed at the time the study was performed. Do not rely on a geotechnical engineering report whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. Always contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

MOST GEOTECHNICAL FINDINGS ARE PROFESSIONAL OPINIONS

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A REPORT'S RECOMMENDATIONS ARE NOT FINAL

Do not over rely on the construction recommendations included in your report. Those recommendations are not final, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual conditions revealed during construction. The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.

A GEOTECHNICAL ENGINEERING REPORT IS SUBJECT TO MISINTERPRETATION

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

DO NOT REDRAW THE ENGINEER'S LOGS

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should never be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, but recognize that separating logs from the report can elevate risk.

GIVE CONTRACTORS A COMPLETE REPORT AND GUIDANCE

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, but preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer.

A prebid conference can also be valuable. Be sure contractors have sufficient time to perform additional studies. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

READ RESPONSIBILITY PROVISIONS CLOSELY

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce such risks, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled “limitations”, many of these provisions indicate where geotechnical engineers’ responsibilities begin and end, to help others recognize their own responsibilities and risks. Read these provisions closely. Ask questions. Your geotechnical engineer should respond fully and frankly.

GEOENVIRONMENTAL CONCERNS ARE NOT COVERED

The equipment, techniques and personnel used to perform a geoenvironmental study differ significantly from those used to perform a geotechnical study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Unanticipated environmental problems have led to numerous project failures. If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. Do not rely on an environmental report prepared for someone else.