



STORE # 12326

SPECIFICATIONS

WASHINGTON & ALLEN  
AVENUES  
PORTLAND, ME

DATE MARCH 26, 2009

FISCAL 2007

**OWNER**

The Richmond Company  
23 Concord Street  
Wilmington, MA 01887  
(978) 988-3900

**ARCHITECT**

Mr. Steve Moeser  
Moeser & Associates  
Harvard, MA 01451  
Mr. Steve Moeser  
(978) 456-6905



**WALGREEN SPECIFICATIONS  
FISCAL 2007  
TABLE OF CONTENTS  
PORTLAND, ME**

**SECTION            TITLE**

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION –AIA A201 - 1997

LIST OF DRAWINGS

SOILS REPORT BY: S. W. COLE Engineering, Inc. Dated 2/06/09

WALGREENS GENERIC PUNCH LIST

01010	SUMMARY OF WORK
01400	QUALITY CONTROL TESTING
01500	TEMPORARY FACILITIES
01550	AS-BUILT DOCUMENTS
02060	BUILDING DEMOLITION
02190	SITework/EXCAVATION
02500	PAVING & SURFACING
02600	SITE MECHANICAL UTILITIES
02830	CHAIN LINK FENCE
02900	LANDSCAPING/IMPROVEMENTS
03310	CONCRETE
04200	MASONRY
04820	REINFORCED UNIT MASONRY ASSEMBLIES
05120	STRUCTURAL METAL FRAMING
05250	METAL JOISTS/METAL DECKING
05421	ENGINEERED LIGHT GAGE METAL TRUSS SYSTEM
06100	CARPENTRY
07200	INSULATION
07410	METAL SIDING, SOFFITS AND TRIM
07500	MEMBRANE ROOFING
07530	FLEXIBLE SHEET ROOFING

07600	FLASHING, SHEET METAL, SPECIALTIES AND ACCESSORIES
07610	METAL STANDING SEAM ROOFING
07900	JOINT SEALERS
08100	METAL DOORS AND FRAMES
08200	WOOD DOORS
08300	SPECIAL DOORS
08450	ALUMINUM STOREFRONTS & AUTOMATIC ENTRANCES
08700	FINISH HARDWARE
08800	GLASS AND GLAZING
09250	GYPSUM DRYWALL
09300	CERAMIC TILE
09510	ACOUSTIC CEILINGS
09650	RESILIENT FLOORING
09680	CARPET
09910	PAINTING AND VINYL WALL COVERING
09985	SPECIAL WALL SURFACES
10190	TOILET PARTITIONS AND ACCESSORIES
10522	FIRE PROTECTION SPECIALTIES
12484	FLOOR MATS AND FRAMES
15050	BASIC MECHANICAL MATERIALS AND METHODS
15250	MECHANICAL INSULATION
15300	FIRE PROTECTION
15400	PLUMBING
15500	HEATING, VENTILATING, AND AIR CONDITIONING
15650	REFRIGERATION
15880	AIR DISTRIBUTION
15950	INSTRUMENTATION AND CONTROLS FOR HVAC
15990	TESTING, ADJUSTING, AND BALANCING
16050	BASIC ELECTRICAL MATERIALS AND METHODS
16400	SERVICE AND DISTRIBUTION
16500	LIGHTING
16600	SPECIAL SYSTEMS
16720	FIRE ALARM SYSTEM



# AIA<sup>®</sup> Document A201<sup>™</sup> – 1997

## *General Conditions of the Contract for Construction*

for the following PROJECT:  
*(Name and location or address)*

THE OWNER:  
*(Name and address)*

THE ARCHITECT:  
*(Name and address)*

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

This document has been approved and endorsed by The Associated General Contractors of America

### TABLE OF ARTICLES

- 1 GENERAL PROVISIONS
- 2 OWNER
- 3 CONTRACTOR
- 4 ADMINISTRATION OF THE CONTRACT
- 5 SUBCONTRACTORS
- 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
- 7 CHANGES IN THE WORK
- 8 TIME
- 9 PAYMENTS AND COMPLETION
- 10 PROTECTION OF PERSONS AND PROPERTY
- 11 INSURANCE AND BONDS
- 12 UNCOVERING AND CORRECTION OF WORK
- 13 MISCELLANEOUS PROVISIONS
- 14 TERMINATION OR SUSPENSION OF THE CONTRACT

## INDEX

(Numbers and Topics in Bold are Section Headings)

### Acceptance of Nonconforming Work

9.6.6, 9.9.3, **12.3**

Acceptance of Work

9.6.6, 9.8.2, 9.9.3, 9.10.1, 9.10.3, **12.3**

### Access to Work

**3.16**, 6.2.1, 12.1

Accident Prevention

4.2.3, 10

Acts and Omissions

3.2, 3.3.2, 3.12.8, 3.18, 4.2.3, 4.3.8, 4.4.1, 8.3.1, 9.5.1, 10.2.5, 13.4.2, 13.7, 14.1

Addenda

1.1.1, 3.11

Additional Costs, Claims for

4.3.4, 4.3.5, 4.3.6, 6.1.1, 10.3

Additional Inspections and Testing

9.8.3, 12.2.1, 13.5

Additional Time, Claims for

4.3.4, 4.3.7, 8.3.2

## ADMINISTRATION OF THE CONTRACT

3.1.3, **4**, 9.4, 9.5

Advertisement or Invitation to Bid

1.1.1

Aesthetic Effect

4.2.13, 4.5.1

### Allowances

**3.8**

All-risk Insurance

11.4.1.1

### Applications for Payment

4.2.5, 7.3.8, 9.2, **9.3**, 9.4, 9.5.1, 9.6.3, 9.7.1, 9.8.5, 9.10, 11.1.3, 14.2.4, 14.4.3

Approvals

2.4, 3.1.3, 3.5, 3.10.2, 3.12, 4.2.7, 9.3.2, 13.4.2, 13.5

### Arbitration

4.4, 4.5.1, 4.5.2, **4.6**, 8.3.1, 9.7.1, 11.4.9, 11.4.10

### Architect

**4.1**

Architect, Definition of

4.1.1

Architect, Extent of Authority

2.4, 3.12.7, 4.2, 4.3.6, 4.4, 5.2, 6.3, 7.1.2, 7.3.6, 7.4, 9.2, 9.3.1, 9.4, 9.5, 9.8.3, 9.10.1, 9.10.3, 12.1, 12.2.1, 13.5.1, 13.5.2, 14.2.2, 14.2.4

Architect, Limitations of Authority and Responsibility

2.1.1, 3.3.3, 3.12.4, 3.12.8, 3.12.10, 4.1.2, 4.2.1, 4.2.2, 4.2.3, 4.2.6, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 4.4, 5.2.1, 7.4, 9.4.2, 9.6.4

Architect's Additional Services and Expenses

2.4, 11.4.1.1, 12.2.1, 13.5.2, 13.5.3, 14.2.4

### Architect's Administration of the Contract

3.1.3, **4.2**, 4.3.4, 4.4, 9.4, 9.5

Architect's Approvals

2.4, 3.1.3, 3.5.1, 3.10.2, 4.2.7

Architect's Authority to Reject Work

3.5.1, 4.2.6, 12.1.2, 12.2.1

Architect's Copyright

1.6

Architect's Decisions

4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 4.3.4, 4.4.1, 4.4.5, 4.4.6, 4.5, 6.3, 7.3.6, 7.3.8, 8.1.3, 8.3.1, 9.2, 9.4, 9.5.1, 9.8.4, 9.9.1, 13.5.2, 14.2.2, 14.2.4

Architect's Inspections

4.2.2, 4.2.9, 4.3.4, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 13.5

Architect's Instructions

3.2.3, 3.3.1, 4.2.6, 4.2.7, 4.2.8, 7.4.1, 12.1, 13.5.2

Architect's Interpretations

4.2.11, 4.2.12, 4.3.6

Architect's Project Representative

4.2.10

Architect's Relationship with Contractor

1.1.2, 1.6, 3.1.3, 3.2.1, 3.2.2, 3.2.3, 3.3.1, 3.4.2, 3.5.1, 3.7.3, 3.10, 3.11, 3.12, 3.16, 3.18, 4.1.2, 4.1.3, 4.2, 4.3.4, 4.4.1, 4.4.7, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 11.4.7, 12, 13.4.2, 13.5

Architect's Relationship with Subcontractors

1.1.2, 4.2.3, 4.2.4, 4.2.6, 9.6.3, 9.6.4, 11.4.7

Architect's Representations

9.4.2, 9.5.1, 9.10.1

Architect's Site Visits

4.2.2, 4.2.9, 4.3.4, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.5

Asbestos

10.3.1

Attorneys' Fees

3.18.1, 9.10.2, 10.3.3

Award of Separate Contracts

6.1.1, 6.1.2

**Award of Subcontracts and Other Contracts for Portions of the Work**

**5.2**

## Basic Definitions

**1.1**

Bidding Requirements

1.1.1, 1.1.7, 5.2.1, 11.5.1

### Boiler and Machinery Insurance

11.4.2

Bonds, Lien

9.10.2

Bonds, Performance, and Payment

7.3.6.4, 9.6.7, 9.10.3, 11.4.9, 11.5

Building Permit

3.7.1

## Capitalization

### 1.3

Certificate of Substantial Completion  
9.8.3, 9.8.4, 9.8.5

### Certificates for Payment

4.2.5, 4.2.9, 9.3.3, 9.4, 9.5, 9.6.1, 9.6.6, 9.7.1, 9.10.1,  
9.10.3, 13.7, 14.1.1.3, 14.2.4

Certificates of Inspection, Testing or Approval  
13.5.4

Certificates of Insurance  
9.10.2, 11.1.3

### Change Orders

1.1.1, 2.4.1, 3.4.2, 3.8.2.3, 3.11.1, 3.12.8, 4.2.8, 4.3.4,  
4.3.9, 5.2.3, 7.1, 7.2, 7.3, 8.3.1, 9.3.1.1, 9.10.3,  
11.4.1.2, 11.4.4, 11.4.9, 12.1.2

Change Orders, Definition of  
7.2.1

### CHANGES IN THE WORK

3.11, 4.2.8, 7, 8.3.1, 9.3.1.1, 11.4.9

Claim, Definition of

### 4.3.1

### Claims and Disputes

3.2.3, 4.3, 4.4, 4.5, 4.6, 6.1.1, 6.3, 7.3.8, 9.3.3, 9.10.4,  
10.3.3

### Claims and Timely Assertion of Claims

### 4.6.5

### Claims for Additional Cost

3.2.3, 4.3.4, 4.3.5, 4.3.6, 6.1.1, 7.3.8, 10.3.2

### Claims for Additional Time

3.2.3, 4.3.4, 4.3.7, 6.1.1, 8.3.2, 10.3.2

### Claims for Concealed or Unknown Conditions

### 4.3.4

Claims for Damages

3.2.3, 3.18, 4.3.10, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3,  
11.1.1, 11.4.5, 11.4.7, 14.1.3, 14.2.4

Claims Subject to Arbitration

4.4.1, 4.5.1, 4.6

### Cleaning Up

### 3.15, 6.3

### Commencement of Statutory Limitation Period

### 13.7

Commencement of the Work, Conditions Relating to  
2.2.1, 3.2.1, 3.4.1, 3.7.1, 3.10.1, 3.12.6, 4.3.5, 5.2.1,  
5.2.3, 6.2.2, 8.1.2, 8.2.2, 8.3.1, 11.1, 11.4.1, 11.4.6,  
11.5.1

Commencement of the Work, Definition of  
8.1.2

### Communications Facilitating Contract

### Administration

3.9.1, 4.2.4

Completion, Conditions Relating to

1.6.1, 3.4.1, 3.11, 3.15, 4.2.2, 4.2.9, 8.2, 9.4.2, 9.8,  
9.9.1, 9.10, 12.2, 13.7, 14.1.2

### COMPLETION, PAYMENTS AND

### 9

Completion, Substantial

4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3,  
12.2, 13.7

Compliance with Laws

1.6.1, 3.2.2, 3.6, 3.7, 3.12.10, 3.13, 4.1.1, 4.4.8, 4.6.4,  
4.6.6, 9.6.4, 10.2.2, 11.1, 11.4, 13.1, 13.4, 13.5.1,  
13.5.2, 13.6, 14.1.1, 14.2.1.3

Concealed or Unknown Conditions

4.3.4, 8.3.1, 10.3

Conditions of the Contract

1.1.1, 1.1.7, 6.1.1, 6.1.4

Consent, Written

1.6, 3.4.2, 3.12.8, 3.14.2, 4.1.2, 4.3.4, 4.6.4, 9.3.2,  
9.8.5, 9.9.1, 9.10.2, 9.10.3, 11.4.1, 13.2, 13.4.2

### CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

1.1.4, 6

Construction Change Directive, Definition of  
7.3.1

### Construction Change Directives

1.1.1, 3.12.8, 4.2.8, 4.3.9, 7.1, 7.3, 9.3.1.1

Construction Schedules, Contractor's

3.10, 3.12.1, 3.12.2, 4.3.7.2, 6.1.3

### Contingent Assignment of Subcontracts

5.4, 14.2.2.2

### Continuing Contract Performance

### 4.3.3

Contract, Definition of

1.1.2

### CONTRACT, TERMINATION OR SUSPENSION OF THE

5.4.1.1, 11.4.9, 14

Contract Administration

3.1.3, 4, 9.4, 9.5

Contract Award and Execution, Conditions Relating  
to

3.7.1, 3.10, 5.2, 6.1, 11.1.3, 11.4.6, 11.5.1

### Contract Documents, The

### 1.1, 1.2

Contract Documents, Copies Furnished and Use of  
1.6, 2.2.5, 5.3

Contract Documents, Definition of

1.1.1

### Contract Sum

3.8, 4.3.4, 4.3.5, 4.4.5, 5.2.3, 7.2, 7.3, 7.4, 9.1, 9.4.2,  
9.5.1.4, 9.6.7, 9.7, 10.3.2, 11.4.1, 14.2.4, 14.3.2

Contract Sum, Definition of

9.1

Contract Time

4.3.4, 4.3.7, 4.4.5, 5.2.3, 7.2.1.3, 7.3, 7.4, 8.1.1, 8.2,  
8.3.1, 9.5.1, 9.7, 10.3.2, 12.1.1, 14.3.2

Contract Time, Definition of

8.1.1

### CONTRACTOR

### 3

Contractor, Definition of  
3.1, 6.1.2

**Contractor's Construction Schedules**  
3.10, 3.12.1, 3.12.2, 4.3.7.2, 6.1.3

Contractor's Employees  
3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3, 11.1.1, 11.4.7, 14.1, 14.2.1.1.

**Contractor's Liability Insurance**  
11.1

Contractor's Relationship with Separate Contractors and Owner's Forces  
3.12.5, 3.14.2, 4.2.4, 6, 11.4.7, 12.1.2, 12.2.4

Contractor's Relationship with Subcontractors  
1.2.2, 3.3.2, 3.18.1, 3.18.2, 5, 9.6.2, 9.6.7, 9.10.2, 11.4.1.2, 11.4.7, 11.4.8

Contractor's Relationship with the Architect  
1.1.2, 1.6, 3.1.3, 3.2.1, 3.2.2, 3.2.3, 3.3.1, 3.4.2, 3.5.1, 3.7.3, 3.10, 3.11, 3.12, 3.16, 3.18, 4.1.2, 4.1.3, 4.2, 4.3.4, 4.4.1, 4.4.7, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 11.4.7, 12, 13.4.2, 13.5

Contractor's Representations  
1.5.2, 3.5.1, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.8.2

Contractor's Responsibility for Those Performing the Work  
3.3.2, 3.18, 4.3.8, 5.3.1, 6.1.3, 6.2, 6.3, 9.5.1, 10

Contractor's Review of Contract Documents  
1.5.2, 3.2, 3.7.3

Contractor's Right to Stop the Work  
9.7

Contractor's Right to Terminate the Contract  
4.3.10, 14.1

Contractor's Submittals  
3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 7.3.6, 9.2, 9.3, 9.8.2, 9.8.3, 9.9.1, 9.10.2, 9.10.3, 11.1.3, 11.5.2

Contractor's Superintendent  
3.9, 10.2.6

Contractor's Supervision and Construction Procedures  
1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 4.3.3, 6.1.3, 6.2.4, 7.1.3, 7.3.4, 7.3.6, 8.2, 10, 12, 14

Contractual Liability Insurance  
11.1.1.8, 11.2, 11.3

Coordination and Correlation  
1.2, 1.5.2, 3.3.1, 3.10, 3.12.6, 6.1.3, 6.2.1

Copies Furnished of Drawings and Specifications  
1.6, 2.2.5, 3.11

Copyrights  
1.6, 3.17

Correction of Work  
2.3, 2.4, 3.7.4, 4.2.1, 9.4.2, 9.8.2, 9.8.3, 9.9.1, 12.1.2, 12.2, 13.7.1.3

**Correlation and Intent of the Contract Documents**  
1.2

Cost, Definition of  
7.3.6

Costs  
2.4, 3.2.3, 3.7.4, 3.8.2, 3.15.2, 4.3, 5.4.2, 6.1.1, 6.2.3, 7.3.3.3, 7.3.6, 7.3.7, 7.3.8, 9.10.2, 10.3.2, 10.5, 11.3, 11.4, 12.1, 12.2.1, 12.2.4, 13.5, 14

**Cutting and Patching**  
3.14, 6.2.5

Damage to Construction of Owner or Separate Contractors  
3.14.2, 6.2.4, 10.2.1.2, 10.2.5, 10.6, 11.1, 11.4, 12.2.4

Damage to the Work  
3.14.2, 9.9.1, 10.2.1.2, 10.2.5, 10.6, 11.4, 12.2.4

Damages, Claims for  
3.2.3, 3.18, 4.3.10, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.1.1, 11.4.5, 11.4.7, 14.1.3, 14.2.4

Damages for Delay  
6.1.1, 8.3.3, 9.5.1.6, 9.7, 10.3.2

Date of Commencement of the Work, Definition of  
8.1.2

Date of Substantial Completion, Definition of  
8.1.3

Day, Definition of  
8.1.4

Decisions of the Architect  
4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 4.3.4, 4.4.1, 4.4.5, 4.4.6, 4.5, 6.3, 7.3.6, 7.3.8, 8.1.3, 8.3.1, 9.2, 9.4, 9.5.1, 9.8.4, 9.9.1, 13.5.2, 14.2.2, 14.2.4

**Decisions to Withhold Certification**  
9.4.1, 9.5, 9.7, 14.1.1.3

Defective or Nonconforming Work, Acceptance, Rejection and Correction of  
2.3, 2.4, 3.5.1, 4.2.6, 6.2.5, 9.5.1, 9.5.2, 9.6.6, 9.8.2, 9.9.3, 9.10.4, 12.2.1, 13.7.1.3

Defective Work, Definition of  
3.5.1

Definitions  
1.1, 2.1.1, 3.1, 3.5.1, 3.12.1, 3.12.2, 3.12.3, 4.1.1, 4.3.1, 5.1, 6.1.2, 7.2.1, 7.3.1, 8.1, 9.1, 9.8.1

**Delays and Extensions of Time**  
3.2.3, 4.3.1, 4.3.4, 4.3.7, 4.4.5, 5.2.3, 7.2.1, 7.3.1, 7.4.1, 8.3, 9.5.1, 9.7.1, 10.3.2, 10.6.1, 14.3.2

Disputes  
4.3, 4.4, 4.5, 4.6, 6.3, 7.3.8

**Documents and Samples at the Site**  
3.11

Drawings, Definition of  
1.1.5

Drawings and Specifications, Use and Ownership of  
1.1.1, 2.2.5, 3.11, 5.3

Effective Date of Insurance  
8.2.2, 11.1.2

**Emergencies**  
4.3.5, 10.6, 14.1.1.2

Employees, Contractor's  
3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3,  
11.1.1, 11.4.7, 14.1, 14.2.1.1  
Equipment, Labor, Materials and  
1.1.3, 1.1.6, 3.4, 3.5.1, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,  
4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.6, 9.3.2, 9.3.3, 9.5.1.3,  
9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2  
Execution and Progress of the Work  
1.1.3, 1.2.1, 1.2.2, 2.2.3, 2.2.5, 3.1, 3.5, 3.4, 3.5, 3.7,  
3.10, 3.12, 3.14, 4.2.2, 4.2.3, 4.3.3, 6.2.2, 7.1.3, 7.3.4,  
8.2, 9.5, 9.9.1, 10.2, 10.3, 12.2, 14.2, 14.3  
Extensions of Time  
3.2.3, 4.3.1, 4.3.4, 4.3.7, 4.4.5, 5.2.3, 7.2.1, 7.3, 7.4.1,  
9.5.1, 9.7.1, 10.3.2, 10.6.1, 14.3.2

#### **Failure of Payment**

4.3.6, 9.5.1.3, 9.7, 9.10.2, 14.1.1.3, 14.2.1.2, 13.6

#### **Faulty Work**

(See Defective or Nonconforming Work)

#### **Final Completion and Final Payment**

4.2.1, 4.2.9, 4.3.2, 9.8.2, 9.10, 11.1.2, 11.1.3, 11.4.1,  
11.4.5, 12.3.1, 13.7, 14.2.4, 14.4.3

#### **Financial Arrangements, Owner's**

2.2.1, 13.2.2, 14.1.1.4

#### **Fire and Extended Coverage Insurance**

11.4

### **GENERAL PROVISIONS**

#### **1**

#### **Governing Law**

##### **13.1**

Guarantees (See Warranty)

#### **Hazardous Materials**

10.2.4, 10.3, 10.5

#### **Identification of Contract Documents**

1.5.1

#### **Identification of Subcontractors and Suppliers**

5.2.1

#### **Indemnification**

3.17, 3.18, 9.10.2, 10.3.3, 10.5, 11.4.1.2, 11.4.7

#### **Information and Services Required of the Owner**

2.1.2, 2.2, 3.2.1, 3.12.4, 3.12.10, 4.2.7, 4.3.3, 6.1.3,  
6.1.4, 6.2.5, 9.3.2, 9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3,  
11.2, 11.4, 13.5.1, 13.5.2, 14.1.1.4, 14.1.4

#### **Injury or Damage to Person or Property**

4.3.8, 10.2, 10.6

#### **Inspections**

3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.2,  
9.8.3, 9.9.2, 9.10.1, 12.2.1, 13.5

#### **Instructions to Bidders**

1.1.1

#### **Instructions to the Contractor**

3.2.3, 3.3.1, 3.8.1, 4.2.8, 5.2.1, 7, 12, 8.2.2, 13.5.2

#### **Insurance**

3.18.1, 6.1.1, 7.3.6, 9.3.2, 9.8.4, 9.9.1, 9.10.2, 11

#### **Insurance, Boiler and Machinery**

11.4.2

#### **Insurance, Contractor's Liability**

11.1

Insurance, Effective Date of

8.2.2, 11.1.2

#### **Insurance, Loss of Use**

11.4.3

#### **Insurance, Owner's Liability**

11.2

#### **Insurance, Project Management Protective Liability**

11.3

#### **Insurance, Property**

10.2.5, 11.4

Insurance, Stored Materials

9.3.2, 11.4.1.4

### **INSURANCE AND BONDS**

#### **11**

Insurance Companies, Consent to Partial Occupancy

9.9.1, 11.4.1.5

Insurance Companies, Settlement with

11.4.10

Intent of the Contract Documents

1.2.1, 4.2.7, 4.2.12, 4.2.13, 7.4

#### **Interest**

13.6

#### **Interpretation**

1.2.3, 1.4, 4.1.1, 4.3.1, 5.1, 6.1.2, 8.1.4

Interpretations, Written

4.2.11, 4.2.12, 4.3.6

#### **Joinder and Consolidation of Claims Required**

4.6.4

#### **Judgment on Final Award**

4.6.6

#### **Labor and Materials, Equipment**

1.1.3, 1.1.6, 3.4, 3.5.1, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,  
4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.6, 9.3.2, 9.3.3, 9.5.1.3,  
9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2

Labor Disputes

8.3.1

Laws and Regulations

1.6, 3.2.2, 3.6, 3.7, 3.12.10, 3.13, 4.1.1, 4.4.8, 4.6,  
9.6.4, 9.9.1, 10.2.2, 11.1, 11.4, 13.1, 13.4, 13.5.1,  
13.5.2, 13.6, 14

Liens  
2.1.2, 4.4.8, 8.2.2, 9.3.3, 9.10

**Limitation on Consolidation or Joinder**  
**4.6.4**

Limitations, Statutes of  
4.6.3, 12.2.5, 13.7

Limitations of Liability  
2.3, 3.2.1, 3.5.1, 3.7.3, 3.12.8, 3.12.10, 3.17, 3.18,  
4.2.6, 4.2.7, 4.2.12, 6.2.2, 9.4.2, 9.6.4, 9.6.7, 9.10.4,  
10.2.5, 10.3.3, 11.1.2, 11.2.1, 11.4.7, 12.2.5, 13.4.2

Limitations of Time  
2.1.2, 2.2, 2.4, 3.2.1, 3.7.3, 3.10, 3.11, 3.12.5, 3.15.1,  
4.2.7, 4.3, 4.4, 4.5, 4.6, 5.2, 5.3, 5.4, 6.2.4, 7.3, 7.4,  
8.2, 9.2, 9.3.1, 9.3.3, 9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9,  
9.10, 11.1.3, 11.4.1.5, 11.4.6, 11.4.10, 12.2, 13.5,  
13.7, 14

**Loss of Use Insurance**  
**11.4.3**

Material Suppliers  
1.6, 3.12.1, 4.2.4, 4.2.6, 5.2.1, 9.3, 9.4.2, 9.6, 9.10.5

**Materials, Hazardous**  
10.2.4, **10.3**, 10.5

Materials, Labor, Equipment and  
1.1.3, 1.1.6, 1.6.1, 3.4, 3.5.1, 3.8.2, 3.8.3, 3.12, 3.13,  
3.15.1, 4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.6, 9.3.2, 9.3.3,  
9.5.1.3, 9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2

Means, Methods, Techniques, Sequences and  
Procedures of Construction  
3.3.1, 3.12.10, 4.2.2, 4.2.7, 9.4.2

Mechanic's Lien  
4.4.8, 2.1.2, 8.2.2

**Mediation**  
4.4.1, 4.4.5, 4.4.6, 4.4.8, **4.5**, 4.6.1, 4.6.2, 8.3.1

**Minor Changes in the Work**  
1.1.1, 3.12.8, 4.2.8, 4.3.6, 7.1, **7.4**

**MISCELLANEOUS PROVISIONS**  
**13**

Modifications, Definition of  
1.1.1

Modifications to the Contract  
1.1.1, 1.1.2, 3.7.3, 3.11, 4.1.2, 4.2.1, 5.2.3, 7, 8.3.1,  
9.7, 10.3.2, 11.4.1

**Mutual Responsibility**  
**6.2**

**Nonconforming Work, Acceptance of**  
9.6.6, 9.9.3, **12.3**

Nonconforming Work, Rejection and Correction of  
2.3, 2.4, 3.5.1, 4.2.6, 6.2.5, 9.5.1, 9.8.2, 9.9.3, 9.10.4,  
12.2.1, 13.7.1.3

Notice  
2.2.1, 2.3, 2.4, 3.2.3, 3.3.1, 3.7.2, 3.7.4, 3.12.9, 4.3,  
4.4.8, 4.6.5, 5.2.1, 8.2.2, 9.7, 9.10, 10.2.2, 11.1.3,  
11.4.6, 12.2.2, 13.3, 13.5.1, 13.5.2, 14.1, 14.2

**Notice, Written**  
2.3, 2.4, 3.3.1, 3.9, 3.12.9, 3.12.10, 4.3, 4.4.8, 4.6.5,  
5.2.1, 8.2.2, 9.7, 9.10, 10.2.2, 10.3, 11.1.3, 11.4.6,  
12.2.2, **13.3**, 14

Notice of Testing and Inspections  
13.5.1, 13.5.2

Notice to Proceed  
8.2.2

**Notices, Permits, Fees and**  
2.2.2, **3.7**, 3.13, 7.3.6.4, 10.2.2

Observations, Contractor's  
1.5.2, 3.2, 3.7.3, 4.3.4

Occupancy  
2.2.2, 9.6.6, 9.8, 11.4.1.5

Orders, Written  
1.1.1, 2.3, 3.9, 4.3.6, 7, 8.2.2, 11.4.9, 12.1, 12.2,  
13.5.2, 14.3.1

**OWNER**  
**2**

Owner, Definition of  
2.1

**Owner, Information and Services Required of the**  
2.1.2, **2.2**, 3.2.1, 3.12.10, 4.3.3, 6.1.3, 6.1.4, 6.2.5,  
9.3.2, 9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 11.4,  
13.5.1, 13.5.2, 14.1.1.4, 14.1.4

Owner's Authority  
1.6, 2.1.1, 2.3, 2.4, 3.4.2, 3.8.1, 3.12.10, 3.14.2, 4.1.2,  
4.1.3, 4.2.4, 4.2.9, 4.3.6, 4.4.7, 5.2.1, 5.2.4, 5.4.1,  
6.1, 6.3, 7.2.1, 7.3.1, 8.2.2, 8.3.1, 9.3.1, 9.3.2, 9.5.1,  
9.9.1, 9.10.2, 10.3.2, 11.1.3, 11.3.1, 11.4.3, 11.4.10,  
12.2.2, 12.3.1, 13.2.2, 14.3, 14.4

Owner's Financial Capability  
2.2.1, 13.2.2, 14.1.1.4

**Owner's Liability Insurance**  
**11.2**

Owner's Loss of Use Insurance  
11.4.3

Owner's Relationship with Subcontractors  
1.1.2, 5.2, 5.3, 5.4, 9.6.4, 9.10.2, 14.2.2

**Owner's Right to Carry Out the Work**  
**2.4**, 14.2.2

**Owner's Right to Clean Up**  
**6.3**

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

**Owner's Right to Stop the Work**  
**2.3**

Owner's Right to Suspend the Work  
14.3

Owner's Right to Terminate the Contract  
14.2

**Ownership and Use of Drawings, Specifications and Other Instruments of Service**  
1.1.1, **1.6**, 2.2.5, 3.2.1, 3.11.1, 3.17.1, 4.2.12, 5.3

**Partial Occupancy or Use**

9.6.6, **9.9**, 11.4.1.5

**Patching, Cutting and**

**3.14**, 6.2.5

**Patents**

3.17

**Payment, Applications for**

4.2.5, 7.3.8, 9.2, **9.3**, 9.4, 9.5.1, 9.6.3, 9.7.1, 9.8.5, 9.10.1, 9.10.3, 9.10.5, 11.1.3, 14.2.4, 14.4.3

**Payment, Certificates for**

4.2.5, 4.2.9, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7.1, 9.10.1, 9.10.3, 13.7, 14.1.1.3, 14.2.4

**Payment, Failure of**

4.3.6, 9.5.1.3, **9.7**, 9.10.2, 13.6, 14.1.1.3, 14.2.1.2,

**Payment, Final**

4.2.1, 4.2.9, 9.8.2, 9.10, 11.1.2, 11.1.3, 11.4.1, 11.4.5, 12.3.1, 13.7, 14.2.4, 14.4.3

**Payment Bond, Performance Bond and**

7.3.6.4, 9.6.7, 9.10.3, 11.4.9, **11.5**

**Payments, Progress**

4.3.3, 9.3, **9.6**, 9.8.5, 9.10.3, 13.6, 14.2.3

**PAYMENTS AND COMPLETION**

**9**

**Payments to Subcontractors**

5.4.2, 9.5.1.3, 9.6.2, 9.6.3, 9.6.4, 9.6.7, 11.4.8, 14.2.1.2

**PCB**

10.3.1

**Performance Bond and Payment Bond**

7.3.6.4, 9.6.7, 9.10.3, 11.4.9, **11.5**

**Permits, Fees and Notices**

2.2.2, **3.7**, 3.13, 7.3.6.4, 10.2.2

**PERSONS AND PROPERTY, PROTECTION OF**

**10**

**Polychlorinated Biphenyl**

10.3.1

**Product Data, Definition of**

3.12.2

**Product Data and Samples, Shop Drawings**

3.11, **3.12**, 4.2.7

**Progress and Completion**

4.2.2, 4.3.3, **8.2**, 9.8, 9.9.1, 14.1.4

**Progress Payments**

4.3.3, 9.3, **9.6**, 9.8.5, 9.10.3, 13.6, 14.2.3

**Project, Definition of the**

1.1.4

**Project Management Protective Liability**

**Insurance**

**11.3**

**Project Manual, Definition of the**

**1.1.7**

**Project Manuals**

2.2.5

**Project Representatives**

4.2.10

**Property Insurance**

10.2.5, **11.4**

**PROTECTION OF PERSONS AND PROPERTY**

**10**

**Regulations and Laws**

1.6, 3.2.2, 3.6, 3.7, 3.12.10, 3.13, 4.1.1, 4.4.8, 4.6, 9.6.4, 9.9.1, 10.2.2, 11.1, 11.4, 13.1, 13.4, 13.5.1, 13.5.2, 13.6, 14

**Rejection of Work**

3.5.1, 4.2.6, 12.2.1

**Releases and Waivers of Liens**

9.10.2

**Representations**

1.5.2, 3.5.1, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.4.2, 9.5.1, 9.8.2, 9.10.1

**Representatives**

2.1.1, 3.1.1, 3.9, 4.1.1, 4.2.1, 4.2.2, 4.2.10, 5.1.1, 5.1.2, 13.2.1

**Resolution of Claims and Disputes**

**4.4**, 4.5, 4.6

**Responsibility for Those Performing the Work**

3.3.2, 3.18, 4.2.3, 4.3.8, 5.3.1, 6.1.3, 6.2, 6.3, 9.5.1, 10

**Retainage**

9.3.1, 9.6.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3

**Review of Contract Documents and Field**

**Conditions by Contractor**

1.5.2, **3.2**, 3.7.3, 3.12.7, 6.1.3

**Review of Contractor's Submittals by Owner and Architect**

3.10.1, 3.10.2, 3.11, 3.12, 4.2, 5.2, 6.1.3, 9.2, 9.8.2

**Review of Shop Drawings, Product Data and**

**Samples by Contractor**

3.12

**Rights and Remedies**

1.1.2, 2.3, 2.4, 3.5.1, 3.15.2, 4.2.6, 4.3.4, 4.5, 4.6, 5.3, 5.4, 6.1, 6.3, 7.3.1, 8.3, 9.5.1, 9.7, 10.2.5, 10.3, 12.2.2, 12.2.4, **13.4**, 14

**Royalties, Patents and Copyrights**

**3.17**

**Rules and Notices for Arbitration**

4.6.2

**Safety of Persons and Property**

**10.2**, 10.6

**Safety Precautions and Programs**

3.3.1, 4.2.2, 4.2.7, 5.3.1, **10.1**, 10.2, 10.6

**Samples, Definition of**

3.12.3

**Samples, Shop Drawings, Product Data and**

3.11, **3.12**, 4.2.7

**Samples at the Site, Documents and**

**3.11**

## Schedule of Values

9.2, 9.3.1

Schedules, Construction

1.4.1.2, 3.10, 3.12.1, 3.12.2, 4.3.7.2, 6.1.3

Separate Contracts and Contractors

1.1.4, 3.12.5, 3.14.2, 4.2.4, 4.2.7, 4.6.4, 6, 8.3.1, 11.4.7, 12.1.2

Shop Drawings, Definition of

3.12.1

**Shop Drawings, Product Data and Samples**

3.11, 3.12, 4.2.7

**Site, Use of**

3.13, 6.1.1, 6.2.1

Site Inspections

3.2.1, 3.3.3, 3.7.1, 4.2, 4.3.4, 9.4.2, 9.10.1, 13.5

Site Visits, Architect's

4.2.2, 4.2.9, 4.3.4, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.5

Special Inspections and Testing

4.2.6, 12.2.1, 13.5

Specifications, Definition of the

1.1.6

**Specifications, The**

1.1.1, 1.1.6, 1.1.7, 1.2.2, 1.6, 3.11, 3.12.10, 3.17

Statute of Limitations

4.6.3, 13.7

Stopping the Work

2.3, 4.3.6, 9.7, 10.3, 14.1

Stored Materials

6.2.1, 9.3.2, 10.2.1.2, 10.2.4, 11.4.1.4

Subcontractor, Definition of

5.1.1

**SUBCONTRACTORS**

5

Subcontractors, Work by

1.2.2, 3.3.2, 3.12.1, 4.2.3, 5.2.3, 5.3, 5.4, 9.3.1.2, 9.6.7

**Subcontractual Relations**

5.3, 5.4, 9.3.1.2, 9.6, 9.10, 10.2.1, 11.4.7, 11.4.8, 14.1, 14.2.1

Submittals

1.6, 3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 7.3.6, 9.2, 9.3, 9.8, 9.9.1, 9.10.2, 9.10.3, 11.1.3

**Subrogation, Waivers of**

6.1.1, 11.4.5, 11.4.7

**Substantial Completion**

4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3, 12.2, 13.7

Substantial Completion, Definition of

9.8.1

Substitution of Subcontractors

5.2.3, 5.2.4

Substitution of Architect

4.1.3

Substitutions of Materials

3.4.2, 3.5.1, 7.3.7

Sub-subcontractor, Definition of

5.1.2

Subsurface Conditions

4.3.4

**Successors and Assigns**

13.2

**Superintendent**

3.9, 10.2.6

**Supervision and Construction Procedures**

1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 4.3.3, 6.1.3, 6.2.4, 7.1.3, 7.3.6, 8.2, 8.3.1, 9.4.2, 10, 12, 14

Surety

4.4.7, 5.4.1.2, 9.8.5, 9.10.2, 9.10.3, 14.2.2

Surety, Consent of

9.10.2, 9.10.3

Surveys

2.2.3

**Suspension by the Owner for Convenience**

14.4

Suspension of the Work

5.4.2, 14.3

Suspension or Termination of the Contract

4.3.6, 5.4.1.1, 11.4.9, 14

**Taxes**

3.6, 3.8.2.1, 7.3.6.4

**Termination by the Contractor**

4.3.10, 14.1

**Termination by the Owner for Cause**

4.3.10, 5.4.1.1, 14.2

Termination of the Architect

4.1.3

Termination of the Contractor

14.2.2

**TERMINATION OR SUSPENSION OF THE CONTRACT**

14

**Tests and Inspections**

3.1.3, 3.3.3, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 10.3.2, 11.4.1.1, 12.2.1, 13.5

**TIME**

8

**Time, Delays and Extensions of**

3.2.3, 4.3.1, 4.3.4, 4.3.7, 4.4.5, 5.2.3, 7.2.1, 7.3.1, 7.4.1, 8.3, 9.5.1, 9.7.1, 10.3.2, 10.6.1, 14.3.2

Time Limits

2.1.2, 2.2, 2.4, 3.2.1, 3.7.3, 3.10, 3.11, 3.12.5, 3.15.1, 4.2, 4.3, 4.4, 4.5, 4.6, 5.2, 5.3, 5.4, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3, 9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 11.1.3, 11.4.1.5, 11.4.6, 11.4.10, 12.2, 13.5, 13.7, 14

**Time Limits on Claims**

4.3.2, 4.3.4, 4.3.8, 4.4, 4.5, 4.6

Title to Work

9.3.2, 9.3.3



**UNCOVERING AND CORRECTION OF WORK**

**12**

**Uncovering of Work**

**12.1**

Unforeseen Conditions

4.3.4, 8.3.1, 10.3

Unit Prices

4.3.9, 7.3.3.2

Use of Documents

1.1.1, 1.6, 2.2.5, 3.12.6, 5.3

Use of Site

**3.13**, 6.1.1, 6.2.1

**Values, Schedule of**

**9.2**, 9.3.1

Waiver of Claims by the Architect

13.4.2

Waiver of Claims by the Contractor

4.3.10, 9.10.5, 11.4.7, 13.4.2

Waiver of Claims by the Owner

4.3.10, 9.9.3, 9.10.3, 9.10.4, 11.4.3, 11.4.5, 11.4.7, 12.2.2.1, 13.4.2, 14.2.4

Waiver of Consequential Damages

4.3.10, 14.2.4

Waiver of Liens

9.10.2, 9.10.4

**Waivers of Subrogation**

6.1.1, 11.4.5, **11.4.7**

**Warranty**

3.5, 4.2.9, 9.3.3, 9.8.4, 9.9.1, 9.10.4, 12.2.2, 13.7.1.3

Weather Delays

4.3.7.2

Work, Definition of

1.1.3

Written Consent

1.6, 3.4.2, 3.12.8, 3.14.2, 4.1.2, 4.3.4, 4.6.4, 9.3.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3, 11.4.1, 13.2, 13.4.2

Written Interpretations

4.2.11, 4.2.12, 4.3.6

Written Notice 2.3, 2.4, 3.3.1, 3.9, 3.12.9, 3.12.10,

4.3, 4.4.8, 4.6.5, 5.2.1, 8.2.2, 9.7, 9.10, 10.2.2, 10.3, 11.1.3, 11.4.6, 12.2.2, 12.2.4, **13.3**, 14

Written Orders

1.1.1, 2.3, 3.9, 4.3.6, 7, 8.2.2, 11.4.9, 12.1, 12.2, 13.5.2, 14.3.1

## **ARTICLE 1 GENERAL PROVISIONS**

### **§ 1.1 BASIC DEFINITIONS**

#### **§ 1.1.1 THE CONTRACT DOCUMENTS**

The Contract Documents consist of the Agreement between Owner and Contractor (hereinafter 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. Unless specifically enumerated in the Agreement, the Contract Documents do not include other documents such as bidding requirements (advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or portions of Addenda relating to bidding requirements).

#### **§ 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 Architect and Contractor, (2) between the Owner and a Subcontractor or Sub-subcontractor, (3) between the Owner and Architect or (4) between any persons or entities other than the Owner and 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.

#### **§ 1.1.3 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.

#### **§ 1.1.4 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 or 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.

#### **§ 1.1.6 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 THE PROJECT MANUAL**

The Project Manual is a volume assembled for the Work which may include the bidding requirements, sample forms, Conditions of the Contract and Specifications.

### **§ 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.

**§ 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.

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

### **§ 1.3 CAPITALIZATION**

**§ 1.3.1** Terms capitalized in these General Conditions include those which 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

§ 1.4.1 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.

## § 1.5 EXECUTION OF CONTRACT DOCUMENTS

§ 1.5.1 The Contract Documents shall be signed by the Owner and Contractor. If either the Owner or Contractor or both do not sign all the Contract Documents, the Architect shall identify such unsigned Documents upon request.

§ 1.5.2 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.

## § 1.6 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.6.1 The Drawings, Specifications and other documents, including those in electronic form, prepared by the Architect and the Architect's consultants are Instruments of Service through which the Work to be executed by the Contractor is described. The Contractor may retain one record set. Neither the Contractor nor any Subcontractor, Sub-subcontractor or material or equipment supplier shall own or claim a copyright in the Drawings, Specifications and other documents prepared by the Architect or the Architect's consultants, and unless otherwise indicated the Architect and the Architect's consultants shall be deemed the authors of them and will retain all common law, statutory and other reserved rights, in addition to the copyrights. All copies of Instruments of Service, except the Contractor's record set, shall be returned or suitably accounted for to the Architect, on request, upon completion of the Work. The Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants, and copies thereof furnished to the Contractor, are for use solely with respect to this Project. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants. The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants appropriate to and for use in the execution of their Work under the Contract Documents. All copies made under this authorization shall bear the statutory copyright notice, if any, shown on the Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' copyrights or other reserved rights.

## 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.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

### § 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 The Owner shall, at the written request of the Contractor, prior to commencement of the Work and thereafter, furnish to the Contractor reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. Furnishing of such evidence shall be a condition precedent to commencement or continuation of the Work. After such evidence has been furnished, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees, including those required under Section 3.7.1, which are the responsibility of the Contractor under the Contract Documents, 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.

§ 2.2.3 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.

§ 2.2.4 Information or services required of the Owner by the Contract Documents shall be furnished by the Owner with reasonable promptness. Any other information or services relevant to the Contractor's performance of the Work under the Owner's control shall be furnished by the Owner after receipt from the Contractor of a written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, such copies of Drawings and Project Manuals as are reasonably necessary for execution of the Work.

### § 2.3 OWNER'S RIGHT TO STOP THE WORK

§ 2.3.1 If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or persistently fails to carry out Work in accordance with 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, except to the extent required by Section 6.1.3.

### § 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

§ 2.4.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may after such seven-day period give the Contractor a second written notice to correct such deficiencies within a three-day period. If the Contractor within such three-day period after receipt of such second notice fails to commence and continue to correct any deficiencies, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor 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. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

## 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 term "Contractor" means the Contractor or the Contractor's 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 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 other than the Contractor.

### § 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Since the Contract Documents are complementary, before starting each portion of the Work, the Contractor shall carefully study and compare the various Drawings and other Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, any errors, inconsistencies or omissions discovered by the Contractor shall be reported promptly to the Architect as a request for information in such form as the Architect may require.

§ 3.2.2 Any design errors or omissions noted by the Contractor during this review shall be reported promptly to the Architect, but 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. The

Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations, but any nonconformity discovered by or made known to the Contractor shall be reported promptly to the Architect.

**§ 3.2.3** If the Contractor believes that additional cost or time is involved because of clarifications or instructions issued by the Architect in response to the Contractor's notices or requests for information pursuant to Sections 3.2.1 and 3.2.2, the Contractor shall make Claims as provided in Sections 4.3.6 and 4.3.7. If the Contractor fails to perform the obligations of Sections 3.2.1 and 3.2.2, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. The Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents or for differences between field measurements or conditions and the Contract Documents 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, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and 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 written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any resulting loss or damage.

**§ 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.

### **§ 3.4 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** The Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order.

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

### **§ 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 otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, modifications 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.

### § 3.6 TAXES

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

### § 3.7 PERMITS, FEES AND NOTICES

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit and other permits and governmental fees, licenses and inspections necessary for proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required when bids are received or negotiations concluded.

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

§ 3.7.3 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.

§ 3.7.4 If the Contractor performs Work knowing it to be contrary to laws, statutes, ordinances, building codes, and rules and regulations without such notice to the Architect and Owner, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

### § 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;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances;
- .3 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 (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner in sufficient time to avoid delay in the Work.

### § 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

### § 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare and keep current, for the Architect's approval, a schedule of submittals which is coordinated with the Contractor's construction schedule and allows the Architect reasonable time to review 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

§ 3.11.1 The Contractor shall maintain at the site for the Owner one record copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to record field changes and selections made during construction, and one record copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work.

### § 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 which 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. The purpose of their submittal is to demonstrate for those portions of the Work for which submittals are required by the Contract Documents the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. 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 which 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 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 may be returned by the Architect without action.

§ 3.12.6 By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has 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 requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing 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 written 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 which 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. 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 cause such services or certifications to be provided by a properly 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, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, 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. The Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

### **§ 3.13 USE OF SITE**

**§ 3.13.1** The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

### **§ 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.

**§ 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 such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's 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 or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove from and about the Project waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials.

**§ 3.15.2** If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the cost thereof shall be charged to the Contractor.

### **§ 3.16 ACCESS TO WORK**

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

### **§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS**

**§ 3.17.1** 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 such 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 the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.



### **§ 3.18 INDEMNIFICATION**

**§ 3.18.1** To the fullest extent permitted by law and to the extent claims, damages, losses or expenses are not covered by Project Management Protective Liability insurance purchased by the Contractor in accordance with Section 11.3, the Contractor shall indemnify and hold harmless the Owner, 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 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 which would otherwise exist as to a party or person described in this Section 3.18.

**§ 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 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.

## **ARTICLE 4 ADMINISTRATION OF THE CONTRACT**

### **§ 4.1 ARCHITECT**

**§ 4.1.1** The Architect is the person lawfully licensed to practice architecture or an entity lawfully practicing architecture identified as such 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.

**§ 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.

**§ 4.1.3** If the employment of the Architect is terminated, the Owner shall employ a new Architect against whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the former Architect.

### **§ 4.2 ARCHITECT'S 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 (1) during construction, (2) until final payment is due and (3) with the Owner's concurrence, from time to time during the one-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, as a representative of the Owner, will visit the site at intervals appropriate to the stage of the Contractor's operations (1) to become generally familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed, (2) to endeavor to guard the Owner against defects and deficiencies in the Work, and (3) to determine in general if the Work 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 neither have control over or charge of, nor be responsible 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, except as provided in Section 3.3.1.

**§ 4.2.3** 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 Facilitating Contract Administration.** Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the

Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

**§ 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 will have 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 13.5.2 and 13.5.3, whether or not such 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, material and equipment 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 with such reasonable promptness as to cause no delay in the Work or in the activities of the Owner, Contractor or separate contractors, 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, unless otherwise specifically stated by the Architect, 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 authorize minor changes in the Work as provided in Section 7.4.

**§ 4.2.9** The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion, will 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, and will issue a final Certificate for Payment upon compliance with the requirements of the Contract Documents.

**§ 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 duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

**§ 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. If no agreement is made concerning the time within which interpretations required of the Architect shall be furnished in compliance with this Section 4.2, then delay shall not be recognized on account of failure by the Architect to furnish such interpretations until 15 days after written request is made for them.

**§ 4.2.12** Interpretations and decisions of the Architect will be consistent with the 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 initial 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 so 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.

#### **§ 4.3 CLAIMS AND DISPUTES**

**§ 4.3.1 Definition.** A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extension of 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. Claims must be initiated by written notice. The responsibility to substantiate Claims shall rest with the party making the Claim.

**§ 4.3.2 Time Limits on Claims.** Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be initiated by written notice to the Architect and the other party.

**§ 4.3.3 Continuing Contract Performance.** Pending final resolution of a Claim except as otherwise agreed in writing or as provided in Section 9.7.1 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.

**§ 4.3.4 Claims for Concealed or Unknown Conditions.** If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions which 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 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if 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 an equitable adjustment 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 so notify the Owner and Contractor in writing, 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 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 4.4.

**§ 4.3.5 Claims for Additional Cost.** If the Contractor wishes to make Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.6.

**§ 4.3.6** If the Contractor believes additional cost is involved for reasons including but not limited to (1) a written interpretation from the Architect, (2) an order by the Owner to stop the Work where the Contractor was not at fault, (3) a written order for a minor change in the Work issued by the Architect, (4) failure of payment by the Owner, (5) termination of the Contract by the Owner, (6) Owner's suspension or (7) other reasonable grounds, Claim shall be filed in accordance with this Section 4.3.

**§ 4.3.7 Claims for Additional Time**

**§ 4.3.7.1** If the Contractor wishes to make Claim for an increase in the Contract Time, written notice as provided herein shall be given. 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.

**§ 4.3.7.2** 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.

**§ 4.3.8 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 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

**§ 4.3.9** If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

**§ 4.3.10 Claims for Consequential Damages.** The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes:

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 4.3.10 shall be deemed to preclude an award of liquidated direct damages, when applicable, in accordance with the requirements of the Contract Documents.

#### **§ 4.4 RESOLUTION OF CLAIMS AND DISPUTES**

**§ 4.4.1 Decision of Architect.** Claims, including those alleging an error or omission by the Architect but excluding those arising under Sections 10.3 through 10.5, shall be referred initially to the Architect for decision. An initial decision by the Architect shall be required as a condition precedent to mediation, arbitration or litigation of all Claims between the Contractor and Owner arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Architect with no decision having been rendered by the Architect. The Architect will not decide disputes between the Contractor and persons or entities other than the Owner.

**§ 4.4.2** The Architect will review Claims and within ten days of the receipt of the 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 Architect is unable to resolve the Claim if the Architect lacks sufficient information to evaluate the merits of the Claim or if the Architect concludes that, in the Architect's sole discretion, it would be inappropriate for the Architect to resolve the Claim.

**§ 4.4.3** In evaluating Claims, the Architect 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 Architect in rendering a decision. The Architect may request the Owner to authorize retention of such persons at the Owner's expense.

**§ 4.4.4** If the Architect 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 such request, and shall either provide a response on the requested supporting data, advise the Architect when the response or supporting data will be furnished or advise the Architect that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Architect will either reject or approve the Claim in whole or in part.

**§ 4.4.5** The Architect will approve or reject Claims by written decision, which shall state the reasons therefor and which shall notify the parties of any change in the Contract Sum or Contract Time or both. The approval or rejection of a Claim by the Architect shall be final and binding on the parties but subject to mediation and arbitration.

**§ 4.4.6** When a written decision of the Architect states that (1) the decision is final but subject to mediation and arbitration and (2) a demand for arbitration of a Claim covered by such decision must be made within 30 days after the date on which the party making the demand receives the final written decision, then failure to demand arbitration within said 30 days' period shall result in the Architect's decision becoming final and binding upon the Owner and Contractor. If the Architect renders a decision after arbitration proceedings have been initiated, such decision may be entered as evidence, but shall not supersede arbitration proceedings unless the decision is acceptable to all parties concerned.

**§ 4.4.7** Upon receipt of a Claim against the Contractor or at any time thereafter, the Architect or 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 Architect or the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

**§ 4.4.8** 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 prior to resolution of the Claim by the Architect, by mediation or by arbitration.

#### § 4.5 MEDIATION

§ 4.5.1 Any Claim arising out of or related to the Contract, except Claims relating to aesthetic effect and except those waived as provided for in Sections 4.3.10, 9.10.4 and 9.10.5 shall, after initial decision by the Architect or 30 days after submission of the Claim to the Architect, be subject to mediation as a condition precedent to arbitration or the institution of legal or equitable proceedings by either party.

§ 4.5.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be in accordance with the Construction Industry Mediation Rules of the American Arbitration Association currently in effect. Request for mediation shall be filed in writing with the other party to the Contract and with the American Arbitration Association. The request may be made concurrently with the filing of a demand for arbitration but, in such event, mediation shall proceed in advance of arbitration or legal or equitable proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order.

§ 4.5.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

#### § 4.6 ARBITRATION

§ 4.6.1 Any Claim arising out of or related to the Contract, except Claims relating to aesthetic effect and except those waived as provided for in Sections 4.3.10, 9.10.4 and 9.10.5, shall, after decision by the Architect or 30 days after submission of the Claim to the Architect, be subject to arbitration. Prior to arbitration, the parties shall endeavor to resolve disputes by mediation in accordance with the provisions of Section 4.5.

§ 4.6.2 Claims not resolved by mediation shall be decided by arbitration which, unless the parties mutually agree otherwise, shall be in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association currently in effect. The demand for arbitration shall be filed in writing with the other party to the Contract and with the American Arbitration Association, and a copy shall be filed with the Architect.

§ 4.6.3 A demand for arbitration shall be made within the time limits specified in Sections 4.4.6 and 4.6.1 as applicable, and in other cases within a reasonable time after the Claim has arisen, and in no event shall it be made after the date when institution of legal or equitable proceedings based on such Claim would be barred by the applicable statute of limitations as determined pursuant to Section 13.7.

**§ 4.6.4 Limitation on Consolidation or Joinder.** No arbitration arising out of or relating to the Contract shall include, by consolidation or joinder or in any other manner, the Architect, the Architect's employees or consultants, except by written consent containing specific reference to the Agreement and signed by the Architect, Owner, Contractor and any other person or entity sought to be joined. No arbitration shall include, by consolidation or joinder or in any other manner, parties other than the Owner, Contractor, a separate contractor as described in Article 6 and other persons substantially involved in a common question of fact or law whose presence is required if complete relief is to be accorded in arbitration. No person or entity other than the Owner, Contractor or a separate contractor as described in Article 6 shall be included as an original third party or additional third party to an arbitration whose interest or responsibility is insubstantial. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of a Claim not described therein or with a person or entity not named or described therein. The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

**§ 4.6.5 Claims and Timely Assertion of Claims.** The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

**§ 4.6.6 Judgment on Final Award.** The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

### 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 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 or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect will promptly reply to the Contractor in writing stating whether or not the Owner or the Architect, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Owner or Architect to reply promptly shall constitute notice of no reasonable objection.

§ 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.

§ 5.2.3 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.

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

## § 5.3 SUBCONTRACTUAL RELATIONS

§ 5.3.1 By appropriate agreement, written where legally required for validity, 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, which the Contractor, by these 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 which 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.

## § 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner provided that:

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements which the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

## **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 Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Section 4.3.

§ 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 Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules when directed to do so. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 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, the Owner shall be deemed to be subject to the same obligations and to have the same rights which apply to the Contractor 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 report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report 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, except as to defects not then reasonably discoverable.

§ 6.2.3 The Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a separate contractor because of delays, improperly timed activities or defective construction of the Contractor. The Owner shall be responsible to the Contractor for costs incurred by the Contractor because of delays, improperly timed activities, damage to the Work or defective construction of a separate contractor.

§ 6.2.4 The Contractor shall promptly remedy damage wrongfully caused by the Contractor to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 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.

### **§ 6.3 OWNER'S RIGHT TO CLEAN UP**

§ 6.3.1 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.

## 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.

§ 7.1.2 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.

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

### § 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 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 Methods used in determining adjustments to the Contract Sum may include those listed in Section 7.3.3.

### § 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 7.3.6.

§ 7.3.4 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.

§ 7.3.5 A Construction Change Directive signed by the Contractor indicates the agreement of the Contractor 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.

§ 7.3.6 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the method and the adjustment shall be determined by the Architect 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, a reasonable allowance for overhead and profit. 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 7.3.6 shall be limited to the following:

- .1 costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- .5 additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.7 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change which 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.

§ 7.3.8 Pending final determination of the total cost of a Construction Change Directive to the Owner, amounts not in dispute for such changes in the Work shall be included in Applications for Payment accompanied by a Change Order indicating the parties' agreement with part or all of such costs. For any portion of such cost that remains in dispute, the Architect will make an interim determination for purposes of monthly certification for payment for those costs. That 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 4.

§ 7.3.9 When the Owner and Contractor agree with the 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 shall be recorded by preparation and execution of an appropriate Change Order.

#### § 7.4 MINOR CHANGES IN THE WORK

§ 7.4.1 The Architect will have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

### 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.

§ 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, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance. Unless the date of commencement is established by the Contract Documents or a notice to proceed given by the Owner, the Contractor shall notify the Owner in writing not less than five days or other agreed period before commencing the Work to permit the timely filing of mortgages, mechanic's liens and other security interests.

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

### § 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 ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control, or by delay authorized by the Owner pending mediation and arbitration, or by other causes which the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Section 4.3.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

## 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.

### § 9.2 SCHEDULE OF VALUES

§ 9.2.1 Before the first Application for Payment, the Contractor shall submit to the Architect a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

### § 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 for operations completed in accordance with the schedule of values. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and reflecting retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.8, such applications may include requests for payment on account of changes in the Work which have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Such applications may not include requests for payment for portions of the Work for which the Contractor does not intend to pay to a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, 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 procedures 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.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

#### § 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 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 comprising the Application for Payment, that the Work has progressed to the point indicated and that, to the best of the Architect's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents. 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. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. 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 material 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 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 another 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; or
- .7 persistent failure to carry out the Work in accordance with the Contract Documents.

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

#### § 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.

§ 9.6.2 The Contractor shall promptly pay each Subcontractor, upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of such Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 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** Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor except as may otherwise be required by law.

**§ 9.6.5** Payment to material 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 and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, 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, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

### **§ 9.7 FAILURE OF PAYMENT**

**§ 9.7.1** If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by arbitration, then the Contractor may, upon seven additional days' written 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 shut-down, 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 is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

**§ 9.8.2** When 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 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.

**§ 9.8.3** 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 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 which shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall 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 such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

### **§ 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, provided such occupancy or use is consented



§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material 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.

## ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

### § 10.1 SAFETY PRECAUTIONS AND PROGRAMS

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

### § 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 or the Contractor's Subcontractors or Sub-subcontractors; 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.

§ 10.2.2 The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall 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 owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods 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, except damage or loss 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 load or permit any part of the construction or site to be loaded so as to endanger its safety.

### § 10.3 HAZARDOUS MATERIALS

§ 10.3.1 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 report the condition to the Owner and Architect in writing.

§ 10.3.2 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 verify that it has been 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 such material or substance or who are to perform the task of removal or safe containment of such 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. The Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up, which adjustments shall be accomplished as provided in Article 7.

§ 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) and provided that such damage, loss or expense is not due to the sole negligence of a party seeking indemnity.

§ 10.4 The Owner shall not be responsible under Section 10.3 for materials and substances brought to the site by the Contractor unless such materials or substances were required by the Contract Documents.

§ 10.5 If, without negligence on the part of the Contractor, the Contractor is held liable for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

#### § 10.6 EMERGENCIES

§ 10.6.1 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 Section 4.3 and Article 7.

### ARTICLE 11 INSURANCE AND BONDS

#### § 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 claims under workers' compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed;
- .2 claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 claims for damages insured by usual personal injury liability coverage;
- .5 claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 claims for bodily injury or property damage arising out of completed operations; and
- .8 claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until date of final payment and termination of any coverage required to be maintained after final payment.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written

notice has been given to the Owner. If any of the foregoing insurance coverages are required to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment as required by Section 9.10.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness in accordance with the Contractor's information and belief.

## **§ 11.2 OWNER'S LIABILITY INSURANCE**

**§ 11.2.1** The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

## **§ 11.3 PROJECT MANAGEMENT PROTECTIVE LIABILITY INSURANCE**

**§ 11.3.1** Optionally, the Owner may require the Contractor to purchase and maintain Project Management Protective Liability insurance from the Contractor's usual sources as primary coverage for the Owner's, Contractor's and Architect's vicarious liability for construction operations under the Contract. Unless otherwise required by the Contract Documents, the Owner shall reimburse the Contractor by increasing the Contract Sum to pay the cost of purchasing and maintaining such optional insurance coverage, and the Contractor shall not be responsible for purchasing any other liability insurance on behalf of the Owner. The minimum limits of liability purchased with such coverage shall be equal to the aggregate of the limits required for Contractor's Liability Insurance under Sections 11.1.1.2 through 11.1.1.5.

**§ 11.3.2** To the extent damages are covered by Project Management Protective Liability insurance, the Owner, Contractor and Architect waive all rights against each other for damages, except such rights as they may have to the proceeds of such insurance. The policy shall provide for such waivers of subrogation by endorsement or otherwise.

**§ 11.3.3** The Owner shall not require the Contractor to include the Owner, Architect or other persons or entities as additional insureds on the Contractor's Liability Insurance coverage under Section 11.1.

## **§ 11.4 PROPERTY INSURANCE**

**§ 11.4.1** Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.4 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

**§ 11.4.1.1** Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

**§ 11.4.1.2** If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance which will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

**§ 11.4.1.3** If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

**§ 11.4.1.4** This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.



§ 11.4.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.4.2 **Boiler and Machinery Insurance.** The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.4.3 **Loss of Use Insurance.** The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.4.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.4.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.4.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.4.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.4. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.4.7 **Waivers of Subrogation.** The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.4 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.4.8 A loss insured under Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.4.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.4.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or in accordance with an arbitration award in which case the procedure shall be as provided in Section 4.6. If after such loss no other

special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

**§ 11.4.10** The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved as provided in Sections 4.5 and 4.6. The Owner as fiduciary shall, in the case of arbitration, make settlement with insurers in accordance with directions of the arbitrators. If distribution of insurance proceeds by arbitration is required, the arbitrators will direct such distribution.

#### **§ 11.5 PERFORMANCE BOND AND PAYMENT BOND**

**§ 11.5.1** The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

**§ 11.5.2** Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall permit a copy to be made.

### **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 required 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 which 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, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

#### **§ 12.2 CORRECTION OF WORK**

##### **§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION**

**§ 12.2.1.1** The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

##### **§ 12.2.2 AFTER SUBSTANTIAL COMPLETION**

**§ 12.2.2.1** In addition to the Contractor's obligations under Section 3.5, if, within one year 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 an 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 written 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 one-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 2.4.

**§ 12.2.2.2** The one-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 performance of the Work.

**§ 12.2.2.3** The one-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 which 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, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work which 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 which the Contractor might have under the Contract Documents. Establishment of the one-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 which 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 effected whether or not final payment has been made.

## ARTICLE 13 MISCELLANEOUS PROVISIONS

### § 13.1 GOVERNING LAW

§ 13.1.1 The Contract shall be governed by the law of the place where the Project is located.

### § 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to partners, successors, assigns and legal representatives of such other party in respect 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 such 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 an institutional lender providing construction financing for the Project. In such event, the lender shall assume the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

### § 13.3 WRITTEN NOTICE

§ 13.3.1 Written notice shall be deemed to have been duly served if delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended, or if delivered at or sent by registered or certified mail to the last business address known to the party giving notice.

### § 13.4 RIGHTS AND REMEDIES

§ 13.4.1 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.

§ 13.4.2 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 there under, except as may be specifically agreed in writing.

### § 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work required by the Contract Documents or by laws, ordinances, rules, regulations or orders of public authorities having jurisdiction shall be made at an appropriate time. 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 which do not become requirements until after bids are received or negotiations concluded.

§ 13.5.2 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 13.5.1, 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 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 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.

§ 13.5.4 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.

§ 13.5.5 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.

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

#### § 13.6 INTEREST

§ 13.6.1 Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

#### § 13.7 COMMENCEMENT OF STATUTORY LIMITATION PERIOD

§ 13.7.1 As between the Owner and Contractor:

- .1 Before Substantial Completion. As to acts or failures to act occurring prior to the relevant date of Substantial Completion, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than such date of Substantial Completion;
- .2 Between Substantial Completion and Final Certificate for Payment. As to acts or failures to act occurring subsequent to the relevant date of Substantial Completion and prior to issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of issuance of the final Certificate for Payment; and
- .3 After Final Certificate for Payment. As to acts or failures to act occurring after the relevant date of issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of any act or failure to act by the Contractor pursuant to any Warranty provided under Section 3.5, the date of any correction of the Work or failure to correct the Work by the Contractor under Section 12.2, or the date of actual commission of any other act or failure to perform any duty or obligation by the Contractor or Owner, whichever occurs last.

### ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

#### § 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 issuance of an order of a court or other public authority having jurisdiction which requires all Work to be stopped;
- .2 an act of government, such as a declaration of national emergency which 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; or
- .4 the Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery, including reasonable overhead, profit and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has persistently 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' written 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 persistently or repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 persistently disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Architect that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 accept assignment of subcontracts pursuant to Section 5.4; and
- .3 finish the Work by whatever reasonable method the Owner may deem expedient. Upon request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When 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.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Architect, upon application, and this obligation for payment shall survive termination of the Contract.

#### § 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 as described in 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 written 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 Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

**CRITERIA SPECIFICATIONS, DRAWINGS, AND DOCUMENTS  
FOR A NEW WALGREEN'S STORE  
PORTLAND, ME  
STORE # 12326**

<b>SHEET</b>	<b>TITLE</b>
T0.1	TITLE SHEET
TO.2	CIVIL COVER SHEET & GENERAL NOTES
1 OF 1	EXISTING CONDITIONS PLAN
C0.2	ACCESSIBLE GRADING DETAILS
C1.1	SITE LAYOUT PLAN
C2.1	GRADING DRAINAGE & EROSION CONTROL PLAN
C3.1	UTILITY PLAN
C4.1	SITE DETAILS - 1
C4.2	SITE DETAILS - 2
C4.3	UTILITY DETAILS
C4.4	EROSION CONTROL NOTES & DETAILS
C4.5	MISCELLANEOUS DETAILS
C4.6	WB – 50 TRUCK TURNING PLAN
C5.1	OFF – SITE IMPROVEMENTS
L1.1	LANDSCAPE & IRRIGATION PLAN
D.1	FIXTURE PLAN
A1.1	GENERAL FLOOR PLAN & SCHEDULE
A1.2	REFLECTED CEILING PLAN & SPECIFICATIONS
A1.3	ROOF PLAN & RELATED DETAILS
A1.4	ROOF DETAILS
A2.1	EXTERIOR ELEVATIONS
A2.2	BUILDING SECTIONS & DETAILS
A2.2A	BUILDING SECTIONS & DETAILS
A2.3	BUILDING SECTIONS & DETAILS
A2.4	BUILDING SECTIONS & DETAILS
A2.5	COMPACTOR & TOTE STORAGE DETAILS
A3.1	INTERIOR ELEVATIONS, RELATED DATA & DETAILS
A4.1	STANDARD DETAILS & SPECIFICATIONS
A4.2	STANDARD DETAILS & SPECIFICATIONS
A4.3	STANDARD DETAILS
A4.4	EF BAVIS DRIVE-THRU SERVICE WINDOW
A4.5	ROOF CURB DETAILS
A5.1	PYLON SIGN DETAILS
A5.2	EXTERIOR SIGN DETAILS
S0.1	SATELLITE DISH ANTENNA SUPPORTS
S-1	FOUNDATION FIRST FLOOR PLAN
S-2	ROOF FRAMING PLAN
S-3	SECTIONS & DETAILS
S-4	SECTIONS & DETAILS
S-5	SECTIONS & DETAILS
S-6	STRUCTURAL EXTERIOR ELEVATIONS

FP1.1	FIRE PROTECTION PLAN
FP1.2	FIRE ALARM PLAN
M1.1	FLOOR PLAN - MECHANICAL
M2.1	MECHANICAL DETAILS
M2.2	HVAC CONTROL WIRING DIAGRAMS & SCHEDULES
P1.1	WATER AND GAS DISTRIBUTION PLAN
P1.2	SANITARY PLUMBING PLAN
P2.1	PLUMBING DETAILS
E0.1	SITE ELECTRICAL PLAN
E0.1A	PHOTOMETRIC CALCULATIONS
E1.1	FLOOR PLAN -LIGHTING
E1.2	FLOOR PLAN - POWER
E1.3	FLOOR PLAN- ETHERNET & SATELLITE SYSTEM
E1.4	FLOOR PLAN – BURGLAR ALARM & CCTV SYSTEM
E1.5	FLOOR PLAN – TELEPHONE & SOUND SYSTEM
E1.6	FLOOR PLAN – SPARE CONDUIT PLAN
E1.7	CHANNEL LETTER L.E.D. SYSTEM
E2.1	FEEDER DIAGRAM (120/208) / ELECTRICAL DETAILS
E2.1A	G.E. CONTROL SCHEDULE
E2.1B	G.E. CONTROL DIAGRAMS
E2.1C	TESTING AND MISC ELECTRICAL DETAILS
E3.1	ELECTRICAL PANEL SCHEDULES (120V)
E4.1	LIGHTING SCHEDULE & DETAILS
E4.2	SATELLITE SYSTEM DETAILS
E4.3	ELECTRICAL DETAILS
E4.4	ELECTRICAL DETAILS
E4.5	COOLER / FREEZER WIRING DIAGRAMS
E4.6	AIR CURTAIN WIRING DIAGRAM



**GEOTECHNICAL ENGINEERING SERVICES  
PROPOSED WALGREENS  
ALLEN AND WASHINGTON AVENUES  
PORTLAND, MAINE**

**07-1053.3**

**February 6, 2009**

**PREPARED FOR**

The Richmond Company, Inc.  
Attention: David Latulippe  
35 Primrose Lane  
Freeport, Maine 04032

**PREPARED BY**



Attention: Paul F. Kohler, P. E.  
286 Portland Road  
Gray, Maine 04039-9586  
207-657-2866



## TABLE OF CONTENTS

<b>1.0 INTRODUCTION.....</b>	<b>1</b>
1.1 Scope of Work .....	1
1.2 Proposed Construction .....	1
<b>2.0 EXPLORATION AND TESTING .....</b>	<b>2</b>
2.1 Exploration.....	2
2.2 Laboratory Testing.....	2
<b>3.0 SITE AND SUBSURFACE CONDITIONS.....</b>	<b>3</b>
3.1 Site and Surficial Conditions .....	3
3.2 Subsurface Soils.....	3
3.3 Groundwater.....	4
<b>4.0 EVALUATION AND RECOMMENDATIONS .....</b>	<b>5</b>
4.1 General Findings .....	5
4.2 Site and Subgrade Preparation.....	5
4.3 Foundation Design.....	6
4.4 Settlement Analysis .....	7
4.5 Excavation Work.....	7
4.6 Slab-on-Grade Floors .....	8
4.7 Backfill and Compaction Requirements.....	9
4.8 Entrance Slabs, Sidewalks and Exterior Slabs.....	10
4.9 Foundation Drainage .....	10
4.10 Pavements.....	10
4.10.1 Bituminous Asphalt Pavement.....	10
4.10.2 Concrete Pavement.....	11
4.11 Basement Area Backfill / Re-Use of On-Site Soils.....	12
4.12 Walgreens Specifications.....	13
4.13 Weather Considerations .....	13
4.14 Design Review and Construction Testing.....	13
<b>5.0 CLOSURE .....</b>	<b>14</b>

Attachment A	Limitations
Sheet 1	Exploration Location Plan
Sheets 2 through 12	Boring Logs
Sheet 13	Key to Notes and Symbols
Sheets 14 through 16	Gradation Reports
Sheet 17	Consolidation Test
Sheet 18	Foundation and Underdrain Detail





07-1053.3

February 6, 2009

The Richmond Co., Inc.  
Attention: David Latulippe  
35 Primrose Lane  
Freeport, ME 04032

Subject: Geotechnical Engineering Services  
Proposed Walgreens  
Allen and Washington Avenues  
Portland, Maine

Dear Mr. Latulippe:

In accordance with our Agreement dated November 14, 2008, we have made a subsurface investigation for the proposed retail project on the northwest corner of the intersection of Allen and Washington Avenues in Portland, Maine. This report summarizes our findings and recommendations, and its contents are subject to the limitations set forth in Attachment A.

## **1.0 INTRODUCTION**

### **1.1 Scope of Work**

The purpose of the investigation was to explore the subsurface conditions and provide recommendations relative to foundations, earthwork and pavement associated with the proposed construction. The investigation included eleven test borings, laboratory testing and a geotechnical evaluation of the subsurface findings as they relate to the proposed construction.

### **1.2 Proposed Construction**

Based on information you provided, we understand development plans call for construction of a on-grade, single-story, high-bay, masonry structure on the northwesterly corner of the intersection of Allen Avenue and Washington Avenue. We understand the new structure will be on the order of 110-feet by 140-feet in plan



dimensions with a slab-on-grade floor and spread footing foundation system. Based on information provided by the Richmond Company, we understand that interior column loads may approach 80-kips and exterior wall loads may approach 4-kips per lineal foot for load bearing walls and 2.6-kips per lineal foot for non-load bearing walls.

Based on information provided by Gorrill-Palmer (project civil engineer), the site is relatively flat at about elevation 81-feet to 83-feet (project datum). The proposed building is planned at a finish floor elevation of 82.66-feet. Paved areas are proposed around the structure with access drives from both Washington Avenue and Allen Avenue. Concrete pavement is proposed on the northerly side of the structure; concrete sidewalks are proposed along the easterly and southerly sides, and a canopy drive-through is proposed on the westerly side of the structure.

Proposed and existing site features are shown on the "Exploration Location Plan" attached as Sheet 1.

## **2.0 EXPLORATION AND TESTING**

### **2.1 Exploration**

Eleven test borings (B-1 through B-11) were made at the site on December 11 and 15, 2008, by Great Works Test Boring, Inc. of Rollinsford, New Hampshire. The test boring locations were selected and established in the field by S. W. COLE ENGINEERING, INC. based on a site plan provided by Gorrill-Palmer (Project Civil Engineer) dated December 2007. Potential locations for explorations were limited in some areas due to existing structures and either known or suspected subsurface utilities. The approximate test boring locations are shown on the "Exploration Location Plan" attached as Sheet 1. Logs of the test borings based on our observations and testing of samples are attached as Sheets 2 through 12. A key to the notes and symbols used on the logs is attached as Sheet 13. The elevations noted on the test boring logs are based on topographic information shown on Sheet 1.

### **2.2 Laboratory Testing**

Soil samples recovered from the test borings were visually classified in our laboratory. Laboratory testing was performed on selected samples recovered from the test borings. Moisture content test results are noted on the test boring logs. The results of three grain size analyses are presented graphically on Sheets 14 through 16. A one-



dimensional consolidation test was performed on a sample of gray silty clay obtained at boring B-5. The results are attached as Sheet 17.

As part of our environmental site assessment, soil samples obtained from the test borings were also screened for potential hydrocarbons using a Photo Ionization Detector (PID). Please refer to our Phase II Environmental Site Assessment, (SWCE# 07-1053.1) dated January 2, 2009 for environmental information and PID results.

### **3.0 SITE AND SUBSURFACE CONDITIONS**

#### **3.1 Site and Surficial Conditions**

The site of the proposed retail structure is located on the northwest quadrant of the intersection of Allen and Washington Avenues. The site is currently occupied by four structures; two are 1-story masonry block buildings, one is a 1-story wood-framed building with a basement level and one is a high bay masonry block and stone veneer structure. We understand the structures will be razed or removed in favor of the new construction. The remaining portions of the site are open and paved or landscaped. This site is relatively flat at about elevation 81-feet to 83-feet.

Our records research indicates that several underground fuel storage tanks were reportedly removed from the site (see SWCE Environmental Report, SWCE#07-1053).

#### **3.2 Subsurface Soils**

Borings B-1 through B-7 were made in the proposed building area, while borings B-8 through B-11 were made in the proposed paved areas. Borings B-1 through B-7 were extended to refusal surfaces, while borings B-8 through B-11 were made to depths of 7 to 9-feet. In general, below the asphalt pavement, the explorations encountered gravelly silty sand (pavement base aggregate) overlying silty, clayey fill or silty sand fill (miscellaneous fill) overlying stiff to very stiff native brown silty clay which transitions to softer gray silty clay overlying glacial till mantling probable bedrock. The principal strata encountered are summarized below; not all the strata was encountered at each of the boring locations.

Fill: The test borings generally encountered a base aggregate fill directly beneath the asphalt pavement consisting of gravelly sand with some silt. This fill layer appears to vary from about 6-inches to 8-inches in thickness. Below the base aggregate fill, the



borings encountered medium dense or medium stiff, brown and gray clayey silt or silty sand with some gravel (miscellaneous fill). This fill, where encountered, extended to depths on the order of 1.5-feet to 7-feet below the ground surface at the explorations.

Brown Silty Clay: Below the fill soils, the borings encountered native, stiff to very stiff, brown silty clay extending to depths of about 9-feet to 12-feet below the existing ground surface.

Gray Silty Clay: Below the brown silty clay, borings B-1 through B-7 generally encountered a deposit of gray silty clay of medium consistency. This strata transitions from the brown silty clay and extends to depths varying from about 15-feet to 20-feet below the existing ground surface.

Glacial Till: Below the gray silty clay, borings B-1 through B-7 encountered a thin strata of gray silty sand, some gravel (glacial till). This strata varied from about 1-foot to 4-feet in thickness and was generally medium-dense.

Refusal Surfaces: Borings B-1 through B-7 were extended to refusal surfaces. Refusal surfaces (probable bedrock) were encountered at depths varying from about 15-feet to 25-feet below the existing ground surface.

For a more detailed description of the explorations, please refer to the attached boring logs.

### **3.3 Groundwater**

In general, the soils were wet to saturated below about 8-feet from the ground surface. The soil samples were generally damp to moist above these depths. It should be noted that due to the short time period of drilling, accurate groundwater information could not be obtained at the borings. Long term groundwater information is not available; however, groundwater likely becomes perched on top of the relatively impervious silty clay strata beneath the site. Groundwater should be expected to fluctuate seasonally and during periods of heavy precipitation and/or snow melt.



## **4.0 EVALUATION AND RECOMMENDATIONS**

### **4.1 General Findings**

Based on the subsurface findings and our understanding of the proposed construction, it is our opinion that the existing miscellaneous fill underlying the site is not suitable for support of new foundations or slab areas. Thus, all miscellaneous fill needs to be removed from beneath the entire building footprint, as well as adjacent sidewalks and entrance slabs. It is our opinion that the proposed structure can be supported on spread footings founded on a 12-inch minimum thickness of compacted crushed stone fully wrapped with a woven geotextile fabric (such as Mirafi 500x) overlying native, stiff, brown silty clay.

The existing asphalt pavement section does not appear to be adequate for Walgreens standards. Thus, proposed paved areas will need to be cut to bottom of proposed sub-base elevation and then densified prior to placing the sub-base aggregate.

Since this is a developed urban site, it should be anticipated that the miscellaneous fill will vary in soil type, thickness, quality, moisture content and compaction, etc. Fill will likely be deeper near structures, particularly with basements and where subsurface tanks once existed. These factors must be considered in planning and budgeting of the project.

### **4.2 Site and Subgrade Preparation**

We recommend that site preparation begin with the construction of an erosion control system to protect adjacent drainage ways and areas outside the construction limits. As much pavement and vegetation as possible should remain undisturbed adjacent to the construction site to lessen the potential for erosion. We recommend all pavement, topsoil, subsurface structures including existing foundations and slabs, septic systems (if any), underground utilities and any soft, wet and unstable soils be removed from areas of construction. Excavations to remove fill extending below bottom of footing elevation should continue laterally 1-foot for every 1-foot of over-excavation (1V to 1H bearing splay).

Below slab areas, where excavation of fill and unsuitable soil extends below proposed subgrade, additional compacted Structural Fill can be used overlying geotextile fabric (where needed).



Paved area subgrades should be proof-rolled with a 10-ton vibratory roller-compactor prior to placing new sub-base aggregate. Use of static or dynamic compaction will be dependent upon subgrade moisture conditions.

S. W. COLE ENGINEERING, INC. should be on site during excavation and proof-rolling work to observe subgrade suitability. Groundwater will need to be controlled to at least 12-inches below subgrades during construction. The contractor will need to be prepared to place a woven geotextile fabric (such as Mirafi 500x) on subgrades prior to placing new fill in areas where subgrades are wet and easily disturbed.

#### **4.3 Foundation Design**

The proposed structure can derive support from spread footings founded on a 12-inch thick layer of compacted  $\frac{3}{4}$ -inch crushed stone fully wrapped with geotextile fabric (such as Mirafi 500x) overlying stiff, stable native stiff brown silty clay.

The design freezing index for the Portland, Maine area is approximately 1250 Fahrenheit degree-days. Thus, exterior perimeter footings will need to be cast at least 4.5-feet below exterior finish grade to provide frost protection. For footings, bearing on properly prepared subgrades, we recommend the following geotechnical parameters for design of spread footings:

- |  |                              |
|--|------------------------------|
| • Allowable Soil Bearing Pressure                      | 2.5 ksf                      |
| • Seismic Soil Site Class (IBC 2006 N-Value Method)    | D                            |
| • Design Frost Depth                                   | 4.5 feet                     |
| • Base Friction Factor                                 | 0.4 (Crushed Stone)          |
| • Passive Lateral Earth Pressure Coefficient ( $K_p$ ) | 3.0 (Structural Fill)        |
| • Active Lateral Earth Pressure Coefficient ( $K_a$ )  | 0.3 (Structural Fill)        |
| • At Rest Lateral Earth Pressure Coefficient ( $K_o$ ) | 0.5 (Structural Fill)        |
| • Total Unit Weight of Backfill ( $\gamma_t$ )         | 130 pcf (Structural Fill)    |
| • Internal Friction Angle ( $\phi$ )                   | 30 degrees (Structural Fill) |

Wall footings should be at least 24-inches wide and column footings should be at least 36 inches in their smallest lateral dimension.



#### **4.4 Settlement Analysis**

We have made an analysis of the post-construction consolidation of the underlying compressible gray silty clay beneath the proposed structure. Our analysis has been based upon the following:

1. The subsurface information obtained at the borings
2. The existing grading information shown on Sheet 1
3. A finish floor elevation of 82.66-feet (project datum)
4. The consolidation information from Boring B-5, Sample 1U
5. Structural loading information as stated herein

Based on the above, we estimate that post-construction settlement due to consolidation of the gray silty clay may approach 1-inch total and  $\frac{3}{4}$ -inch differential. Further, we estimate that differential settlement between the north and south portions of the structure will be on the order of 0.003 in/in.

#### **4.5 Excavation Work**

Excavation work will encounter pavement, landscaped areas, existing foundations, utilities and miscellaneous fill soils overlying native silty clay. It should be noted that the site is an urban developed property occupied by several structures and may have been occupied by other structures, subsurface structures and underground tanks.

Thus, relic foundations, miscellaneous and unsuitable fills, tanks or leach beds may be encountered. S. W. COLE ENGINEERING, INC. should be on site during excavation work to observe excavations and subgrade conditions. We recommend that a smooth-edged bucket be utilized for excavation to subgrade.

Based on the subsurface findings, perched groundwater and wet to saturated soils will likely be encountered near subgrade elevation in the foundation and utility excavations. The contractor should be prepared to dewater excavations, as needed. Sumping and pumping dewatering techniques should be planned to adequately control groundwater to at least 1-foot below subgrade elevation. Controlling the water levels to at least 1-foot below subgrade elevations will help stabilize the subgrade and provide a more suitable working surface during construction.



Precipitation and freezing/thawing will make the soils difficult to work. Thus, the subgrade should not be exposed any longer than necessary. Should the subgrade become loose, soft or difficult to work, we recommend that the unsuitable soils be removed and replaced with additional crushed stone.

Excavations must be properly shored and/or sloped to prevent sloughing and caving of the sidewalls during construction. Temporary, unsupported soil excavations should be sloped back to 1.5H:1V or flatter. All excavations should be consistent with OSHA trenching regulations.

#### **4.6 Slab-on-Grade Floors**

Slab-on-grade floors in heated areas may be designed using a subgrade reaction modulus of 200 pci (pounds per cubic inch) provided the slab is underlain by at least 12-inches of compacted 2-inch minus Structural Fill placed on a properly prepared subgrade. Additional fill needed to achieve slab subgrade should consist of additional Structural Fill (see conceptual foundations detail attached as Sheet 18).

We recommend that control joints be installed within the floor slab to accommodate shrinkage in the concrete as it cures. In general, construction joints are typically installed at 10-foot to 15-foot spacing, but design spacing should be determined by the structural engineer with consideration to slab thickness. A vapor retarder should underlie floor slabs covered with moisture sensitive flooring to limit the upward migration of moisture vapors. The vapor retarder should have a permeance that is less than the floor covering being applied on the slab. We recommend consulting flooring manufacturers relative to selection and installation of acceptable vapor retarder systems for use with their products.

Floor slabs should be wet-cured for a period of least 7 days after casting as a measure to reduce the potential for curling of the concrete and excessive drying/shrinkage. We recommend that consideration be given to using curing paper installed over the cast-in-place concrete and that the curing paper remain in place as long as possible to improve the quality of the completed floor. In lieu of curing paper, a curing compound may be utilized; however, care must be taken to prevent scuffing of the compound from the floor during the curing period.



#### **4.7 Backfill and Compaction Requirements**

Although a wide range of soil materials can be used successfully, it has been our experience that granular soils with good drainage characteristics (Structural Fill) provide significant advantages, particularly in wet conditions and during cold weather construction. The fills and native soils at the site are frost susceptible and not suitable for foundation backfill or subgrade fill within the proposed building area or as backfill below sidewalks, entrances and concrete pavements.

**Structural Fill:** Backfill below the buildings slab, adjacent to building foundation walls (interior and exterior sides), below sidewalks and entrances, as well as adjacent to exterior foundations such as canopy foundations, bollards and light pole bases should be a clean, 2-inch minus aggregate material meeting the Structural Fill gradation requirements.

<b>Structural Fill</b>	
<b>Sieve Size</b>	<b>Percent Finer by Weight</b>
2 inch	100
1/4 inch	25 to 90
#40	0 to 30
#200	0 to 5

**Crushed Stone:** Crushed Stone used below footings and as foundation drainage aggregate should meet the gradation requirements of Maine DOT (MDOT) Standard Specifications 703.22 "Underdrain Backfill Type C".

<b>MDOT 703.22 Underdrain Backfill Material Type C</b>	
<b>Sieve Size</b>	<b>Percent Finer by Weight</b>
1 inch	100
3/4 inch	90-100
3/8 inch	0-75
#4	0-25
#10	0-5

Fill and backfill should be placed in horizontal lifts and be compacted. Lift thickness should be such that the desired density is achieved throughout the lift thickness with 3 to 5 passes of the compaction equipment. Fill placed below building, sidewalk and



paved areas should be compacted to at least 95 percent of its maximum dry density as determined by ASTM D-1557. Crushed Stone should be compacted to 100 percent of its maximum dry rodded unit weight as determined by ASTM C-29.

#### **4.8 Entrance Slabs, Sidewalks and Exterior Slabs**

The existing site soils are susceptible to frost heaving. Entrances and sidewalks should be designed to reduce the effects of frost action. We recommend that excavation beneath entrances and sidewalks abutting the building continue to at least 4.5-feet below finish grade. The entire length and width of entrance slabs and adjacent sidewalk areas should be underlain with compacted Structural Fill to a depth of at least 4.5-feet below finish grade. A gradual transition (3H:1V) of the Structural Fill thickness should be provided from the 4.5-foot depth up to the bottom of the pavement subbase material at adjacent paved areas. This transition will reduce the potential for abrupt differential movement due to frost action (see detail on Sheet 18).

#### **4.9 Foundation Drainage**

We recommend that a perimeter foundation drainage system be provided for the structure. Foundation drains should be installed within the 12-inch minimum thick layer of geotextile fabric-wrapped crushed stone proposed below the perimeter footings placed and situated at least 12-inches outside the outside edge of perimeter footings. Rigid, 4-inch diameter SDR-35 foundation drainpipes should be utilized. The foundation drains should have a positive gravity outlet. Exterior foundation backfill should be sealed with a surficial layer of clayey or loamy soil in areas that are not to be paved or occupied by entrance slabs. This is to reduce direct surface water infiltration into the backfill. Ideally, surface grades should be sloped away from the building for positive surface water drainage. Conceptual underdrain details are shown on Sheet 18.

#### **4.10 Pavements**

##### **4.10.1 Bituminous Asphalt Pavement**

We understand that the Walgreens typical specification requires that the asphalt pavement be underlain with either 6-inches or 8-inches (light duty/heavy duty) of compacted base overlying a well-drained subgrade soil. Considering our experience on similar projects in this area and considering the site soils encountered and design freezing index, we recommend a thicker pavement section than required by the retailer.



We anticipate that the paved drive and parking areas will be subjected primarily to passenger car traffic with occasional delivery truck traffic. Considering the site soils and the proposed usage, we offer the following pavement section for your consideration. Materials are based on Maine Department of Transportation specifications.

<b>FLEXIBLE PAVEMENT</b>	
9.5 mm Superpave 703.09 (50 gyration design)	1.25 inches
19.0 mm Superpave 703.09 (50 gyration design)	2.25 inches
MDOT Crushed Aggregate Base 703.06 Type A	6 inches
MDOT Aggregate Subbase 703.06 Type D	12 inches
NOTE: Assumes a seasonally adjusted CBR value of 7	

The bituminous pavement should be compacted to 92 to 97 percent of its theoretical maximum density as determined by ASTM D-2041. A tack coat between successive lifts is recommended. The base and subbase materials should be compacted to at least 95 percent of their maximum dry densities as determined by ASTM D-1557. If fill is needed below the Aggregate Type D subbase material, we recommend that either additional Type D subbase or Structural Fill be utilized. We recommend that all fill placed below the subbase material be compacted to at least 95 percent of ASTM D-1557.

#### 4.10.2 Concrete Pavement

We recommend that the area beneath all concrete pavement be excavated to at least 4.5-feet below finish grade. The area should be backfilled with MDOT Type D Subbase, compacted to 95 percent of ASTM D-1557 up to the bottom of the Type A aggregate base material. We recommend the following pavement section:

<b>CONCRETE PAVEMENTS</b>		
Pavement Layer	Standard Duty	Heavy Duty
Concrete Pavement (5,000 psi compressive, 550 psi flexural, 1½" aggregate with 5±1% air)	5 inches	8 inches
Maine DOT Crushed Aggregate Base 703.06 Type A, (Standard Specifications for Highways and Bridges, 2002, Pages 7-17)	6 inches	9 inches
NOTE: Assumes a seasonally adjusted CBR value of 7		



We recommend that control joints be provided in the concrete pavement surface to control random cracking. We recommend control joint spacing of not more than 12-feet both longitudinally and horizontally. The control joints may consist of construction breaks or sawed joints. The sawed joints should be installed as early as practicable after placement of the concrete to avoid random cracking. We recommend that dowels be provided at construction joints to help load transfer.

S. W. COLE ENGINEERING, INC. should be on-site to observe all paved area subgrades prior to placing new fills. Any soft or wet areas, or areas exhibiting unsuitable, unstable soil, will need to be removed and replaced with additional Sub-base material or Structural Fill. Additionally, a geotextile fabric (such as Mirafi 500x) may be needed on paved area subgrades in areas where the subgrade is wet prior to placing and compacting new fill.

Consideration should be given to the development of both surface and subgrade drainage. The paved areas should be graded to promote surface drainage away from the building area and design should consider sloping of the subgrade to enhance drainage.

Where new utilities are proposed beneath the new paved areas, backfilling of the utility trenches should be made in a manner to reduce differential frost action. Utility pipes should be bedded and surrounded using materials consistent with the manufacturer's specifications. Above the utility bedding, backfill in trenches should be material similar to that in the trench sidewalls to lessen the potential for differential frost action between the trench and the adjacent materials. The backfill materials should be placed in horizontal lifts not exceeding 12-inches in thickness and should be compacted to a density similar to that of the material in the adjacent trench sidewalls.

Frost penetration can be on the order of 4.5-feet or more in this area of the state. In the absence of full depth excavation of frost susceptible soils or use of insulation, frost will penetrate into the subgrade and some frost heaving and pavement distress must be anticipated.

#### **4.11 Basement Area Backfill / Re-Use of On-Site Soils**

Based on the findings at some of the explorations, it appears that some of the existing pavement base aggregate and underlying silty sand with some gravel fill may be



suitable for re-use to backfill the basement excavation left after demolition of the 1-story, wood-framed structure located along Allen Avenue, where new paved area is planned. The on-site silty, clayey soils are not suitable for backfill at the site. We recommend placing a geotextile fabric (such as Mirafi 500x) on the basement subgrade prior to placing new compacted fill or, alternatively, consideration could be given to leaving the existing basement slab in place and placing the new compacted fill on top of the slab.

#### **4.12 Walgreens Specifications**

It should be noted that the backfill and pavement gradations and thicknesses provided herein are based on both our experience with similar projects in this area and our understanding of the intent of the Walgreens requirements and may not necessarily always match the Walgreens specifications. The contractor and project designers will need to review the Walgreens standard specifications carefully, to ensure that the intent of Walgreens specifications are followed. S. W. COLE ENGINEERING, INC. is available to assist the client, design team and contractor in interpreting Walgreens backfill, compaction and pavement sections, as requested.

#### **4.13 Weather Considerations**

If foundation construction takes place during fall or winter, foundations and floor slabs must be protected during freezing conditions. Concrete must not be placed on frozen soil and once placed, the soil beneath the structure must be protected from freezing. It should be anticipated that relatively dry or wet conditions might occur at any time during the year. Minimizing construction traffic and excavation activities during wet weather conditions may be required due to the silty nature of the site soils. Moisture "conditioning" of the new site fill will likely be required to achieve compaction.

Site soils are moisture sensitive and subgrades will be susceptible to disturbance during wet conditions. Site work and construction activities should take appropriate measures to protect exposed subgrades.

#### **4.14 Design Review and Construction Testing**

It is recommended that the geotechnical engineer be engaged to review the site work and foundation drawings to determine that our recommendations have been appropriately interpreted and implemented.



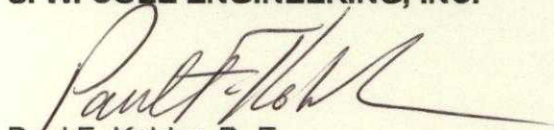
S. W. COLE ENGINEERING, INC. should be engaged to observe subgrades and to provide observation and testing services during the excavation and foundation phases of the work. This is to observe compliance with the design concepts, specifications and design recommendations and to allow design changes in the event that subsurface conditions are found to differ from those anticipated prior to start of construction. S. W. COLE ENGINEERING, INC is available to provide testing and special inspection services for soils, concrete, masonry, steel, spray-applied fireproofing and asphalt construction materials.

### 5.0 CLOSURE

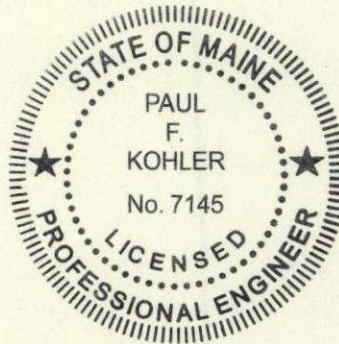
It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you as the design progresses and during the construction phase.

Very truly yours,

**S. W. COLE ENGINEERING, INC.**



Paul F. Kohler, P. E.  
Senior Geotechnical Engineer



PFK:jlw



**Attachment A**  
**Limitations**

This report has been prepared for the exclusive use by The Richmond Company, Inc. for specific application to the Proposed Walgreens on the northwest corner of Allen Avenue and Washington Avenue in Portland, Maine. S. W. COLE ENGINEERING, INC. has endeavored to conduct the work in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

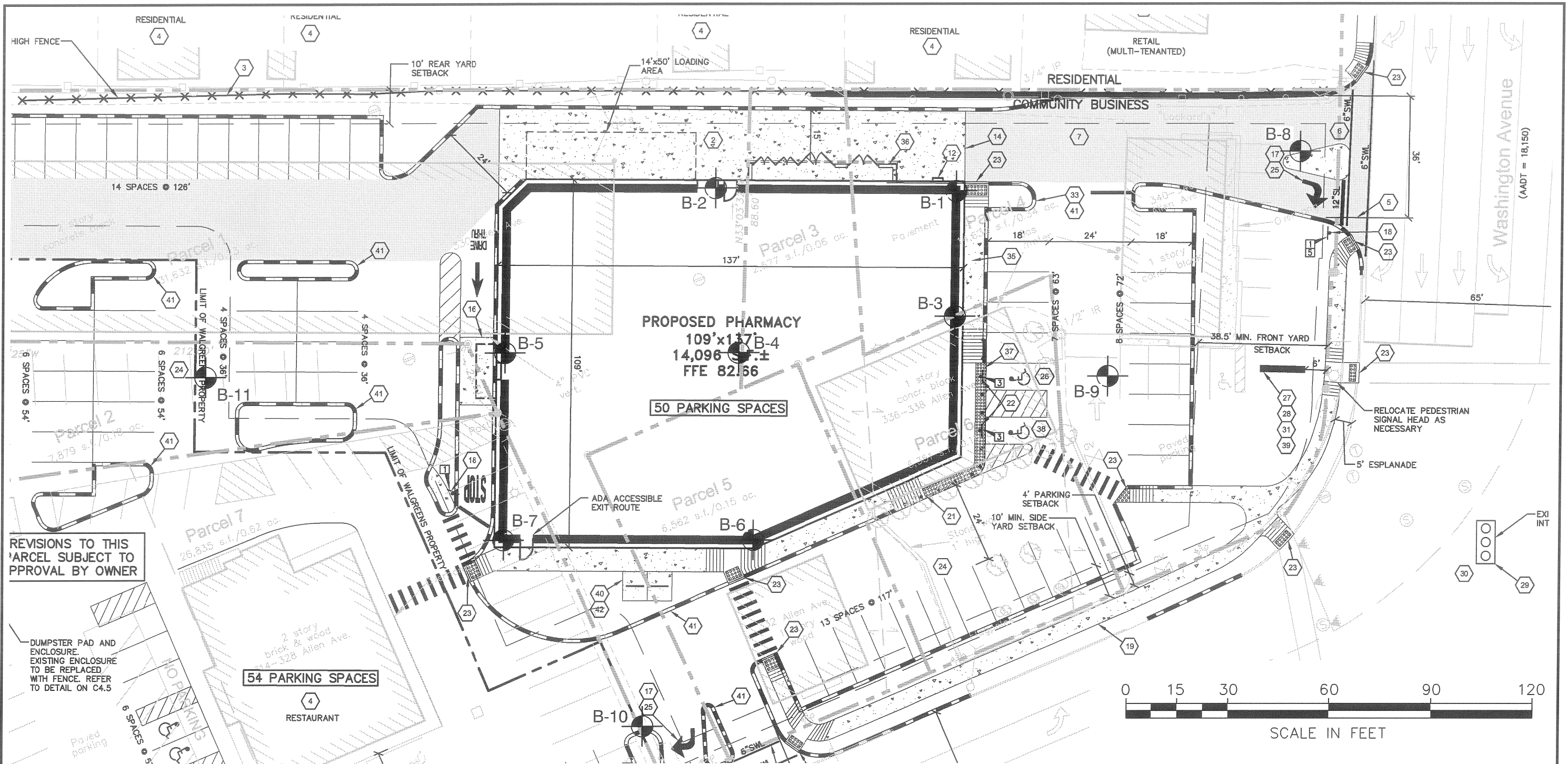
Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S. W. COLE ENGINEERING, INC.'s scope of work has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S. W. COLE ENGINEERING, INC. should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S. W. COLE ENGINEERING, INC.







REVISIONS TO THIS PARCEL SUBJECT TO APPROVAL BY OWNER

DUMPSTER PAD AND ENCLOSURE. EXISTING ENCLOSURE TO BE REPLACED WITH FENCE. REFER TO DETAIL ON C4.5

**LEGEND:**

 APPROXIMATE BORING LOCATION

**NOTES:**

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM A 1"=20' SCALE PLAN OF THE SITE ENTITLED "SITE LAYOUT PLAN", DATED 12/07, PROVIDED BY THE RICHMOND COMPANIES, INC..

2. THE BORINGS WERE LOCATED IN THE FIELD BY TAPED MEASUREMENTS FROM EXISTING SITE FEATURES.

3. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S.W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.

4. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.



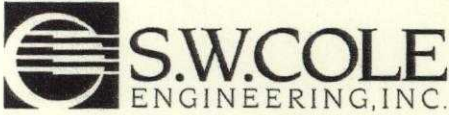
THE RICHMOND COMPANY  
**EXPLORATION LOCATION PLAN**  
 PROPOSED WALGREEN PHARMACY  
 ALLEN AVENUE AND WASHINGTON AVENUE  
 PORTLAND, MAINE

Job No.	07-1053.3	Scale	1"=30'
Date :	01/16/09	Sheet	1

R:\2007\07-10533\dwg\07-1053.3\_ELP.dwg, 1/16/2009 2:27:10 PM, I-1, CEM, S.W. Cole Engineering, Inc.







# BORING LOG

BORING NO.: B-1  
 SHEET: 1 OF 1  
 PROJECT NO.: 07-1053.3  
 DATE START: 12/11/2008  
 DATE FINISH: 12/11/2008  
 ELEVATION: 83' +/-  
 SWC REP.: MPL

PROJECT / CLIENT: PROPOSED PHARMACY / THE RICHMOND COMPANY, INC.  
 LOCATION: ALLEN & WASHINGTON AVENUES, PORTLAND, ME  
 DRILLING CO.: GREAT WORKS TEST BORING DRILLER: JEFFREY LEE

	TYPE	SIZE	HAMMER WT.	HAMMER FALL
CASING:	HW	4" I.D.	300 lbs	16"
SAMPLER:	SS	1 3/8" I.D.	140 lbs	30"
CORE BARREL:	N/A			

WATER LEVEL INFORMATION  
 SOILS APPEAR WET TO SATURATED  
 BELOW 10' +/-

CASING BLOWS PER FOOT	SAMPLE				SAMPLER BLOWS PER 6"				DEPTH	STRATA & TEST DATA
	NO.	PEN.	REC.	DEPTH @ BOT	0-6	6-12	12-18	18-24		
	1D	24"	14"	2.0'	3	5	4	5	1.5'	BROWN GRAVELLY SAND, SOME SILT (FILL) ~MEDIUM DENSE~
									3.0'	GRAY SILTY SANDY CLAY, TRACE GRAVEL (FILL)
	2D	24"	24"	7.0'	2	6	9	12		BROWN SILTY CLAY ~VERY STIFF~ qp > 9 ksf
										TRANSITIONING TO...
	3D	24"	24"	12.0'	2	3	3	3		...GRAY SILTY CLAY ~MEDIUM~ qp = 1 ksf
									15.0'	
	4D	3"	2"	15.2'	50/3"				15.2'	GRAY SILTY SAND, SOME GRAVEL (TILL) REFUSAL @ 15.2' PROBABLE BEDROCK

SAMPLES:  
 D = SPLIT SPOON  
 C = 2" SHELBY TUBE  
 S = 3" SHELBY TUBE  
 U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:  
 DRILLER - VISUALLY  
 SOIL TECH. - VISUALLY  
 LABORATORY TEST

REMARKS:  
 STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.





# BORING LOG

BORING NO.: **B-2**  
 SHEET: **1 OF 1**  
 PROJECT NO.: **07-1053.3**  
 DATE START: **12/11/2008**  
 DATE FINISH: **12/11/2008**  
 ELEVATION: **82' +/-**  
 SWC REP.: **MPL**

PROJECT / CLIENT: PROPOSED PHARMACY / THE RICHMOND COMPANY, INC.  
 LOCATION: ALLEN & WASHINGTON AVENUES, PORTLAND, ME  
 DRILLING CO.: GREAT WORKS TEST BORING DRILLER: JEFFREY LEE

	TYPE	SIZE	HAMMER WT.	HAMMER FALL
CASING:	HW	4" I.D.	300 lbs	16"
SAMPLER:	SS	1 3/8" I.D.	140 lbs	30"
CORE BARREL:	N/A			

WATER LEVEL INFORMATION  
 SOILS APPEAR WET TO SATURATED  
 BELOW 10' +/-

CASING BLOWS PER FOOT	SAMPLE				SAMPLER BLOWS PER 6"				DEPTH	STRATA & TEST DATA	
	NO.	PEN.	REC.	DEPTH @ BOT	0-6	6-12	12-18	18-24			
									0.1'	ASPHALT PAVEMENT	
	1D	24"	10"	2.1'	4	3	2	4	0.5'	BROWN GRAVELLY SAND, SOME SILT (FILL)	
									3.0'	GRAY SILTY CLAY, TRACE GRAVEL (FILL)	
	2D	24"	24"	7.0'	5	7	12	15		BROWN SILTY CLAY w = 21.4%      q <sub>p</sub> > 9 ksf ~VERY STIFF~ TRANSITIONING TO...	
	3D	24"	24"	12.0'	WOH/24"						...GRAY SILTY CLAY w = 31.7%      q <sub>p</sub> ≤ 1 ksf ~MEDIUM~
	4D	15"	12"	16.3'	WOH	1	50/4"		15.5'		
									16.3'	GRAY SILTY SAND (TILL) REFUSAL @ 16.3' PROBABLE BEDROCK	

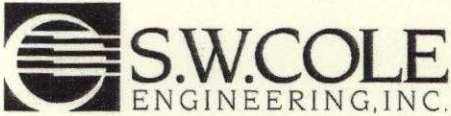
SAMPLES:  
 D = SPLIT SPOON  
 C = 2" SHELBY TUBE  
 S = 3" SHELBY TUBE  
 U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:  
 DRILLER - VISUALLY  
 SOIL TECH. - VISUALLY  
 LABORATORY TEST

REMARKS:  
 STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: **B-2**





# BORING LOG

BORING NO.: **B-3**  
 SHEET: 1 OF 1  
 PROJECT NO.: 07-1053.3  
 DATE START: 12/11/2008  
 DATE FINISH: 12/11/2008  
 ELEVATION: 82.5' +/-  
 SWC REP.: MPL

PROJECT / CLIENT: PROPOSED PHARMACY / THE RICHMOND COMPANY, INC.  
 LOCATION: ALLEN & WASHINGTON AVENUES, PORTLAND, ME  
 DRILLING CO.: GREAT WORKS TEST BORING DRILLER: JEFFREY LEE

	TYPE	SIZE	HAMMER WT.	HAMMER FALL
CASING:	HW	4" I.D.	300 lbs	16"
SAMPLER:	SS	1 3/8" I.D.	140 lbs	30"
CORE BARREL:	N/A			

WATER LEVEL INFORMATION  
SOILS APPEAR WET TO SATURATED  
BELOW 10' +/-

CASING BLOWS PER FOOT	SAMPLE				SAMPLER BLOWS PER 6"				DEPTH	STRATA & TEST DATA	
	NO.	PEN.	REC.	DEPTH @ BOT	0-6	6-12	12-18	18-24			
	1D	24"	7"	2.1'	3	3	3	2	0.1'	ASPHALT PAVEMENT	
									2.5'	BROWN GRAVELLY SAND, SOME SILT (FILL) ~LOOSE TO MEDIUM DENSE~	
									3.0'	BROWN SILTY CLAY, TRACE GRAVEL (FILL)	
	2D	24"	24"	7.0'	5	8	11	17		BROWN SILTY CLAY w = 19.9%      q <sub>p</sub> > 9 ksf ~VERY STIFF~ TRANSITIONING TO...	
	3D	24"	24"	12.0'	WOH	1	1	1		...GRAY SILTY CLAY w = 28.5%      q <sub>p</sub> <= 1 ksf ~MEDIUM~	
	4D	24"	24"	17.0'	WOH/24"						w = 30.0% ~MEDIUM TO SOFT~
	5D	24"	18"	22.0'	WOH/18"			12	21.5'		
									24.5'	GRAY SILTY SAND TRACE GRAVEL (TILL) ~MEDIUM DENSE~ REFUSAL @ 24.5' PROBABLE BEDROCK	

SAMPLES: D = SPLIT SPOON  
 C = 2" SHELBY TUBE  
 S = 3" SHELBY TUBE  
 U = 3.5" SHELBY TUBE

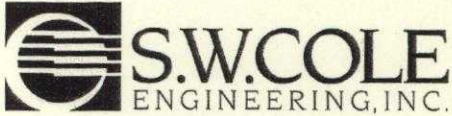
SOIL CLASSIFIED BY:  
 DRILLER - VISUALLY  
 SOIL TECH. - VISUALLY  
 LABORATORY TEST

REMARKS: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

4

BORING NO.: **B-3**





# BORING LOG

BORING NO.: **B-4**  
 SHEET: **1 OF 1**  
 PROJECT NO.: **07-1053.3**  
 DATE START: **12/11/2008**  
 DATE FINISH: **12/11/2008**  
 ELEVATION: **81.5' +/-**  
 SWC REP.: **MPL**

PROJECT / CLIENT: PROPOSED PHARMACY / THE RICHMOND COMPANY, INC.  
 LOCATION: ALLEN & WASHINGTON AVENUES, PORTLAND, ME  
 DRILLING CO.: GREAT WORKS TEST BORING DRILLER: JEFFREY LEE

	TYPE	SIZE	HAMMER WT.	HAMMER FALL
CASING:	HW	4" I.D.	300 lbs	16"
SAMPLER:	SS	1 3/8" I.D.	140 lbs	30"
CORE BARREL:	N/A			

WATER LEVEL INFORMATION  
SOILS APPEAR WET TO SATURATED  
BELOW 10' +/-

CASING BLOWS PER FOOT	SAMPLE				SAMPLER BLOWS PER 6"				DEPTH	STRATA & TEST DATA	
	NO.	PEN.	REC.	DEPTH @ BOT	0-6	6-12	12-18	18-24			
									0.1'	ASPHALT PAVEMENT	
	1D	24"	18"	2.1'	7	12	6	3	1.7'	BROWN GRAVELLY SAND, SOME SILT (FILL)	
										BROWN SILTY CLAY	
										q <sub>p</sub> = 8 ksf ~VERY STIFF~	
	2D	24"	24"	7.0'	7	8	11	14			
										~MEDIUM~ TRANSITIONING TO...	
										...GRAY SILTY CLAY	
	3D	24"	24"	12.0'	1	1	1	1		~MEDIUM TO SOFT~	
	4D	24"	4"	17.0'	WOH/24"						
									18.5'		
										GRAY GRAVELLY SAND, SOME SILT (TILL)	
										~MEDIUM DENSE~	
	5D	24"	14"	22.0'	1	8	9	14	23.0'		
										REFUSAL @ 23.0' PROBABLE BEDROCK	

SAMPLES: D = SPLIT SPOON  
 C = 2" SHELBY TUBE  
 S = 3" SHELBY TUBE  
 U = 3.5" SHELBY TUBE

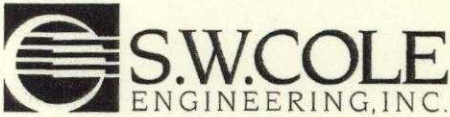
SOIL CLASSIFIED BY:

	DRILLER - VISUALLY
X	SOIL TECH. - VISUALLY
X	LABORATORY TEST

REMARKS: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: **B-4**





# BORING LOG

BORING NO.: **B-5**  
 SHEET: **1 OF 1**  
 PROJECT NO.: **07-1053.3**  
 DATE START: **1/14/2009**  
 DATE FINISH: **1/14/2009**  
 ELEVATION: **81' +/-**  
 SWC REP.: **KBG**

PROJECT / CLIENT: PROPOSED PHARMACY / THE RICHMOND COMPANY, INC.  
 LOCATION: ALLEN & WASHINGTON AVENUES, PORTLAND, ME  
 DRILLING CO.: NORTHERN TEST BORING, INC. DRILLER: MIKE NADEAU

	TYPE	SIZE	HAMMER WT.	HAMMER FALL
CASING:	HW	4" I.D.	300 lbs	16"
SAMPLER:	SS	1 3/8" I.D.	140 lbs	30"
CORE BARREL:	N/A			

WATER LEVEL INFORMATION  
 WATER AT 2.1' [PERCHED WATER TABLE]  
 SOILS APPEARED WET TO SATURATED AT 10' +/-

CASING BLOWS PER FOOT	SAMPLE				SAMPLER BLOWS PER 6"				DEPTH	STRATA & TEST DATA
	NO.	PEN.	REC.	DEPTH @ BOT	0-6	6-12	12-18	18-24		
SSA	1D			0.5'	AUGER FLIGHT SAMPLE				0.1'	1 3/4-INCHES ASPHALT PAVEMENT
TO	2D			1.0'	AUGER FLIGHT SAMPLE				0.7'	
5- FEET	3D	24"	12"	3.0'	5	5	4	6		BROWN GRAVELLY SAND, SOME SILT TO SILTY (FILL)
↓	4D	24"	12"	5.0'	3	6	3	3	4.5'	
10- FEET										BROWN TO GRAY SILTY CLAY WITH OCCASIONAL FINE SAND SEAMS q <sub>p</sub> = 4.0 - 6.0 ksf
CASING	5D	24"	17"	7.0'	2	3	4	5		
↓	6D	24"	15"	9.0'	3	4	6	5		w = 29.4% ~STIFF~ q <sub>p</sub> = 5.0 ksf
↓										
OPEN										
HOLE	7D	24"	10"	12.0'	2	1	2	2	11.5'	w = 39.8% ~MEDIUM~ q <sub>p</sub> = 1.0 - 1.5 ksf
				12.8'						GRAY SILTY CLAY ~MEDIUM~ ~MEDIUM TO SOFT~ w = 44.0% W <sub>L</sub> = 35 W <sub>p</sub> = 17
				13.5'						
	1S	24"	22"	16.0'						
				16.8'						S <sub>v</sub> = .51 / .05 ksf
				17.5'						S <sub>v</sub> = .44 / .04 ksf
↓									19.8'	q <sub>u</sub> = .92 ksf
	8D	23"	18"	21.9'	3	5	8	50/5"	21.9'	GRAY GRAVELLY SAND SOME SILT (TILL) ~MEDIUM DENSE~ REFUSAL @ 21.9' PROBABLE BEDROCK

SAMPLES: D = SPLIT SPOON  
 C = 2" SHELBY TUBE  
 S = 3" SHELBY TUBE  
 U = 3.5" SHELBY TUBE

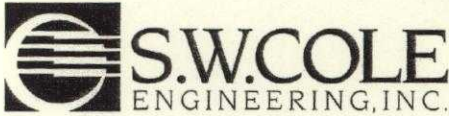
SOIL CLASSIFIED BY:  
 DRILLER - VISUALLY  
 SOIL TECH. - VISUALLY  
 LABORATORY TEST

REMARKS: APPROXIMATELY 12-INCHES OF FROST PRESENT AT TIME OF DRILLING  
 STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

6

BORING NO.: **B-5**





# BORING LOG

BORING NO.: **B-6**  
 SHEET: **1 OF 1**  
 PROJECT NO.: **07-1053.3**  
 DATE START: **12/15/2008**  
 DATE FINISH: **12/15/2008**  
 ELEVATION: **82' +/-**  
 SWC REP.: **MPL**

PROJECT / CLIENT: PROPOSED PHARMACY / THE RICHMOND COMPANY, INC.  
 LOCATION: ALLEN & WASHINGTON AVENUES, PORTLAND, ME  
 DRILLING CO.: GREAT WORKS TEST BORING DRILLER: PETER MICHAUD

CASING: TYPE HSA SIZE 4 1/4" I.D.  
 SAMPLER: TYPE SS SIZE 1 3/8" I.D. HAMMER WT. 140 lbs HAMMER FALL 30"  
 CORE BARREL: N/A

WATER LEVEL INFORMATION  
SOILS APPEAR WET TO SATURATED  
BELOW 10' +/-

CASING BLOWS PER FOOT	SAMPLE				SAMPLER BLOWS PER 6"				DEPTH	STRATA & TEST DATA
	NO.	PEN.	REC.	DEPTH @ BOT	0-6	6-12	12-18	18-24		
									0.1'	ASPHALT PAVEMENT
	1D	24"	10"	3.0'	5	5	4	4	2.5'	BROWN GRAVELLY SAND, SOME SILT (FILL) ~MEDIUM DENSE~
									5.0'	BROWN SILTY CLAY, TRACE GRAVEL (FILL) ~LOOSE TO MEDIUM DENSE~
	2D	24"	20"	7.0'	1	1	3	8		BROWN SILTY CLAY w = 19.6% <span style="float:right">q<sub>p</sub> &gt; 9 ksf</span> ~VERY STIFF~
	3D	24"	24"	12.0'	4	2	2	2		w = 26.2% ~STIFF TO MEDIUM~
	4D	24"	24"	17.0'	1	1	1	1		TRANSITIONING TO... ...OLIVE TO GRAY SILTY CLAY w = 27.3% ~MEDIUM~
									19.5'	
	5D	1"	1"	20.1'	50/1"				20.1'	GRAY SILTY SAND, SOME GRAVEL (TILL) REFUSAL @ 20.1 PROBABLE BEDROCK

SAMPLES: D = SPLIT SPOON  
 C = 2" SHELBY TUBE  
 S = 3" SHELBY TUBE  
 U = 3.5" SHELBY TUBE

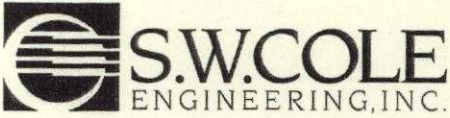
SOIL CLASSIFIED BY:  
 DRILLER - VISUALLY  
 SOIL TECH. - VISUALLY  
 LABORATORY TEST

REMARKS: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

7

BORING NO.: **B-6**





# BORING LOG

BORING NO.: B-7  
 SHEET: 1 OF 1  
 PROJECT NO.: 07-1053.3  
 DATE START: 12/15/2008  
 DATE FINISH: 12/15/2008  
 ELEVATION: 81.5' +/-  
 SWC REP.: MPL

PROJECT / CLIENT: PROPOSED PHARMACY / THE RICHMOND COMPANY, INC.  
 LOCATION: ALLEN & WASHINGTON AVENUES, PORTLAND, ME  
 DRILLING CO.: GREAT WORKS TEST BORING DRILLER: PETER MICHAUD

CASING: TYPE HSA SIZE 4 1/4" I.D.  
 SAMPLER: TYPE SS SIZE 1 3/8" I.D. HAMMER WT. 140 lbs HAMMER FALL 30"  
 CORE BARREL: N/A

WATER LEVEL INFORMATION  
NO FREE WATER OBSERVED

CASING BLOWS PER FOOT	SAMPLE				SAMPLER BLOWS PER 6"				DEPTH	STRATA & TEST DATA
	NO.	PEN.	REC.	DEPTH @ BOT	0-6	6-12	12-18	18-24		
									0.4'	ASPHALT PAVEMENT
	1D	24"	0"	3.0'	10	12	10	5	2.5'	BROWN GRAVELLY SAND, SOME SILT (FILL) ~MEDIUM DENSE~
									5.5'	BROWN SILTY CLAY, SOME SAND ~STIFF~
	2D	12"	10"	6.0'	2	3	30/0"		7.2'	GRAY SILTY SAND, SOME GRAVEL (TILL) ~LOOSE TO MEDIUM DENSE~
										REFUSAL @ 7.2' PROBABLE BEDROCK

NOTE: SPOON REFUSAL AT 6.0', MOVED 4' EAST, AUGER REFUSAL AT 7.2'

SAMPLES: D = SPLIT SPOON  
 C = 2" SHELBY TUBE  
 S = 3" SHELBY TUBE  
 U = 3.5" SHELBY TUBE

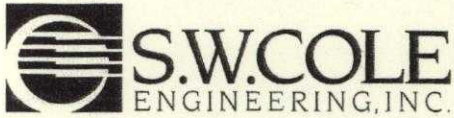
SOIL CLASSIFIED BY:  
 DRILLER - VISUALLY  
 SOIL TECH. - VISUALLY  
 LABORATORY TEST

REMARKS: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

8

BORING NO.: **B-7**





# BORING LOG

BORING NO.: **B-8**  
 SHEET: **1 OF 1**  
 PROJECT NO.: **07-1053.3**  
 DATE START: **12/15/2008**  
 DATE FINISH: **12/15/2008**  
 ELEVATION: **84' +/-**  
 SWC REP.: **MPL**

PROJECT / CLIENT: PROPOSED PHARMACY / THE RICHMOND COMPANY, INC.  
 LOCATION: ALLEN & WASHINGTON AVENUES, PORTLAND, ME  
 DRILLING CO.: GREAT WORKS TEST BORING DRILLER: PETER MICHAUD

CASING: TYPE HSA SIZE 4 1/4" I.D.  
 SAMPLER: TYPE SS SIZE 1 3/8" I.D. HAMMER WT. 140 lbs HAMMER FALL 30"  
 CORE BARREL: N/A

WATER LEVEL INFORMATION  
NO FREE WATER OBSERVED

CASING BLOWS PER FOOT	SAMPLE				SAMPLER BLOWS PER 6"				DEPTH	STRATA & TEST DATA
	NO.	PEN.	REC.	DEPTH @ BOT	0-6	6-12	12-18	18-24		
									0.3'	ASPHALT PAVEMENT
									2.0'	BROWN GRAVELLY SAND, SOME SILT (FILL)
	1D	24"	19"	3.0'	4	3	3	3		BROWN SILTY CLAY ~STIFF~
	2D	24"	22"	5.0'	3	7	8	11		
	3D	24"	24"	7.0'	8	10	11	13	7.0'	
										BOTTOM OF EXPLORATION @ 7.0'

SAMPLES:  
 D = SPLIT SPOON  
 C = 2" SHELBY TUBE  
 S = 3" SHELBY TUBE  
 U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:  
 DRILLER - VISUALLY  
 SOIL TECH. - VISUALLY  
 LABORATORY TEST

REMARKS:  
 STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.



## BORING LOG

PROJECT / CLIENT: PROPOSED PHARMACY / THE RICHMOND COMPANY, INC.  
 LOCATION: ALLEN & WASHINGTON AVENUES, PORTLAND, ME  
 DRILLING CO.: GREAT WORKS TEST BORING DRILLER: PETER MICHAUD

BORING NO.: B-9  
 SHEET: 1 OF 1  
 PROJECT NO.: 07-1053.3  
 DATE START: 12/15/2008  
 DATE FINISH: 12/15/2008  
 ELEVATION: 84' +/-  
 SWC REP.: MPL

CASING: TYPE HSA SIZE 4 1/4" I.D.  
 SAMPLER: SS 1 3/8" I.D. 140 lbs 30"  
 CORE BARREL: N/A

WATER LEVEL INFORMATION  
NO FREE WATER OBSERVED

CASING BLOWS PER FOOT	SAMPLE				SAMPLER BLOWS PER 6"				DEPTH	STRATA & TEST DATA
	NO.	PEN.	REC.	DEPTH @ BOT	0-6	6-12	12-18	18-24		
									0.3'	ASPHALT PAVEMENT
	1D	24"	17"	3.0'	6	4	3	2	4.0'	BROWN GRAVELLY SAND, SOME SILT (FILL) ~LOOSE TO MEDIUM DENSE~
	2D	24"	14"	5.0'	2	2	3	4	7.0'	BROWN SILTY CLAY ~STIFF~
	3D	24"	20"	7.0'	6	7	8	10		BOTTOM OF EXPLORATION @ 7.0'

SAMPLES:  
 D = SPLIT SPOON  
 C = 2" SHELBY TUBE  
 S = 3" SHELBY TUBE  
 U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:  
 DRILLER - VISUALLY  
 SOIL TECH. - VISUALLY  
 LABORATORY TEST

REMARKS:  
 STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.





# BORING LOG

BORING NO.: **B-10**  
 SHEET: 1 OF 1  
 PROJECT NO.: 07-1053.3  
 DATE START: 12/15/2008  
 DATE FINISH: 12/15/2008  
 ELEVATION: 81' +/-  
 SWC REP.: MPL

PROJECT / CLIENT: PROPOSED PHARMACY / THE RICHMOND COMPANY, INC.  
 LOCATION: ALLEN & WASHINGTON AVENUES, PORTLAND, ME  
 DRILLING CO.: GREAT WORKS TEST BORING DRILLER: PETER MICHAUD

CASING: TYPE HSA SIZE 4 1/4" I.D.  
 SAMPLER: TYPE SS SIZE 1 3/8" I.D. HAMMER WT. 140 lbs HAMMER FALL 30"  
 CORE BARREL: N/A

WATER LEVEL INFORMATION  
NO FREE WATER OBSERVED

CASING BLOWS PER FOOT	SAMPLE				SAMPLER BLOWS PER 6"				DEPTH	STRATA & TEST DATA
	NO.	PEN.	REC.	DEPTH @ BOT	0-6	6-12	12-18	18-24		
									0.2'	TOPSOIL (FILL)
	1D	24"	10"	3.0'	2	2	2	2		GRAY SILTY CLAY, TRACE GRAVEL, TRACE GLASS (FILL) ~LOOSE~
	2D	24"	2"	5.0'	3	3	4	4		
	3D	24"	22"	7.0'	4	4	5	8	5.5'	~STIFF~
									7.0'	BROWN SILTY CLAY BOTTOM OF EXPLORATION @ 7.0'

SAMPLES: D = SPLIT SPOON  
 C = 2" SHELBY TUBE  
 S = 3" SHELBY TUBE  
 U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:  
 DRILLER - VISUALLY  
 SOIL TECH. - VISUALLY  
 LABORATORY TEST

REMARKS:  
 STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.



# BORING LOG

BORING NO.: **B-11**  
 SHEET: **1 OF 1**  
 PROJECT NO.: **07-1053.3**  
 DATE START: **12/15/2008**  
 DATE FINISH: **12/15/2008**  
 ELEVATION: **81.5' +/-**  
 SWC REP.: **MPL**

PROJECT / CLIENT: PROPOSED PHARMACY / THE RICHMOND COMPANY, INC.  
 LOCATION: ALLEN & WASHINGTON AVENUES, PORTLAND, ME  
 DRILLING CO.: GREAT WORKS TEST BORING DRILLER: PETER MICHAUD

CASING: TYPE SSA SIZE 4 1/4" I.D.  
 SAMPLER: TYPE SS SIZE 1 3/8" I.D. HAMMER WT. 140 lbs HAMMER FALL 30"  
 CORE BARREL: N/A

WATER LEVEL INFORMATION  
NO FREE WATER OBSERVED

CASING BLOWS PER FOOT	SAMPLE				SAMPLER BLOWS PER 6"				DEPTH	STRATA & TEST DATA
	NO.	PEN.	REC.	DEPTH @ BOT	0-6	6-12	12-18	18-24		
									0.3'	ASPHALT PAVEMENT
									1.5'	BROWN GRAVELLY SAND, SOME SILT (FILL)
	1D	24"	19"	3.0'	6	5	5	6		BROWN SILTY CLAY  ~STIFF~
	2D	24"	24"	7.0'	3	6	8	11		
									9.0'	BOTTOM OF EXPLORATION @ 9.0'
	3D	24"	20"	9.0'	7	10	11	12		

SAMPLES: D = SPLIT SPOON C = 2" SHELBY TUBE S = 3" SHELBY TUBE U = 3.5" SHELBY TUBE	SOIL CLASSIFIED BY: <input type="checkbox"/> DRILLER - VISUALLY <input checked="" type="checkbox"/> SOIL TECH. - VISUALLY <input type="checkbox"/> LABORATORY TEST	REMARKS: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.	<div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">12</div>	BORING NO.: <b>B-11</b>
---	---	---	--	-------------------------



## **KEY TO THE NOTES & SYMBOLS**

### **Test Boring and Test Pit Explorations**

All stratification lines represent the approximate boundary between soil types and the transition may be gradual.

#### **Key to Symbols Used:**

w	-	water content, percent (dry weight basis)
q <sub>u</sub>	-	unconfined compressive strength, kips/sq. ft. - based on laboratory unconfined compressive test
S <sub>v</sub>	-	field vane shear strength, kips/sq. ft.
L <sub>v</sub>	-	lab vane shear strength, kips/sq. ft.
q <sub>p</sub>	-	unconfined compressive strength, kips/sq. ft. based on pocket penetrometer test
O	-	organic content, percent (dry weight basis)
W <sub>L</sub>	-	liquid limit - Atterberg test
W <sub>P</sub>	-	plastic limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on drill
RQD	-	Rock Quality Designator - an index of the quality of a rock mass. RQD is computed from recovered core samples.
γ <sub>T</sub>	-	total soil weight
γ <sub>B</sub>	-	buoyant soil weight
f	-	finest content (percent by weight passing U.S. No. 200 Sieve)

#### **Description of Proportions:**

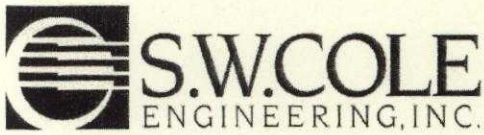
0 to 5% TRACE  
5 to 12% SOME  
12 to 35% "Y"  
35+% AND

**REFUSAL: Test Boring Explorations** - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

**REFUSAL: Test Pit Explorations** - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.





# Report of Gradation

ASTM C-117 & C-136

Project Name PORTLAND ME - PROPOSED WALGREENS - GEOTECHNICAL  
ENGINEERING SERVICES

Project Number 07-1053.3

Client THE RICHMOND COMPANY, INC.

Lab ID 10009G

Date Received 12/15/2008

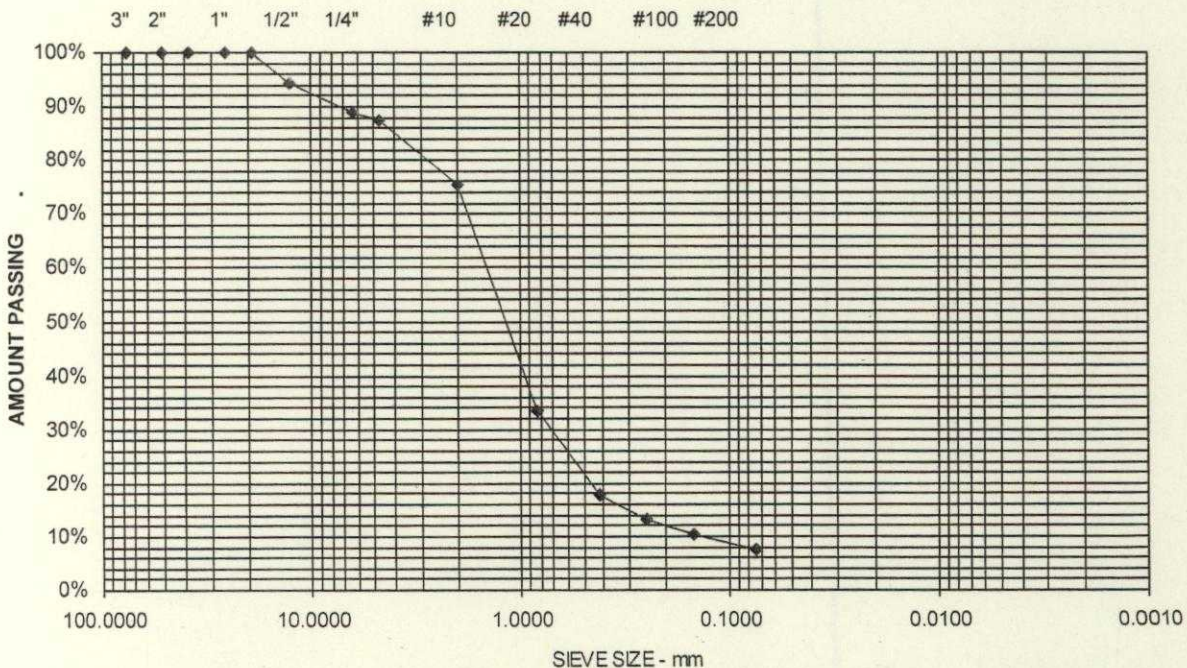
Date Completed 12/16/2008

Material Source B-3 1D 0.1-2.1

Tested By JUSTIN BISSON

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
150 mm	6"	100	
125 mm	5"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	100	
12.5 mm	1/2"	94	
6.3 mm	1/4"	89	
4.75 mm	No. 4	87	12.6% Gravel
2.00 mm	No. 10	75	
850 μm	No. 20	33	
425 μm	No. 40	18	79.9% Sand
250 μm	No. 60	13	
150 μm	No. 100	10	
75 μm	No. 200	7.4	7.4% Fines

GRAVELLY SAND, SOME SILT



Comments:



Project Name PORTLAND ME - PROPOSED WALGREENS - GEOTECHNICAL  
ENGINEERING SERVICES

Project Number 07-1053.3

Client THE RICHMOND COMPANY, INC.

Lab ID 10013G

Date Received 12/15/2008

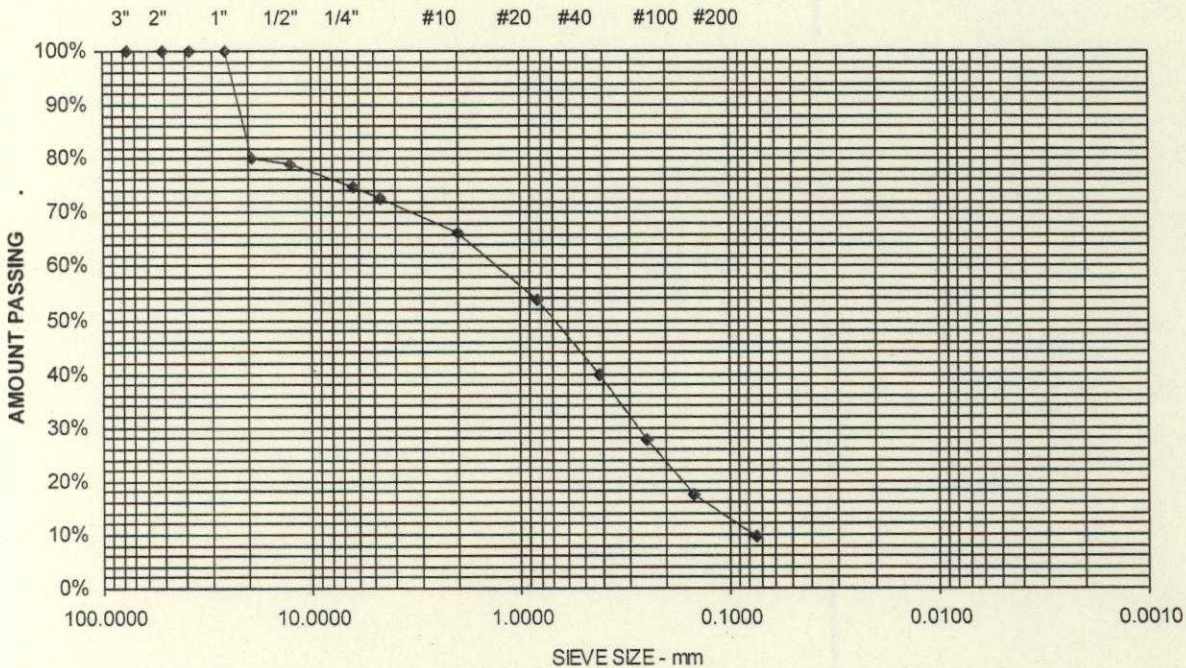
Date Completed 12/16/2008

Material Source B-4 1D 0.1-2.1

Tested By JUSTIN BISSON

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
150 mm	6"	100	
125 mm	5"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	80	
12.5 mm	1/2"	79	
6.3 mm	1/4"	75	
4.75 mm	No. 4	72	27.5% Gravel
2.00 mm	No. 10	66	
850 μm	No. 20	54	
425 μm	No. 40	40	62.9% Sand
250 μm	No. 60	28	
150 μm	No. 100	17	
75 μm	No. 200	9.6	9.6% Fines

**GRAVELLY SAND, SOME SILT**





Project Name PORTLAND ME - PROPOSED WALGREENS - GEOTECHNICAL  
ENGINEERING SERVICES

Project Number 07-1053.3

Client THE RICHMOND COMPANY, INC.

Lab ID 10014G

Date Received 12/15/2008

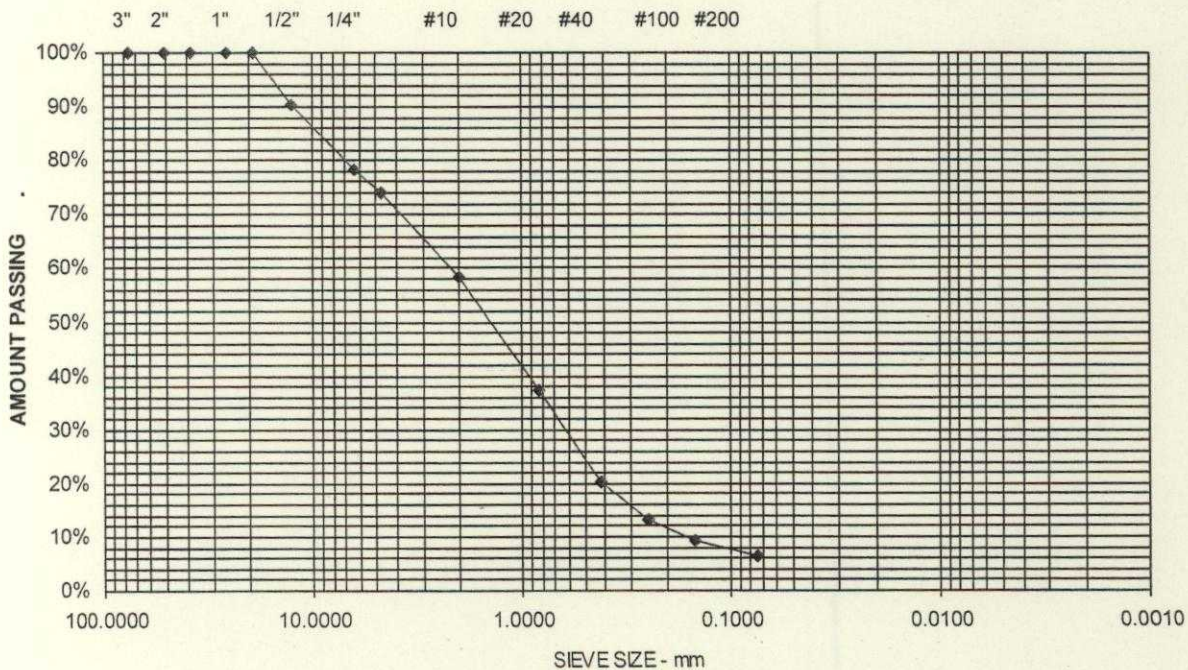
Date Completed 12/16/2008

Material Source B-5 1D 0.1-2.1

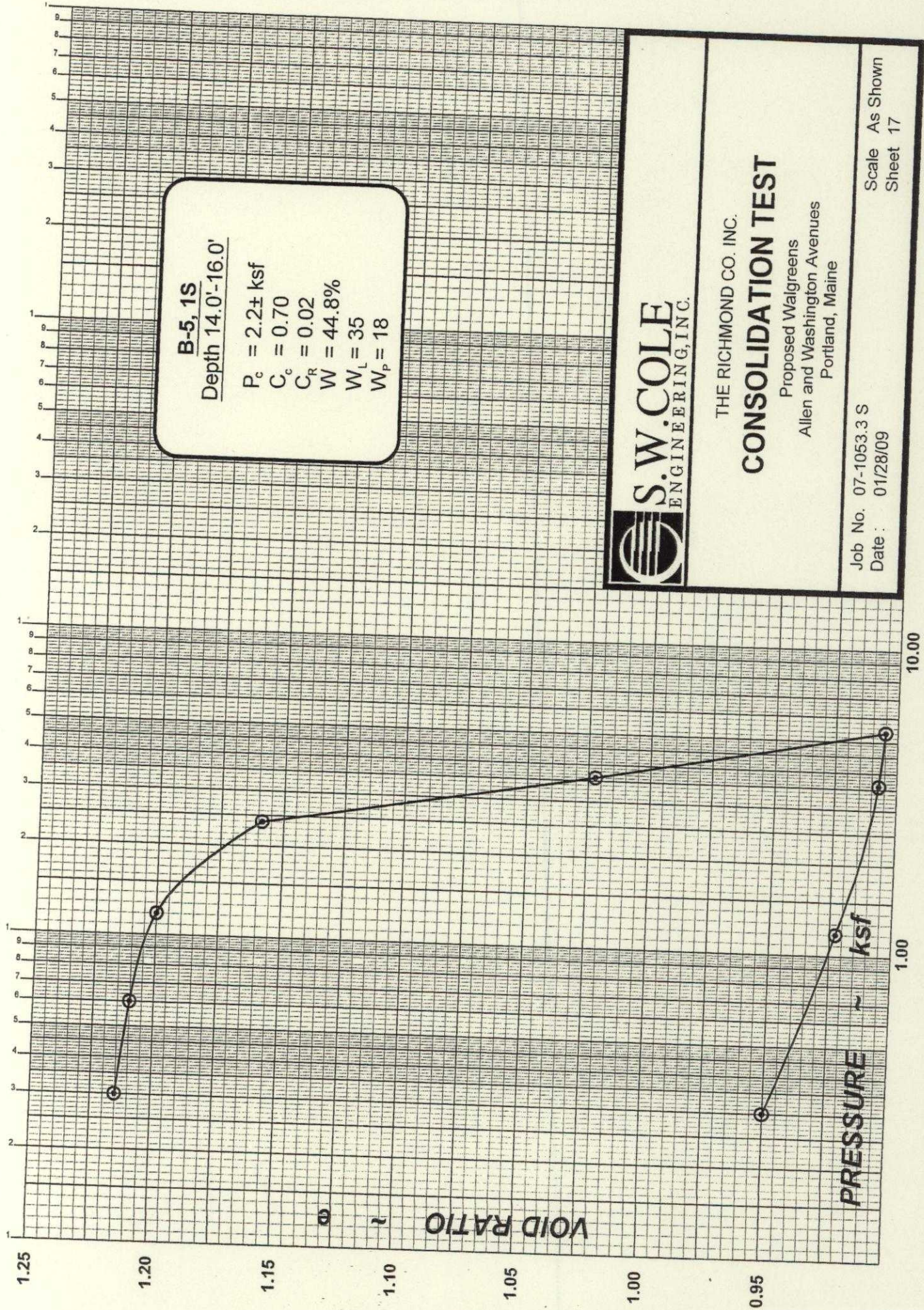
Tested By JUSTIN BISSON

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
150 mm	6"	100	
125 mm	5"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	100	
12.5 mm	1/2"	90	
6.3 mm	1/4"	78	
4.75 mm	No. 4	74	26.2% Gravel
2.00 mm	No. 10	58	
850 μm	No. 20	38	
425 μm	No. 40	20	67.5% Sand
250 μm	No. 60	13	
150 μm	No. 100	9	
75 μm	No. 200	6.3	6.3% Fines

**GRAVELLY SAND, SOME SILT**







**S.W. COLE**  
ENGINEERING, INC.

THE RICHMOND CO. INC.

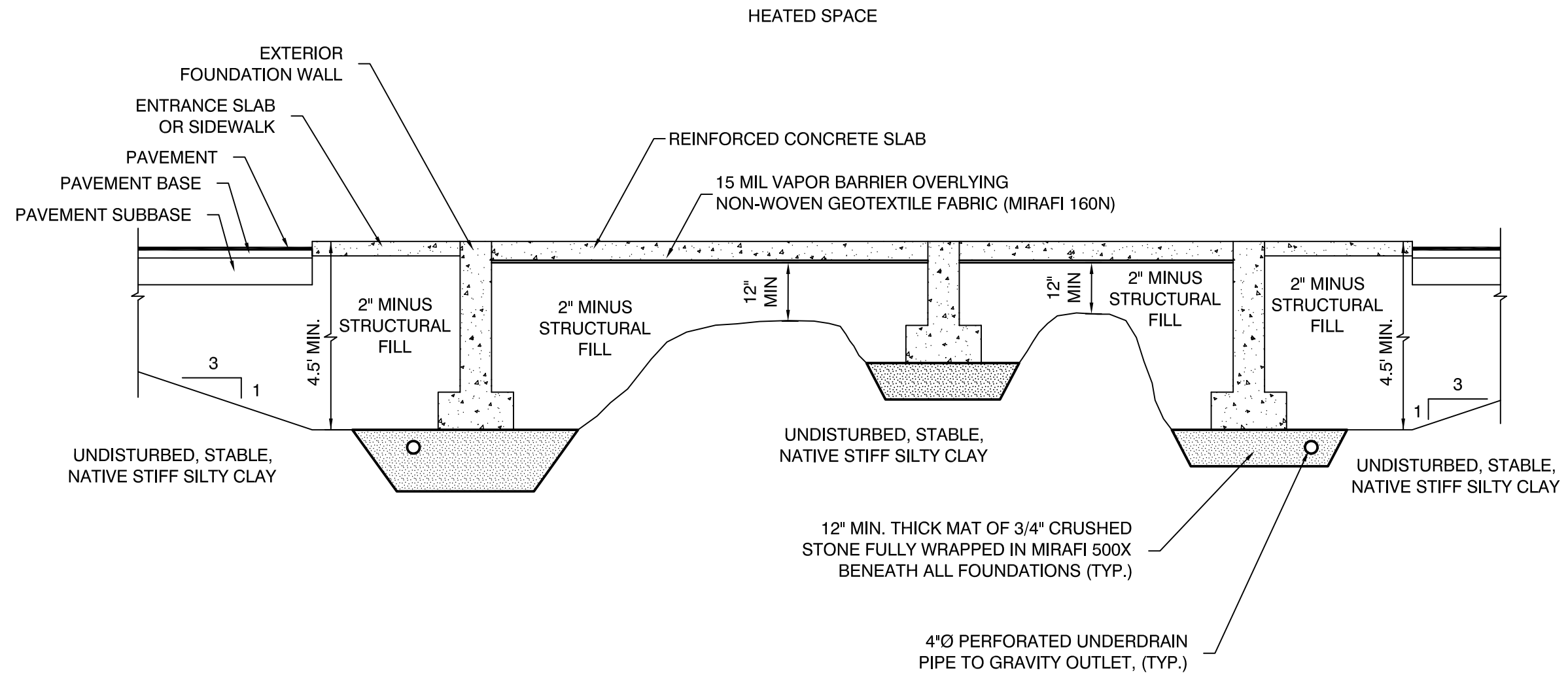
**CONSOLIDATION TEST**

Proposed Walgreens  
 Allen and Washington Avenues  
 Portland, Maine

Job No. 07-1053.3 S  
 Date: 01/28/09

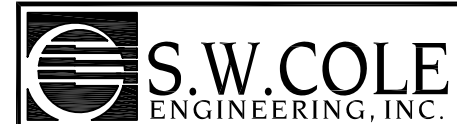
Scale As Shown  
 Sheet 17





**NOTE:**

1. UNDERDRAIN INSTALLATION AND MATERIAL GRADATION AND COMPACTION RECOMMENDATIONS ARE CONTAINED WITHIN THIS REPORT.
2. DETAIL IS PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY, NOT FOR CONSTRUCTION.
3. GEOTEXTILE FABRIC SUCH AS MIAFI 500X MAY BE NEEDED ON SOME SUBGRADE AREAS PRIOR TO PLACING NEW FILL.



THE RICHMOND COMPANY  
**UNDERDRAIN AND FOUNDATION DETAIL**

PROPOSED WALGREEN PHARMACY  
 ALLEN AVENUE AND WASHINGTON AVENUE  
 PORTLAND, MAINE

Job No.	07-1053.3	Scale	Not to Scale
Date :	01/16/09	Sheet	18





## Punch list for Store #

Date:

### PRECONSTRUCTION REQUIREMENTS

1. The developer or general contractor shall call Walgreens sign contractor to install a "Walgreens coming soon" sign(s) as soon as the site is occupied. The sign(s) shall be installed at least 4' off the ground.
2. The sign contractor are assigned by state:
  - **Icon – Midwest** at 800-633-8181 for: AL, FL, GA, IL, IN, MI, SC, TN, & PR.
  - **Icon – East Coast** at 800-355-3272 for: CT, KY, MA, MD, NC, NH, NJ, NY, OH, PA, RI, & VA.
  - **Fluoresco** at 800-470-1711 for: AZ, CA, CO, ID, KS, MT, ND, NE, NM, NV, OK, OR, SD, TX, UT, WA, & WY.
  - **Kieffer & Co.** at 877-543-3337 for: AR, IA, LA, MN, MO, MS, & WI.
3. Provide the Walgreen's Construction Department (847-315-4300) with the name, phone, e-mail and fax numbers of the general contractors office as well as site superintendent and jobsite information.
4. Provide the **Exact** permanent building address to Walgreen's Construction Department as soon as it is received.
5. E-mail or fax weekly construction progress updates to 847-315-4425 to the respective Walgreen Project manager.
6. A set of Walgreens' Criteria Drawings & Specifications are **required** to be available on all job sites per the Lease/purchase agreement. (Call the developer's Architect for a copy). **T0.1**
7. A copy of approved Walgreen construction bulletins to be implemented in the project **shall be kept on site**.
8. Material or equipment indicated by manufacture's name indicates Walgreens' preference and expected quality and installation. Substitutions are **NOT ACCEPTABLE** without prior Walgreens' approval. To be considered, requests for substitutions must include a point-by-point comparison between the proposed substitute and the specified manufacturer and model. The comparison must confirm that the proposed substitute is equal to or exceeds the quality of the specified products. Incomplete submittals will not be considered. Requests resulting from failure to allow sufficient time to order and receive material will not be considered.

### EXTERIOR

9. Provide and install a minimum of two (2) 1" diameter PVC conduits to pylon signs to separate data cable and power circuits. Provide a 2'0" separation between conduits. Provide pull string for data conduit.
10. All damaged **city sidewalks** are to be replaced regardless if the damage occurred before construction. All unused curb cuts are eliminated.
11. Assure all exterior "Knox Box", fire alarm panels, pull stations, etc. are **recessed type**.
12. Unless required otherwise pavement striping should be yellow and have thickness specified. Pavement lettering should be 24" in height and elongated. This will require two applications of the paint.
13. Provide and install traffic directional signs on a 2"x 2" galvanized steel tube set in a 4" pipe bollard filled with concrete and painted yellow, per detail 11 of drawing C0.0.
14. Protective bollards and HP Parking tubes should be filled with concrete.
15. Landscaping shall be low maintenance and low height. Bark mulch is not considered low maintenance and ground covers are preferred and required in most cases.
16. Provide and install **SOD, not seed**. The **SOD** shall be viable, not dormant. **SOD** shall be installed flat.
17. Provide and install mulch at least 2" deep in landscape areas utilizing wood chips or similar material (omit **weed fabric** in landscape beds with groundcover plantings).
18. Rock is prohibited in landscape areas (if rock is required around a transformer, "pea-stone" is preferred).
19. Provide and install the irrigation system with a **separate water meter** regardless if the meter cannot be used as a deduct meter.
20. Provide and install the irrigation controls inside the building (exposed irrigation system piping outside of the building is **prohibited**). All piping must be underground (this means provide a sleeve in the foundation wall).
21. Provide and install the electrical service to the building via underground (overhead lines are prohibited on site).
22. Assure lighting poles are a minimum of 10' from the power lines.



23. In residential areas provide shields on parking light fixtures abutting property lines to prevent light trespass.
24. Assure all temporary power, telephone lines and poles are removed from the site as soon as possible.
25. Assure sprinkler head and irrigation control valve boxes are set down to prevent damage by lawn mowers.
26. Unless indicated to remain, all trees shrubs etc shall be removed including stumps. Limbs from adjoining properties overhanging the building parking areas etc shall be trimmed back.
27. Assure catch basins, and inlets are clean on date of possession.
28. Provide self-leveling caulk at all concrete expansion joints, detectable warnings and including perimeter sidewalks.
29. Provide and install clean-out covers flush with adjacent surfaces and securely fastened.
30. Assure all concrete light pole bases, curbs, retaining walls, etc. have a smooth consistent finish free from all form marks. Light pole bases should be crowned to shed water and water should not collect around bolt settings.
31. Provide and install ADA compliant handicap curb ramps, parking spaces and accessible routes including detectable warning surfaces.
32. Assure the parking lot and sidewalks are clean including snow removal on day of possession.
33. Provide and install insulated glass in the bulkhead windows and storefront (single light ¼" glass is only allowed in the doors, all other glass is to be 1" insulated). All storefront glass is to be **tinted**. The amount of tinting including transom glass tinting requirements should be carefully checked with the geographical and orientation and location of the building.
34. Provide power outage emergency override device at entrance when security grille or storm shutter at entrance has been installed.

#### **EXTERIOR DRIVE-THRU**

35. Provide and install all bollards and delineation posts shown on the drive-through detail plan. Delineation posts should be **bolted** not glued down.
36. Confirm drive alert sensor has been installed and properly functioning ( Developers electrical contractor).
37. Assure double drive through sign is installed. (Walgreen item)
38. Assure drive through canopy height clearance sign is installed. (Walgreen item)
39. Provide and install caulking around the interior and exterior of the drive-through window.
40. This area shall not be constructed in such a way that water is retained in the drive through area.

#### **EXTERIOR RECEIVING**

41. Assure all wall penetrations are sealed and caulked as necessary (pipes, conduits, etc.).
42. Assure top and bottom edges of exterior doors are closed constructed. These doors and frames should be galvanized and hinges should have non removable pins.
43. Provide and install rain shields over the exterior service doors, receiving doors, and compactor chutes.
44. Assure threshold at the receiving door provides proper drainage away from the door. (**Note FF elevation compared to exterior slab elevation at this location**)
45. Roll up door requirements should be carefully followed.
46. Provide and install doorbell at the receiving door with bell in stockroom and chime over the primary checkout register. (Edwards #744, #590 transformer, #1785 push button, chime #C210)
47. Assure dumpster enclosure posts are **filled with concrete**.
48. Assure Provide and install **non-removable galvanized** cane bolts on all exterior gates (both sides) with hold open holes for the open and closed position. ( gate leafs over 4' shall have **three hinges**)
49. Assure site is clear of all debris, construction materials, grading stakes, realty and construction related signage at the time of turn over.
50. Assure all wood fence posts, guard rail posts, D.O.T guard rail posts, handrails, traffic control sign posts are **galvanized steel set in concrete** (wood posts of ANY kind set in concrete are prohibited). All exterior wood fences and enclosures are **sealed**.
51. Assure all gutters, downspouts, flashing and coping are **pre-finished** (field painted products are prohibited).
52. Provide and install ⅛" thick bent steel plate to protect downspouts. These plates should be bolted to the masonry and painted per plan.

53. Provide and install a clean transition between the downspouts and storm sewer leaders with color to match down spout. All Downspouts are to be connected to the storm drainage system.

### **GENERAL SALES**

54. Provide and install caulking on all four sides of the storefront window, frames and door package.
55. Assure CCTV system outlet and support bracket are installed above the ceiling above the front entrance.
56. Provide and install HVAC diffusers in office, employee room, and pharmacy with **opposed blade dampers** and air pattern deflectors. All diffusers are constructed of **100% aluminum**.
57. Assure HVAC thermostat sensors are **labeled** and located on the rear surface of the columns (least visible from the front of the store). Sensors should be mounted to appropriate mounting block, electrical boxes screwed to columns are unacceptable.
58. Provide and install low voltage wires **inside** of the sales area columns (do not install exposed conduit to sensors). All sensor wire should be **18 gauge-shielded**.
59. Provide and install **2"** foil faced external insulation over **all** galvanized sheet metal HVAC ducts (internal duct insulation or duct board is prohibited). This includes but not limited to the diffuser boxes, transfer ducts, supply and exhaust ducts.
60. Provide and install **hard elbows** on end of branch line at flex duct connection (**flex duct is not allowed to form 90-degree radius bends**).
61. Assure the interior of return air ducts visible from the sales floor are painted black.
62. Provide and install "two No. 12 gauge wire hangers attached at diagonal corners" on each light fixture including emergency lights in all acoustical ceilings.
63. Assure top and bottom of stainless steel column wraps are caulked (stainless steel column wraps are to be 4' high with no horizontal joint).
64. Assure any damaged or stained ceiling tiles are replaced (leave 2 bundles of ceiling tiles in the store).
65. All sprinkler heads are to have **White finish** not Chrome.
66. Provide and install drywall control joints from floor to deck at 32' maximum on center on all walls including in the stockroom.
67. Provide and install flattened steel expanded mesh **¼" X 16 GA.** minimum behind gypsum wallboard where demising walls are security type.
68. Provide and install reducer strips at all floor vinyl to concrete thresholds (stockroom doors off general sales area and electrical room).
69. Assure all wood doors are painted on all six sides (all metal frames shall be welded). Door spec should be carefully followed. Door window frames should be constructed of metal.
70. Provide and install protection plates with "wrap around door edges" on doors leading into passage #1, passage #2, and stockroom. All door vision panels facing the sales floor should have **one-way glass**.
71. Provide and install "H" dividers between the security mirrors. Mirrors are to be glued (see **detail A4.1**).
72. Provide and install vinyl base at checkouts, cosmetic bullpen, cosmetic gondolas, walk-in cooler and all wood based fixtures, etc.

### **1 HOUR PHOTO**

73. Follow the piping and wiring schematic exactly for this area.
74. Assure the waste piping for the photo sink is PVC with a ½" tee at 15" A.F.F. maximum.
75. Assure sink is anchored to wall and mixing valve is located above the ceiling.
76. Eye wash temperature is to be set at 83 degrees F.
77. A smooth flat tray sink is with no soap dishes in the only acceptable sink, please refer to the specifications.

### **OFFICE**

78. All thermostats in the Manager's office and sensors labeled to correspond with rooftop disconnect labels.
79. The door window frame for this room should be installed with screws on the outside of the door.

### **TRAINING ROOM/PASSAGE #2**

80. Provide and install stainless steel corner guards on cooler wall (typical).
81. Provide and install funnel at cooler drain (insulate the drain line from the cooler to the drain).

### WALK-IN COOLER/FREEZER

82. Assure the electrical penetrations through the cooler and freezer walls are **sealed inside and out**. This includes sealing inside the conduits and electrical boxes.
83. The floor area of the cooler should be sealed prior to turn over.
84. Assure the freezer alarm sensor is run into the freezer and the unit is functioning properly and programmed. (Walgreen item)
85. Provide and install the drain line heater on the walk-in freezer condensate drain lines.
86. Assure all lighting is installed inside of the cooler/freezer (refer to installation guide for two "Jelly jar" lights)
87. Provide and install 24" Viking brand dry sprinkler heads in cooler/freezer per detail. (FP1.1)
88. Install dry pendant boot kit on sprinkler heads per plan.

### STOCKROOM

89. Assure all exposed concrete floors including the stockroom and electrical room floor are cleaned and hardener applied. No cure and seal products etc. should be installed at the time of slab placement.
90. Provide and install water, gas and sprinkler lines up to or into the bar joist, so they do not conflict with the merchandise stored in the stockroom.
91. Assure the stockroom lighting is installed a **minimum** of 14' A.F.F. and centered in aisles.
92. Provide and install the roll-up receiving door with chain and cover on the opposite side of the nest-a-flex conveyor (D1, note 28).
93. Provide and install vinyl base in the stockroom.
94. Provide and install peepholes, door sweeps, thresholds, and weather-stripping and security bars at the service doors. Assure final adjustments of exit panic hardware and confirm operation.
95. Assure the HVAC controls, emergency lights, speakers and wall switches are not installed where they interfere with wall shelving or merchandise.
96. Provide and install the emergency lights on the bar joist, or wall locations (above doorways) not conflicting with the shelving or merchandise. (Emergency lights shall not be located above merchandise shelving)
97. Provide and install a spare sprinkler heads cabinet with 12 heads, one 24" Viking brand dry pendant, escutcheons, and a head **wrench** with **socket**.
98. Provide and installed a typed **directory** and zone map at the irrigation controls listing the zones and times of operation.

### ELECTRICAL

99. Provide and install engraved plastic labels on all electrical panels.
100. Feeders for each panel shall not be combined in a trough or run with branch circuits (refer to plan diagram).
101. Assure the conduit at the telephone cable entrance is sealed and trough installed for same.
102. Assure only cash registers, computers, satellite equipment, telephones, fire alarm panel, and pill counter circuits are installed in the LP-CR panel.
103. Provide and install lock-on hardware on emergency lights, refrigeration, Rx refrigerator, alarms, timers, night-lights and all circuits in LP-CR panel. Assure **all spare** circuits are **locked** in the "**off**" position.
104. Provide and install an accurate and typed schedule for each electrical panel and fire alarm panel. Include name and phone number of the monitoring company, and the local fire department. Include the access code on the inside of the panel.
105. Assure LP-CR circuits have a separate hot and neutral wires pulled for each circuit. Do not combine clean and dirty power in anyway.
106. Assure the electrical service has a redundant ground (see drawing E2.1 Detail 5). Assure proper ground to building steel and ground rod with Cad-welding. Provide jumper at water meter if used as ground.
107. Assure all transient voltage surge suppressors receptacles are Pass and Seymour and Ivory in color.
108. Assure all exposed wires not in conduit are tie-wrapped neatly.
109. Assure room is cleaned and all construction debris removed.



- 110. Provide and install PVC tube for as-built plans. (Walgreens item)
- 111. Complete the independent electrical inspection punch list.

### **PHARMACY**

- 112. Assure required dead bolt locks are installed on pharmacy doors.
- 113. Assure plastic bushings are provided where necessary for low voltage wiring.
- 114. Assure the masonry opening above the drive-through window for tube or track system are sealed and secure.
- 115. Assure the drive-through window and counter top is caulked.
- 116. Assure the drive-through sensor, controls and chime are in working order. The sensor shall not ring when a car drives in the pass-by lane. Mount the chime on the wall above the drive-through window, not in the cabinet.
- 117. Confirm conveyor disconnects switches are wired per plan.

### **PASSAGE #1 / STORAGE ROOM / PORTER'S CLOSET**

- 118. There should be no exposed piping in this closet other than stub outs to the floor sink.
- 119. Provide and install 2 shelves in the porter's closet. (Plastic coated wire is preferred)
- 120. Provide and install roof ladder complying with plans.
- 121. Top wrung of ladder should not be more than 12 inches from the top edge of the roof hatch. (Refer to detail and OSHA compliance regulations CFR 29)
- 122. Provide and install ladder up safety device on the roof scuttle ladder.
- 123. Assure all panic hardware on exit doors are functioning.
- 124. Provide and install corner guards at all outside corners typical.
- 125. Provide and install weather stripping around exit doors.
- 126. Provide and install hydraulic test results on a metal plate hung on sprinkler riser with chain.
- 127. Provide and install a typed directory in the irrigation controls listing the zones and times of operation on an 8.5" x 11" minimum size display attached to the wall.

### **EMPLOYEE ROOM**

- 128. Provide and install a switched GFI duplex receptacle with a pilot light above the countertop.
- 129. Provide and install opposed blade damper and air pattern deflector diffuser.
- 130. Assure the lavatory drain and supply lines are insulated per ADA requirements.
- 131. Provide and install caulking at counter and back-splash.

### **MENS WASHROOM**

- 132. Assure ADA compliant signage is installed on wall adjacent to door.
- 133. Assure sanitary ceramic wall base is installed prior to the ceramic floor tile. **(Do not install base on top of tile)**
- 134. Provide proper slope to all floor drains and assure floor grout is sealed.
- 135. Assure the lavatory drains and supply lines are insulated per ADA requirements.
- 136. Assure FRP is installed with the FRP resting on top of ceramic base with all trim **(Do not install the ceramic base over the FRP)**. Caulk the top and bottom joints of the FRP.
- 137. Caulk base of toilet, sink, urinal, and mirror at wall.
- 138. Assure **head rails** and **pull handles** are installed on restroom partitions.

### **WOMENS WASHROOM**

- 139. Assure ADA compliant signage is installed on wall adjacent to door.
- 140. Assure sanitary ceramic wall base is installed prior to the ceramic floor tile. **(Do not install base on top of tile)**
- 141. Provide proper slope to all drains assure floor grout is sealed.
- 142. Assure the **both** lavatories drains and supply lines are insulated per ADA requirements.
- 143. Assure FRP is installed with the FRP resting on top of ceramic base with all trim **(Do not install the ceramic base over the FRP)**. Caulk the top and bottom joints of the FRP.

- 144. Caulk base of toilets, sinks, and mirrors at wall.
- 145. Assure head rails and pull handles are installed on restroom partitions.

### **PLUMBING**

- 146. Provide and install-specified insulation on the hot and cold water lines, condensate drains and roof drain leaders. With correct hangers and joint treatment.
- 147. Assure **all** valves are ball type. (This includes fixtures such as sinks and toilets commonly referred to as quarter turn vales for this application).
- 148. Assure water service piping passing through concrete is sleeved.
- 149. Provide and install required trap primers inside of the walls with lockable access panels.
- 150. Assure all clean-outs and floor drains are flush with surrounding floor surface.
- 151. Provide and install a pressure-reducing valve on the main domestic service line set for 65 PSI.

### **ROOF**

- 152. Assure all portals penetrations are caulked and banded.
- 153. Provide and install a post hydrant on the roof with specified curb. (Do not install hydrant with concrete accessory **READ THE INSTUCTIONS**)
- 154. Assure all gas line rubber grommets are installed at unit penetration points. (**Do not cut grommets**)
- 155. Assure all natural gas lines run inside of the building until reaching the HVAC units.
- 156. Provide and install HVAC gas lines within the curb and through the base of the unit. (Refer to manufactures cut sheets.) Provide and install external gas shut off valves on all rooftop units.
- 157. Assure gas lines do not interfere with the removal of any access panels.
- 158. Provide and install disconnects with phenolic labels at all rooftop units including the cooler and freezer condensers.
- 159. Provide and install insulation around conduit and piping at full height of the refrigeration curbs with fiberglass batt type insulation.
- 160. Provide and install 2” thickness of insulation on the refrigeration piping with adhesive. (Walgreens refrigeration contractor)
- 161. Provide and install refrigeration insulation with UV protective finish. Duct tape is prohibited to secure refrigeration insulation. (Walgreens refrigeration contractor)
- 162. Assure all construction debris is removed from the roof.
- 163. Assure the Costgard device is installed where required on rooftop equipment.
- 164. Provide and install splash blocks at all condensate lines and down spouts.
- 165. Provide and install adequate support of condensate lines (“zip ties” and straphangers are unacceptable).
- 166. Assure all rooftop outlets have GFCI receptacles and are “rain tight while in use” type Taymac #10510.
- 167. Assure the roof ventilators are secured to the curbs.
- 168. Assure walk pads are installed around **all** rooftop equipment including the satellite dish, roof hatch, tower door, and refrigeration equipment.
- 169. Assure the roof hatch, ladder, gas pipes and satellite mast are painted.
- 170. Pitch pockets are **prohibited**.
- 171. Assure all roof top disconnects are labeled (RTU1, RTU 2, etc.) corresponding with thermostats and sensors.
- 172. Complete roof consultant’s punch list.

### **GLASS TOWER**

- 173. Provide and install locking and pull hardware.
- 174. Provide and install security mesh and insulation at back wall and floor of tower as required.
- 175. Provide and install all floor and ceiling screen vents required.
- 176. Assure walls and access panels are painted.
- 177. Assure the tower is properly insulated including the deck flutes.

### **GENERAL NOTES**

178. Assure all internal and external doors and locks are functioning properly.
179. All framing is to be 22 GA min.
180. Assure doors D, H, I, and fire rated doors have wire glass installed (glass frames should be 18 gauge metal).
181. Provide and install non-removable pin hinges on all exterior doors.
182. Assure all access panels are lockable.
183. Assure all corner guards are installed as required.
184. Assure all rubber door silencers and doorstops are installed.
185. Any fire alarm equipment or monitoring requirement is the responsibility of the landlord and the landlord's contractor. Refer to the spec book for national account contact and set up information.
186. Assure all lights are clean and undamaged.
187. Assure independent HVAC inspection list is completed.
188. Assure all windows and mirrors are clean on possession date.

### **POST CONSTRUCTION REQUIREMENTS**

189. Change the HVAC air filters after construction (just prior to store opening).
190. Provide Walgreens Construction representative with three keys tagged for every lock.
191. Provide the Walgreens Construction representative with names, numbers, and meter numbers of all utilities on date of possession.
192. Provide the following close out documentation on CD/RW disk to the Walgreen Project Manager.
  - A copy of the permanent Certificate of Occupancy, or Use and Occupancy.
  - A copy of the 15-year NDL manufacturer's roof warranty.
  - A copy of the 5-year installers roof warranty.
  - A copy of the 20-year manufacturer's finish warranty on the standing seam roof.
  - A copy of the 2-year installation warranty on standing seam roof.
  - A copy of the 50-year manufacturer's warranty on concrete roofing tiles.
  - A copy of the 30-year manufacturer's warranty on roof shingles.
  - A copy of the 2-year installation warranty on pavement.
  - A copy of subcontractors with a contact persons, address and telephone numbers.
  - A copy of the concrete floor flatness test.
  - A copy of the Alkalinity test results.
  - A copy of the floor moisture test results.
  - A copy of 5-year termite control warranty or letter from Architect of record indicating this item is not applicable.
  - A copy of thermal scan of CMU wall system when foamed-in-place insulation is used.
  - A copy of the ADA survey and Engineers acceptance letter of the as built conditions compliance with all state, federal and local laws. ( this means not a letter saying it was designed it to meet code, it means it was built meeting code)





## SECTION 01010 - SUMMARY OF WORK

### PART I - GENERAL

#### 1.01 GENERAL REQUIREMENTS

- A. The "General Conditions of the Contract for Construction" AIA #A201, Latest Edition, Supplementary Conditions and General Requirements apply to the work and all specification sections and all are complimentary.
- B. Walgreens drawings and specifications are intended to show construction CRITERIA ONLY and to describe Walgreens requirements. All other architectural, civil, structural, mechanical and electrical engineering for complete construction documents, including specifications shall be provided by the Landlords Architects and Engineers, at Landlords expense.
- C. Complete properly operating construction ready for occupancy shall be provided by the Contractor at his expense. All work shall conform to requirements of Documents.

#### D. Building Requirements:

1. Wholly or partially prefabricated buildings or structural systems are prohibited. Materials containing asbestos are prohibited. Demolition activities required to prepare a site to receive a new Walgreens shall remove all existing construction and improvements. Existing buildings shall be completely removed including foundations, footings and basements. Dirt floors are prohibited in crawl spaces. Abandoned spaces within existing structures, which are being converted to Walgreens stores, shall be free of all debris of any origin, and access shall be provided to permit inspection.

Construction, demolition or existing debris of any form, regardless of its origin, shall be completely removed from the site and shall be legally disposed of off site.

2. Vertical Dimensions: Provide a 13'-0" clear height sales floor. See drawings for minimum clearance above ceiling to bottom of structural system for mechanical, electrical and sprinkler systems. Provide 14'-6" minimum clear between general stock finish floor and bottom of structural system, and not less than 14'-0" clear to any items suspended from the structural system in the stock area, unless specifically approved by Walgreens.
3. Exterior: the height to the top of coping of the glass tower on prototype shall be 27' - 11 1/2" (higher for Neighborhood prototypes). The front facade sign band shall be 23' - 11 1/2" high to top of coping but not less in height than any other store in the shopping center. Exterior design and materials shall be as approved by Walgreens. Neighborhood prototype stores shall be modified as required by Walgreens project architect.
4. Multiple Floor Stores: For stores containing mezzanines, second floors or basements, the floor of any second level or floor area above the basement shall consist of a steel, bar joist and metal deck structure with concrete floor construction. Precast concrete planks may be considered at the discretion of Walgreens Project Architect. Provide a minimum of 10-ft. clear to bottom of structure, ductwork, lighting, sprinkler piping and electrical systems at second level.

Stairs between floor levels shall be prefabricated steel units with concrete filled treads and landings. Elevators or personnel lifts shall be provided if required by

ADA or local authorities. Walgreens merchandise conveyor shall be installed, if indicated on the Walgreens fixture plan.

5. Basements: For stores containing basements, provide positive side water-proofing of all walls, under-floor drainage systems with vapor barrier (if high water table or hydro-static pressure is present), foundation drainage systems, two sump pits and sump pumps. Sump pumps shall be equipped with battery back-up systems providing a minimum of eight hours of service in the event of a power failure. Provide a minimum of 10-ft. clear to bottom of structure, ductwork, lighting, sprinkler piping and electrical systems. Ejector pumps shall be provided when toilet facilities are present. Provide floor drains with check valves to prevent back-up during rainstorms. Provide sealed concrete floors. Concrete walls shall have a smooth rubbed, painted finish except when local energy codes require additional insulation, then provide furring, insulation and painted gypsum board finishes. Provide two means of egress. Basements shall be fully sprinkled and shall receive lighting and HVAC in compliance with the similar rooms and uses shown in Walgreens Criteria documents.
6. Vestibules: Provide a vestibule at the main entry of stores. The vestibule floor shall receive a PVC entrance grid, and contain a floor drain. Walgreens shall provide the size of the recessed area and entrance grid.
7. Site: All required utilities shall run underground and connect to building in locations approved by Architect. The Landlords contractor shall arrange for all utilities to be brought to the building. Walgreens shall approve the location of all utility meters, transformer, main control valves and access. Overhead lines above Walgreens store, parking and sidewalks are prohibited.

Walgreens utilities, meters, services entrance, etc. shall not be shared by other tenants. No other tenant's utilities shall be sub-metered from Walgreens meters. Under no circumstances shall access to utility meters, panels, service entrance, etc. for utilities serving other tenants or common areas, be required through Walgreens premises. Walgreens utilities may be sub-metered from the main meter of an existing building, but other tenants shall not be metered from the Walgreens sub-meter. Utility rooms containing house panels, control panels, service entrances, burglar/fire alarm panels, sprinkler risers, lighting controls, meters, etc. serving common areas or other tenants, shall not be located within or accessed from the Walgreens leased premises.

Utilities serving basements, cellars, or other levels immediately below, above or adjacent to Walgreens premises, but not used by Walgreens shall not be tapped from Walgreens utilities, meters, panels, etc. nor charged to Walgreens.

Protective pipe bollards shall be placed at any location where a vehicle could strike the building, columns, utility meters, equipment or other site improvements. Protective highway guardrails conforming to local Department of Transportation Standards shall be provided at all locations where the grade behind a curb line or pavement drops off at 3:1 or greater or where pavement is within five feet of a retaining wall, the top of which is more than two feet above the grade at the bottom of the retaining wall.

The site shall be configured to allow a 65-foot long semi-tractor trailer to enter the site and circulate around the building and exit without obstruction. Grades shall not exceed 5% (1:20) nor be less than 1.5%. There shall be no site stairs or ramps (except those serving the handicapped) unless specifically approved in writing by Walgreens. All site work shall be subject to Walgreens approval.



Site Entrances: Convenient access is critical to Walgreens. Passing motorists should be discouraged from blocking Walgreens site entrances by the posting of "Do Not Block Driveway" signs. Posting of signs allowing U-turns should be pursued for sites with only "right-in/right-out" access or medians along the main thoroughfare. The Landlord shall seek approval for the placement of the referenced signs from the local authority having jurisdiction.

Seismic Zones: Stores, including shelving must be designed to comply with all applicable requirements and ordinances of the local in which they are built. If a municipality requires structural calculations for shelving systems, the Landlord is responsible for contacting Peter S. Higgins & Associates, 30765 Pacific Coast Highway, Box 117, Malibu, CA 90265, phone 310-589-1781 fax 310-589-5194. Mr. Higgins will sub-contract with the Landlord's structural engineer to provide the necessary documentation.

8. Retaining Walls: The Walgreens preferred retaining wall is properly engineered, reinforced, poured-in-place concrete. Segmented retaining walls may be considered by Walgreens provided ALL of the following criteria are met.
  - a. Walgreens must approve the use of segmented retaining walls prior to submitting the first check set.
  - b. A licensed Professional Engineer possessing experience in the design of segmented retaining walls shall properly engineer segmented retaining walls. The retaining wall design must address the soil conditions and recommendations presented in the Geotechnical report prepared for the site. The Professional Engineer must coordinate the retaining wall design with the Civil Engineer to properly accommodate utilities, storm drainage, grades, and other site work. The Architect of Record shall be responsible for assuring that the geotechnical, retaining wall and civil engineering disciplines have been coordinated. Walgreens, at its discretion, reserves the right to hire an independent retaining wall design expert to observe the efforts of the Landlords design consultants to verify that Walgreens requirements are being achieved. Such independent observation shall also include examination of design documents and field observations.
  - c. Segmented retaining walls shall be designed in accordance with the National Concrete Masonry Association "Design Manual for Segmental Retaining Walls" latest edition.
  - d. The total height of the wall shall not exceed 6' - 0".
  - e. Buildings, paving or parking shall be located no closer horizontally to the top edge of the retaining wall than a 1:1 (horizontal to vertical) ratio with the bottom of the wall.
  - f. Parking lot guardrail posts or light standards shall be located no closer horizontally to the top edge of the retaining wall than a 1:1 (horizontal to vertical) ratio with the bottom of the wall.
  - g. Trees shall be located no closer horizontally to the top edge of the retaining wall than a 1:1 (horizontal to vertical) ratio with the bottom of the wall.
  - h. Utilities shall not be located within the fill behind a retaining wall anywhere in the zone defined by a 1:1 (horizontal to vertical) ratio of the top and bottom of the wall.
  - i. The backslope at the top of the wall shall not exceed 4:1 (horizontal to vertical) and shall be graded to prevent surface ponding behind the wall.
  - j. The wall shall be constructed with a uniform batter toward the retained soils.

- k. Segmented retaining walls shall be built on competent foundations for which excessive settlement, squeezing or liquefaction are not potential sources of instability.
  - l. The wall shall be constructed by a contractor with five years minimum experience in the successful completion of walls of the specified manufacturer.
  - m. Acceptable Segmented Retaining Wall manufacturers: Anchor Wall Systems™, Keystone® Retaining Wall Systems, Redi Rock™ Retaining Wall Systems or Versa-Lok® Retaining Wall Systems. Substitutions are prohibited.
  - n. Retaining walls of any type shall be constructed with features that prevent people from climbing vertical surfaces, loitering at the top of the wall and which provides safeguards to prevent people or vehicles from falling over the wall.
- E. Construction Documents: All construction drawings and project manuals shall be submitted to Walgreens for REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. A complete set of reproducible bond paper copies of the approved drawings shall be submitted to Walgreens within 20 days of Walgreens approval. The approved drawings shall contain all items required by the criteria documents unless specifically noted otherwise. Construction commenced prior to Walgreens approval is done at the Landlords risk.
- F. Permits and Certificates: All required permits, variances and certificates shall be obtained and paid for by the Landlord/Contractor.
- G. The word “Contractor” as it appears in Walgreens Criteria documents refers to the Contractors employed by the Landlord unless noted otherwise.
- H. Contractor shall arrange for, maintain and pay for all temporary utilities until final acceptance by Walgreens. Responsibility for payment of permanent utilities shall not be put into Walgreens name until possession of store is taken by Walgreens.
- I. The word “Landlord” as it appears in Walgreens criteria documents refers to the entity that own and leases the “leased premises” to Walgreen Co.
- J. The word “Tenant” as it appears in Walgreens criteria document refers to Walgreen Co.

## 1.02 INSURANCE

- A. Indemnification Insurance: (Contractor’s Expense).
- 1. The Landlord’s Contractor shall indemnify and hold harmless Walgreen Co. and their agents and employees from and against all claims, damages, losses and expenses including attorney’s fees arising out of or resulting from the performance of the work.
  - 2. In any and all claims against Walgreen Co. or any of their agents or employees, by any employees of the Contractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation under this Specification shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor under workmen’s compensation acts, disability benefit acts or other employee benefit acts.

- B. Contractor's Liability Insurance: (Contractor's Expense)
1. Landlord's Contractor shall not commence Walgreen's work without obtaining all insurance hereunder. The insurance shall include Walgreens as an "additional insured". Approval by Walgreen Co. shall not relieve or decrease the liability of the Contractor.
  2. The Contractor shall submit to Walgreen Co., before commencing work, evidence of the above-required insurance, which shall contain certification by the insurance companies that such insurance shall not be canceled or materially changed without 30 days prior notification to Walgreen Co.
- C. Property Insurance: (Landlord's Expense)
1. Unless otherwise provided, the Owner shall purchase and maintain property insurance upon the entire work at the site to the full insurable value thereof. This insurance shall include the interests of Walgreen Co. and shall insure against the perils of Fire, Extended Coverage, Vandalism, and Malicious Mischief.
  2. Any insured loss is to be adjusted with and made payable to Walgreen Co. as trustee for the insured, as their interests may appear subject to the requirements of any applicable mortgage clause.
  3. Walgreen Co. and Contractor waive all rights against each other for damages caused by fire or other perils to the extent covered by insurance provided under this Specification.

### 1.03 SUPPLEMENTARY CONDITIONS

- A. Existing Conditions - Landlord's Contractor shall examine the project site, all drawings and specifications. If discrepancies or differences exist between drawings, specifications, site conditions, or Walgreens requirements, promptly notify Architect for resolution. No later claims to Landlord. shall be made for extra labor, equipment, or materials, which could have been foreseen by examination of site and project documents.
- B. Code Compliance - All work must comply with all applicable codes, shall be structurally sound and fit for Walgreens intended use. Deviation from Walgreens plans and specifications necessary for compliance shall be reported to Architect. All changes are subject to Walgreens approval.
- C. Workmanship and Installation - All work shall be performed by skilled experienced workman to properly complete the installation for a neat and finished appearance.
- Walgreens and Architect shall decide if the finished work is satisfactory. The contractor shall replace or reinstall any materials or equipment not properly installed or finished in a manner satisfactory to Walgreens, and the Architect..
- D. Guarantee/Warranty - The contractor warrants that work performed conforms to the Contract documents and is free of any defect in equipment, materials or design furnished or workmanship performed by the Contractor or Subcontractor of any tier. This warranty shall last as long as permitted by the Statue of Limitations or Repose of the State in which the project is constructed, but in no case shall the warranty period be less than one year. Guarantees and Warranties shall commence on the date of possession by Walgreens.



1.04 PROJECT COORDINATION

- A. Drawing Coordination - All Contractors shall review drawings and specifications of all trades and coordinate their work with others. Corrections of conflicts in documents, or field errors shall be made at no extra cost to Owner.
- B. Large Equipment - When possible, equipment which is to be installed in the building that may be too large to pass through stairways, doorways, or shafts, shall be brought on the job and placed in the proper space before the enclosing structure is completed, otherwise arrange with other Contractors to permit access at a later date, at no additional cost to Owner.

1.05 SUBMITTALS

- A. Lease Attachments - A copy of the site plan is required for attachment to the lease. At a minimum, this site plan MUST include the following information.
  - 1. Overall site plan with dimensions. Show all paved and landscaped areas.
  - 2. All curb cuts, access points, and street medians.
  - 3. Walgreen building location, complete with dimensions, canopies, columns and "WALGREENS" notation.
  - 4. Service access including graphic representation of truck turning radii at critical locations.
  - 5. All pedestrian paths (sidewalks, etc.).
  - 6. Finish floor elevations of all buildings.
  - 7. Grade elevation including any proposed stairs or ramps, drainage (detention areas), retaining walls and fences. If the slope of any pedestrian, parking or vehicular area exceeds five percent (5%) grade, identify such area with an arrow covering the full distance noting the percentage of slope and direction of fall. (Walgreens approval required).
  - 8. Pylon sign location indicating whether Walgreens or shared.
  - 9. Handicapped curb access ramp directly in front of our entrance.
  - 10. Parking stall and aisle configuration and dimensions.
  - 11. Legal Description(s) of the site and a Plat of Survey. (A.L.T.A. format) including any cross easements.
- B. Environmental/Structural Report
  - 1. Provide a Phase I Environmental Assessment of the site per ASTM E-1527- 00 which includes an asbestos, lead and PCB survey of any existing building. Suspect sites may require a Phase II investigation. All reports shall be certified to Walgreen Co.
    - a. Identify all locations of above ground and below ground remediation equipment.

2. A structural examination of an existing building is for structures to be renovated.
  3. Soils report of actual unconfined strength of each stratum and all other soil related factors, which could affect the structural stability of any/all improvements.
- C. Specific submittal requirements for individual units of work are specified in the applicable specification sections. Comply with the requirements specified herein for each type of submittal. Walgreens review of submittals in no way limits the obligation of the Landlord, his consultants or contractors from complying with Walgreens criteria documents, which shall govern.
- D. Submit to Architect shop drawings, product data and/or samples for items listed below, indicating method of construction, detail layouts, dimensions, diagram, schedules, brochures, color selection charts or chips, and other data as required to fully explain the intended material, and installation to allow selection of color or finishes.  
The required submittals are as follows:
- a. Fire Retardant Treatment for Wood.
  - b. Roll-up entry grille.
  - c. Automatic Entrances.
  - d. Landscape Irrigation.
  - e. Plumbing Fixtures & Trim.
  - f. Packaged Rooftop HVAC Units.
  - g. HVAC Load Calculations (Submit with first Check Set)
  - h. Lighting Fixtures.
  - i. Power Distribution Equipment (Panelboards).
  - j. Fire Protection System
  - k. Roofing submittal form from Section 07500 and related documents
- E. Submittal Preparation:
1. Shop Drawings: Provide one correctable reproducible print and one blueline print; the reproducible print will be returned.
  2. Product Data: Provide four (4) copies of manufacturer's standard printed recommendations for application and use, installation coordination, testing, operation and dimensions.
  3. Samples: Provide two samples of appropriate size for visual review of color pattern, texture and final check of coordination of these characteristics with related work. Samples may be used for quality control comparison of the completed installation.
- F. All submittals must receive the Contractor's and Architect's review and actions markings prior to submission to Walgreens.
- G. See mechanical and electrical specifications for submittal requirements for mechanical and electrical work.
- H. Walgreens shall, at its discretion, require copies of all Quality Control test reports. Work that does not conform to the design criteria shall be replaced at no cost to Walgreens.

#### 1.06 SUBSTITUTIONS

- A. Material or equipment indicated by manufacturers name indicates Walgreens preference and expected quality and installation. Substitutions are not encouraged except for extreme cases.

- B. All substitutions are subject to Walgreen & Architects approval. To be considered, requests for substitutions must include a point by point comparison between the proposed substitute and the specified manufacturer and model. The comparison must confirm that the proposed substitute is equal to or exceeds the quality of the specified products. Incomplete submittals will not be considered.
- C. Requests resulting from failure to allow sufficient time to order and receive material will not be considered.
- D. The contractor shall pay all Architects and Consultant fees resulting from the review of substitutions.

#### 1.07 PROJECT CLOSE-OUT

- A. Project closeout refers to certain requirements indicating project completion and that are to be fulfilled prior to final acceptance by Walgreens.
- B. Final inspection: Upon request from the Contractor, Walgreens personnel will either proceed with inspection or advise the Contractor of unfilled prerequisites. Results of the final inspection will be the “punch-list” for final acceptance. See section 07500 for requirements related to roofing.
- C. Cleaning - Remove all rubbish regularly. Remove marks, stains, soil, and fingerprints from all completed work including plumbing, electrical, mechanical equipment and all finish surfaces and glass.
- D. Submit final meter readings for utilities and coordinate transfer for future billings with Walgreens Construction Department.
- E. Warranties: Submit required warranties in three ring two inch vinyl binders organized into the appropriate divisions. Upon delivery of possession of the leased premises to the Tenant, Landlord shall cause all contractor’s, subcontractor’s and manufacturer’s warranties and guaranties relating to the leased premises to be assigned to Tenant, or the extent not assignable, then to be issued in Tenant’s name.
- F. Other Close-Out Documentation: Submit electronic copies of operating manuals, cut sheets, manufacturer’s maintenance instructions and other necessary information on CD’s organized into the appropriate divisions. Information shall include but not be limited to the following and must also include any non-standard or non-criteria equipment or improvements:

Division 1: List all required annual municipal/state required inspections and renewable licenses (related to building systems).

Division 2: Lift stations, underground storm water retention/detention/filtration systems, oil/water separators, septic systems, sump pumps, ejector pumps, landscape irrigation pumps/wells and associated equipment, monitoring wells and remediation equipment and permeable paving systems.

Division 6: Fire retardant treatments.

Division 7: Foam insulation systems.

Division 8: Automatic entrance doors, revolving doors, insulated glass types, hurricane/impact resistant glazing systems,

Division 9: Anti-graffiti coatings.

Division 14: Elevators/escalators.

Division 15: Fire Pumps, LP gas.



Division 16: Non-criteria site lighting fixtures and/or poles, generators.

- G. Attic Stock: Turn over the following attic stock to Walgreens Construction Superintendent for storage at the store. See specification section for quantity:
  - Acoustic Ceiling Tiles
  - Resilient Flooring
  - E.I.F.S. Finish Coat

END OF SECTION



## SECTION 01400 – QUALITY CONTROL TESTING

### PART 1 – GENERAL

#### 1.01 DESCRIPTION

- A. General: Required inspection and testing services do not relieve the Contractor of responsibility for compliance with these requirements or for compliance with requirements of the contract documents and Walgreens Criteria.
- B. Definitions: Quality control services include inspections and tests and related actions including reports, performed by independent agencies and governing authorities, as well as directly by the Contractor.
- C. Specific quality control requirements for individual units of work are specified in the sections that specify the individual element of the work. These requirements cover production of standard products, fabrication of customized work and quality control of installation procedures.
- D. Provisions of this section do not limit requirements for the contractor to provide quality control services as required by the Architect/Engineer-Of-Record, the Owner, governing authorities or other authorized entities.
- E. Walgreens has entered into a national account agreement with the following companies as the only agents approved to perform quality control inspection, testing and reporting services. Developers shall contract with the testing firm assigned to the regions below:

Northeast: CT, MA, ME, NH, NJ, NY, PA, RI, VT, WV

Quality Control Testing shall be performed by local qualified firms, subject to approval by Walgreens Construction Project Manager. Approved firms must be capable of performing all tests required by Walgreens Criteria Documents.

#### 1.02 RESPONSIBILITIES

- A. Contractor Responsibilities: Except where there are specifically indicated as being provided by another identified entity, inspections, tests and quality control services are the Contractor's responsibility; these services also include those specified to be performed by an independent agency and not directly by the Contractor. Costs for these services shall be included in the contract Sum. The Contractor shall employ and pay an independent agent, testing laboratory or other qualified firm to perform quality control services.

Pre-Grading/Paving Meeting: Conducted by the General Contractor and including sub-contractors, the Quality Control Testing Consultant and Walgreens Superintendent. Review requirements of the geotechnical report, project schedule, paving mix design, installation requirements and testing requirements. Prepare and submit meeting minutes to all attendees.

Pre-Slab Meeting: Conducted by the General Contractor and including subcontractors, the Quality Control Testing Consultant and Walgreens Superintendent. Review building pad suitability, concrete mix design, reinforcement (chair positioning), concrete placement and testing procedures. Prepare and submit meeting minutes to all attendees.



- B. Owner (Landlord) Responsibility: The owner (Landlord) shall engage and pay for the services of an independent agency to perform inspections and tests that are specified as the Owner's responsibility.
- C. Retest Responsibility: Where results of required inspections, tests, etc. prove unsatisfactory and do not comply with the requirements of the contract documents, then retests are the responsibility of the Contractor, regardless of whether the original test was the Contractor's responsibility. Retesting work revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original work.
- D. Responsibility for Associated Services: The Contractor shall cooperate with those performing required inspections, tests and similar services. Cooperating includes but is not limited to the following:
  1. Providing testing company 48 hour notice of when tests are required.
  2. Providing access to the work.
  3. Taking samples or assistance with taking samples.
  4. Delivery of samples to test laboratories.
  5. Security and protection of samples and test equipment at the project site.

1.03 SCHEDULE OF SERVICES

- A. The following schedule of inspections, tests and similar services represents the minimum scope of quality control services to be performed. The Architect/Engineer-Of-Record or governing authorities may require other quality control services.

Division 2 Sections

- Verify suitable soil bearing capacity and subgrade modulus.
- Field density testing, compaction testing.
- Optimum moisture/maximum density testing.
- Pavement proof rolling.
- Pavement surface smoothness testing.

Division 3 Sections

- Concrete compressive strength testing.
- Concrete slump testing.
- Floor flatness/levelness testing.
- Concrete moisture vapor emission rate testing.
- Concrete moisture content testing.

Division 4 Sections

- Reinforced masonry grouting.

Division 5 Sections

- Weld testing.
- Moment connection weld testing (when applicable).
- Bolt torque testing.

Division 7 Sections

- Thermal scans (for foamed-in-place insulation).
- Density, thermal conductivity and open cell content of foamed-in-place insulation.

Division 9 Sections

- Moisture vapor emission rate testing.
- Concrete alkalinity testing.

Division 15 Sections

- Sprinkler system leak test.
- Domestic water system leak tests.
- Sewer system hydrostatic tests.
- Leak, pressure and load testing of HVAC refrigerant piping.
- HVAC Testing, Balancing, Adjusting and Commissioning

Division 16 Sections

- Electrical wiring for short circuiting and proper grounding.

1.04 QUALIFICATION FOR SERVICE AGENCIES

Engage inspection and test service agencies, including independent testing laboratories, which comply with "Guidelines for Effective Practice for Materials Engineering Laboratories" by the American Council of Independent Laboratories, and which specialize in the types of inspections and tests to be performed.

1.05 SUBMITTALS

- A. Submit a certified written report of each inspection, test or similar service, directly to the Architect/Engineer-Of-Record. Copies of all test reports, inspection reports, etc. shall be kept on site at all times.
- B. Report Data: Written reports of each inspection, test of similar service shall include, but not be limited to the following:
  - Name of testing agency or test laboratory.
  - Dates and locations of samples and test or inspections.
  - Names of individuals making the inspection or test.
  - Complete inspection or test data.
  - Test results.
  - Interpretations of test results.
  - Notation of significant ambient conditions at the time of sample taking and testing.
  - Comments or professional opinion as to whether inspected or tested work complies with requirements of the contract documents.
  - Recommendations on retesting, if applicable.
- C. Non-Compliant Inspection/Test Results: Within 24 hours of inspection/test being performed, notify Architect/Engineer-Of-Record, Walgreens Project Manager and Walgreens Project Architect of any non-conforming/non-compliant inspections/tests. Copies of the successful retests of the originally non-conforming/non-compliant work shall be submitted to the Architect/Engineer-Of-Record, Walgreens Project Manager and Walgreens Project Architect.
- D. Project Close-out: The Architect/Engineer-Of-Record shall certify to Walgreens that the required quality control services, as required by this section and the contract documents, have been performed and that all results indicate compliance with requirements.

PART II – PRODUCTS (Not Applicable)

PART III – EXECUTION

3.01 REPAIR AND PROTECTION

General: Upon completion of inspection, testing, sample-taking and similar services repair damaged work and restore substrates and finishes to eliminate all deficiencies. Repair and protection is the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

END OF SECTION



SECTION 01500 – TEMPORARY FACILITIES

PART I – GENERAL

1.01 PROTECTION MEASURES – GENERAL

- A. Provide barricades and other safety precautions as required to insure the protection of the public as well as employees and others whose duties require their presence on the premises at the project site.
- B. Provide all bracing and shoring as required for safety and for the proper execution of work, remove when work is complete.
- C. Provide and maintain guard lights at all barricades, obstructions in streets and sidewalks, and all trenches and pits adjacent to public roads.
- D. Weather Protection: Provide protection of work at all times against rain, wind, storm, frost or the heat, to maintain all work, materials, apparatus and fixtures free from injury or damage. At the end of the days work, all new work likely to be damaged shall be protected.
- E. Provide erosion control means including siltation fences and hay bales.

1.02 MATERIALS PROTECTION

- A. Protect materials, both before and after their incorporation in the Work, as required to prevent damage from moisture, rain, dirt, cold, sunlight, and other harmful influences.
- B. Do not deliver materials to the job until they can be protected properly.
- C. If possible, store materials vulnerable to exposure inside building or other enclosure.
- D. Follow recommendations of manufacturers and subcontractors for protection and storage.
- E. Protect work which has been completed.
- F. Replace work which becomes unfit for use or unsightly during construction. Replace broken products, both existing and new. Restore materials, equipment, and finishes damaged, soiled, or otherwise made unsightly during construction. Restore shop applied finishes according to manufacturer's recommendations. If finishes cannot be restored to new condition, replace damaged parts.
- G. Call before you dig: Call Dig Safe and notify local utility companies to locate existing utilities 4 days prior start of construction. Utility companies will provide markers consisting of paint and identified stakes. Maintain markers and stakes in place throughout construction. In addition provide and maintain protective tapes, barriers, and warning signs necessary to protect the installation from damage.

1.03 USE AND PROTECTION OF BUILDING AND SITE

- A. Confine construction operations to minimum reasonable area. Restore those portions of site where no new work is indicated. Restoration shall include the following:
  - 1. Replace and regrade loam.
  - 2. Restore original contours.
  - 3. If areas were formerly covered with natural vegetation, prune remaining plants.
  - 4. If areas were formerly covered with grass, perform seeding.

5. In other cases, proceed to restore site as nearly as possible to original condition or better.
  6. Maintain the continuous operations of the existing tenants with no business interruptions.
- B. Provide erosion and sediment protection, as follows:
1. Protect the work in progress against erosion. Conform to the requirements of environmental protection agencies having jurisdiction.
  2. If seeding, sodding, planting, and mulching are not done before substantial completion, provide protection to prevent erosion. Methods of protection include sodding, temporary mulch, and seeding with rapidly growing annual grasses, to be replaced next seeding season with permanent grass.
- C. Maintain electric service, water service, gas service, and other services which affect existing buildings and their operations. If disconnection is necessary, coordinate with Owner. If necessary, perform work when Owner's operations are not scheduled.
- D. Arrange and maintain temporary facilities so as not to encumber walks, drives, roads, and ways of access and egress. Maintain safe access and egress for Owner to carry on full use of existing businesses in accordance with codes. Clear ice and snow from access and egress ways in construction area. If required for access and egress, construct temporary stairs, walks, and other structures.
- E. Restrict construction personnel to areas where construction is going on.
- E. Provide adequate barricades throughout the project area to isolate the work area

#### 1.04 FIELD OFFICE

- A. The Contractor shall provide and maintain, at a location, outside existing building, approved by the Owner's Authorized Representative, a field office at which he or his authorized representative shall be present at all times while work is in progress. Instructions received there shall be considered as delivered to the Contractor.
- B. Field office shall be equipped with a drafting board and work area for use by the Owner's Authorized Representative.
- C. Field office shall be equipped with conference room with table and chairs appropriate for use for Project Weekly Meetings.
- D. Field office facilities shall be heated, cooled and ventilated.
- E. Field office shall be equipped with a copying machine.
- F. Provide cooled drinking water in Field office.
- G. Electric service to field office shall be separately derived and paid for by the Contractor.

#### 1.05 TELEPHONE

- A. Provide temporary telephone service in the field office for used in implementation of this project. The Contractor shall pay all service and usage charges. Provide on a separate telephone line a facsimile machine.

1.06 TOILET FACILITIES

- A. Provide and maintain temporary toilet facilities for the sanitary necessities of all persons employed on the work. Toilet facilities shall be placed at approved locations near the work and shall be kept in a clean, sanitary condition at all times. The Contractor shall not use facilities in the existing buildings.

1.07 FIRST AID

- A. Provide and maintain: first aid facilities and ensure the availability of medical personnel for all persons employed on the work.

1.08 SIGNS

- A. Except as otherwise specified, no sign or advertisement will be allowed without approval of the Owner's Authorized Representative.

1.09 FIRE PROTECTION

- A. Provide 2-1/2 gallon pressurized water Class "A" type anti-freeze, Underwriter's approved fire extinguishers as required by the local fire codes and as directed by the Owner's Authorized Representative.
- B. Each extinguisher shall be inspected and tested at least once a month during construction period and a date tag certifying the adequacy of the charge and workability of the extinguishers shall be affixed thereon.
- C. The extinguishers shall remain the property of the Contractor and shall be removed at the conclusion of the work.
- D. Whenever open flames are present, extinguishers shall be stationed nearby.

1.10 SNOW REMOVAL

- A. The Contractor shall remove all snow from his area of the construction site.

1.11 TEMPORARY HEAT

- A. During the construction the Contractor shall provide all heat, fuel and services necessary to protect all of the work and materials against injury from dampness and cold, and to complete his work. Provide approved temporary heating devices, electrical power, adequate and proper fuel, fire, enclosures, etc. as required for the work. Watchmen shall be constantly in attendance when fuel is burning. Use only Underwriter's approved equipment. No open salamanders will be allowed.

1.12 TEMPORARY LIGHTING

- A. Maintain adequate temporary lighting consisting of a minimum of 10 to 15 foot-candles throughout the project to enable all trades to work a full working day.

1.13 WASTE DISPOSAL

- A. The Contractor shall not dispose of any trash or waste materials within dumpsters located at the site. The Contractor shall remove all trash or waste materials to an authorized disposal site, at the Contractor's expense.

1.14 RESTRICTION FENCING

- A. Provide and maintain temporary fencing.

END OF SECTION





SECTION 01550 – AS BUILT DOCUMENTS

PART I – GENERAL

1.01 MAINTENANCE OF DOCUMENTS

- A. The contractor shall maintain a complete set of construction documents in his field office, including drawings, specifications, addenda, bulletins, change orders, sketches and other modifications, and approved submittals.
- B. The contractor shall on a regular basis mark-up the documents to reflect actual field installation. Do not permanently conceal any work until required information has been recorded.
- C. Contract Drawings: Legibly mark to record actual construction, including, but not limited to, the following items.
  - 1. Horizontal and vertical location of underground utilities and appurtenances referred to permanent surface improvements
  - 2. field changes of dimension and detail.
  - 3. Changes made by Change Order or Field Order.
  - 4. Details not on original Contract Drawings.
- D. The Owner's Authorized Representative shall have access, to review state of these documents, at any time.

1.02 PLUMBING MAINTENANCE PRINTS

- A. The Contractor shall provide an "As-Built" buried plumbing and above grade plumbing plan at scale no less than 1/16" = 1'0" in a protected frame with clear covering permanently mounted to a wall as directed by the Walgreens representative.

END OF SECTION





SECTION 02060 – BUILDING DEMOLITION

PART I GENERAL

1.01 DESCRIPTION

- A. Demolish existing construction and improvements within work area completely. Remove all manmade items except any items indicated to remain.
  - 1. Obtain and pay for demolition permit. Pay any applicable utility fees.
  - 2. Demolish above-grade building structures and improvements.
  - 3. Demolish grade-level building-related site improvements.
  - 4. Demolish below-grade foundations, improvements and obstructions to depth to avoid conflict with new construction or sitework. Remove hollow items which could collapse. Coordinate with structural and sitework requirements. Refer to geotechnical report.
  - 5. Remove and legally dispose of demolished materials off-site.
  - 6. Protect sitework and adjacent structures.
  - 7. Disconnect cap, remove and relocate utility lines necessary to perform work.
  - 8. Contractor is to include in his proposal the cost of the abatement and proper disposal, including all required permits, of all hazardous materials in connection with the demolition of the existing building. Contractor shall refer to the Owners Environment Assessment report. This report does not negate the contractor's responsibility to make his own inspection of the building in order to determine the extent of the presence of hazardous materials.
- B. Building Demolition Schedule of Activities: Provide the following:
  - 1. Detail the sequence of demolition and removal work. Provide starting and ending dates for each segment.
  - 2. Utility service coordination.
  - 3. Shutoff and cap abandoned lines and provide new utility services.
  - 4. Follow the construction access fencing line. Allow accesses as shown for existing tenants.
  - 5. Coordinate with the Owner for the continuing occupancy of adjacent buildings and partial use of site.
- C. Provide photographs and videotape of site prior beginning of work. Show any areas that might be misconstrued as damage caused by building demolition begins.
- D. Refrigerant Recovery: Provide a statement signed by refrigerant recovery technician for recovering refrigerant. The statement must state that all refrigerant present was recovered according to EPA regulations. Provide name and address of technician.
- E. Coordinate for asbestos and hazardous materials demolition and removal, if required.

1.02 SUBMITTALS

- A. Submit for approval demolition schedule.

1.03 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Use experienced workers.

PART II- PRODUCTS - Not applicable to this Section.

PART III- EXECUTION

3.01 DEMOLITION

- A. Do not damage building elements and improvements indicated to remain. Items of salvage value and not included on schedule of salvage items to be returned to Owner shall be removed from structure. Storage or sale of items at project site is prohibited.
- B. Do not close or obstruct streets, walks, drives, or other occupied or used spaces or facilities without the written permission of the owner and the authorities having jurisdiction. Do not interrupt utilities serving occupied or used facilities without the written permission of the owner and authorities having jurisdiction. If necessary, provide temporary utilities.
- C. Cease operations if public safety or remaining structures are endangered. Perform temporary corrective measures until operations can be continued properly.

END OF SECTION

SECTION 02190 - SITEWORK/EXCAVATION

PART I - GENERAL

1.01 DESCRIPTION

- A. The extent of site work is shown on drawings.
- B. Site work includes but is not limited to:
  - 1. Demolition (if required) of existing structures, walks & pavements, utilities and miscellaneous improvements.
  - 2. Site clearing of trees, irrigation, topsoil stripping, clearing and grubbing.
  - 3. Earthwork; preparation of subgrade for building slabs, foundations walks, drainage fill, structural fill and backfilling.
  - 4. Termite Control - Provide site treatment for termite control in those geographic locations where termites are present.
- C. Identify location of above ground & below ground remediation equipment.
- D. Sub Surface Conditions
  - 1. Owner has explored sub-surface conditions by having authorized the making of test borings and test pits on site. Refer to geo-technical report prepared by S. W. Cole Engineering, Inc, dated 2/06/09.  
  
Conflicts in the information contained in these specifications and the recommendations of the soils engineer shall be brought to the attention of the architect prior to work proceeding.
  - 2. Owner and Architect make no representations regarding character or extent of soil or other sub-surface conditions and/or utilities which may be encountered during work. Subsoil formations, including water levels, included in reports have been interpolated from completed borings, correctness of which is not guaranteed.
  - 3. Bidder shall make his own deductions of sub-surface conditions which may affect methods or cost of construction. Bidder may request written permission to make investigations of the existing soil for whatever purposes he may desire.
    - A. Boring Locations
      - 1. Refer to geo-technical report prepared by S. W. Cole Engineering, Inc, dated 2/06/09.
      - 2. Bidder shall visit the site and make such investigations as may be deemed necessary for proper execution of the Contract.
- E. Supplemental site specifications may be provided by Civil Engineer.
- F. Contractor to obtain all required local and state permits that are required for removing soil from the site or filling of the site.

1.02 QUALITY ASSURANCE.

- A. Severe slope, ramps or steps shall not be permitted at Walgreens' store at front, sides, or rear of building. Maximum permitted slope on site shall be 1:20 (5%). Minimum permitted slope on site

shall be 1.5% to insure positive drainage. Maximum entrance slab slope up to doorway shall not exceed 2.0%.

- B. Testing: Employ at Landlords expense testing laboratory to perform soil and quality control testing as required. Copies of test reports to be submitted to Walgreens Construction Department, Project Manager, upon request.
1. Soil reports of actual unconfined compressive strength of each strata tested. Verify soil/fill bearing capacity conforms to design requirements. Perform one test at each column pad and per each 50 ft. of foundation.
  2. Field density tests. Perform one test per each 2,500 sq. ft. per lift of fill.
  3. Trench Backfill: Perform at least one test per each 100 lineal feet of trench. Recompact and retest density and compaction of any trench installed after building pad testing has been performed.
  4. Foundation wall backfill inside and outside shall have compaction tests made ever 50ft. Tests shall be performed on each 12" lift.
  5. Provide subgrade modulus tests, one for each 2,500 square feet of pavement placed on natural soils.
  6. Optimum moisture/maximum density tests. Perform one test per each type soil and each 1,000 cu. Yds of material.
  7. Final building pad verification letter, submitted by the Geotechnical Engineer at the completion of grading operations, summarizing satisfactory completion of all tests performed prior to slab placement.
- C. Warranty/Termite Control: Furnish written warranty certifying that soil poisoning treatment will prevent infestation of termites for five years from date of treatment. Provide installer certification that three application have been applied as required. Submit certification to Walgreens Construction Department. Project Manager.
1. Contractor will pretreat soil and repair/replace any damage caused by infestation.
- D. The Contractor will coordinate with an Independent Laboratory, as selected and paid for by the Owner, to perform inspection, sampling, and testing. Services include but are not limited to:
1. Employment of Testing Laboratory shall in no way relieve Contractor of his obligation to perform work in accordance with contract.
- E. LABORATORY DUTIES LIMITATIONS OF AUTHORITY
1. Perform inspection, sampling and testing of materials and methods of construction.
    - a. Comply with specified standards; ASTM, other recognized authorities, and as specified.
    - b. Ascertain compliance with requirements of Contract Documents.
  2. Promptly notify the Owner's Authorized Representative and Contractor, of irregularities or deficiencies of work which are observed during performances of services.
  3. Promptly submit 5 copies of reports of inspection and tests to the Owner's Authorized Representatives including:



- a. Date issued
  - b. Testing laboratory name and address
  - c. Name and signature of inspector
  - d. Date of inspection of sampling
  - e. Record of temperature and weather
  - f. Date of test
  - g. Identification of product and specification section
  - h. Location in project
  - i. Type of inspection or test
  - j. Observations regarding compliance with Contract Documents
4. The Testing Laboratory is not authorized to:
- a. Release, revoke, alter, or enlarge on, requirements of Contract Document
  - b. Approve or accept any portion of work
  - c. Perform any duties of the Contractor

1.03. JOB CONDITIONS

- A. Existing Utilities: Locate, disconnect, cap and remove existing utilities within the site.
  - 1. Make arrangements as required to relocate/re-route those utilities serving others off-site and on-site tenants.

PART II - PRODUCTS

2.01 MATERIALS

- A. Satisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups, GW, GP, GM, SM, SW and SP. On sites where specific conditions cause any of the listed soils to be unsatisfactory, the Soils Engineer shall specify alternate satisfactory materials and provide Walgreens Project Architect a written explanation.
- B. Subbase Material: Provide CA-6, naturally or artificially graded mixture of natural or crushed gravel, crushed stone, crushed slag, natural or crushed fine aggregate conforming to ASTM D-2940-03 with at least 95% passing a 1-1/2 inch sieve and not more than 8% passing a No. 200 sieve.
- C. Drainage Fill: Washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, ASTM D448, Size 57, with 100% passing a 1- 1/2 " sieve and not more than 5% passing a No. 8 sieve.
- D. Backfil, Fill, and Subbase Materials: Satisfactory soil materials free of clay, rock or gravel larger than 2" in any dimension, debris, waste, frozen materials, vegetable and other deleterious matter. No recycled pavement, concrete, brick, or other building materials shall be used except by specific written approval of the Owner, Architect, or Walgreens.

## 2.02. SOIL TREATMENT

- A. All solutions must be environmentally friendly. Consult the structural pest control regulatory agency of your State prior to use of any product. Provide a solution of one of the following. Fuel oil is not permitted as a diluent. Mix with water at the manufacturers prescribed rate for the conditions encountered.
1. Permethrin; 36.8% combined with 63.2% inert ingredients in water emulsion.
  2. Bifenthrin; 25.1% combined with 74.9% inert ingredients in water emulsion.
  3. Cypermethrin; 24.8% combined with 75.2% inert ingredients in water emulsion.

Acceptable manufacturers: Dragnet ® SFR, Biflex ® TC, Prevail ® FT manufactured by FMC Corporation. Durbsan TC manufactured by Dow AgroSciences.

## PART III - EXECUTION

### 3.01 SITE CLEARING

- A. Clearing and Grubbing: Clear site of trees, shrubs and other vegetation, except for those indicated to remain.
1. Completely remove stumps, roots, and other debris protruding through ground surface.
  2. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, meeting compaction requirements, unless further excavation or earthwork is indicated.
- B. Removal of Improvements: Remove existing above-grade and below grade improvements necessary to permit construction including abandoned underground piping or conduit interfering with construction. Fill resulting excavations with satisfactory materials meeting compaction requirements.

### 3.02. EXCAVATION

- A. Earth Excavation includes excavation of pavements and obstructions visible on ground surface; underground structures, utilities and other items indicated to be demolished and removed; together with earth and other materials encountered.
- B. Excavation for Structures: Conform to elevations and dimensions shown. For footings and foundations extend excavation below frost line and do not disturb bottom of excavation.
- C. Excavation for Pavements: Cut surface to comply with cross-section, elevations and grades as shown.
- D. Excavation for Trenches: Grade bottoms of trenches as required/indicated, notching under pipe bells to provide solid bearing for entire pipe.
- E. Shoring/Bracing: Provide shoring, bracing required to support adjoining soils, buildings, etc.
- F. Pumping: Keep excavations, and entire subgrade area free of water. Do not operate any system that will loosen existing soils or cause the subsoils to be removed or shifted from their original position.

### 3.03 COMPACTION

- A. Percentage of Maximum Density Requirements: Compact soil to not less than the following percentages of maximum density for soils exhibiting a well-defined moisture density relationship

(cohesive soils) in accordance with ASTM D 1557; or in accordance with ASTM D 4253, for soils which not exhibit a well-defined moisture-density relationship (cohesionless soils).

1. Structures, Foundation Wall Backfill, Building Slabs and Steps, Pavements: Compact each layer at 90% maximum density for cohesive material or 95% relative density for cohesionless material.
2. Lawn or Unpaved Areas: Compact each layer at 85% maximum density for cohesive soils and 90% relative density for cohesionless soil.
3. Walkways and under curbs: Compact each layer at 90% maximum density for cohesive material or 95% relative density for cohesionless material.
4. Trenches: Compact fill to conform to requirements of area in which trench is installed.

#### 3.04 BACKFILL AND FILL

- A. General: Place acceptable soil material in layers to required subgrade elevations, for each area classification listed below.
  1. In excavations, use satisfactory excavated or borrow material.
  2. Under Landscaped areas, use satisfactory excavated or borrow materials.
  3. Under walks and pavements, use subbase material, or satisfactory excavated or borrow material, or combination of both.
  4. Under steps, use subbase material.
  5. Under building slabs, use drainage fill material.
  6. Under piping and conduit, use subbase material where subbase is indicated under piping or conduit; shape to fit bottom 90 degrees of cylinder.
  7. Around foundation drainage systems, use drainage fill.

#### 3.05 GRADING:

- A. General: Uniformly grade areas, including adjacent transition areas. Smooth finished surface, compact with uniform levels or slopes between points where elevations are indicated and existing grades.
- B. Grading Outside Building Lines: Grade areas adjacent to building lines to drain away from structures and to prevent ponding.
- C. Grading Surface of Fill under Building Slabs: Grade smooth, free of voids, compacted as specified, to required elevation.
- D. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum of relative density for each area classification.

#### 3.06 TERMITE CONTROL TREATMENT

- A. Apply treatment in strict compliance with manufacturers written instructions. Do not disturb treated areas. Provide a blue "spray indicator" mixed with termiticide to indicate treated areas.
- B. Apply treatment in three applications.

1. First Application: pre-treat general slab areas and around utility entry points.
  2. Second Application: pre-treat against exterior foundation walls, beneath sidewalks and driveways.
  3. Third Application: treat adjacent to exterior walls after landscaping is complete.
- C. Reapply treatment to areas disturbed by construction activity following application.
- D. Treat foundation walls and areas under building slabs. Termiticide must come in contact with the foundation wall. Applying the termiticide to the outer surface of foundation insulation boards of protection boards is not acceptable.

END OF SECTION



SECTION 02500 - PAVING & SURFACING

PART I GENERAL

1.01 DESCRIPTION

- A. Extent of paving and surfacing is shown on the drawings and includes but is not limited to:
  - 1. Asphalt paving.
  - 2. Heavy duty paving at all truck traffic areas.
  - 3. Pavement markings.
  - 4. Wheel stops.
  - 5. Signs and posts for handicapped parking required by ADA.

1.02 QUALITY ASSURANCE

- A. Comply with and perform all paving work in accordance with the Standard Specifications for Road Construction (latest edition) of the Department of Transportation (Highway) of the State in which the store is located and the Asphalt Institute "Specifications for Paving and Industrial Applications (SS-2), information series documents IS 91 and IS 87.
- B. Design Requirements: (Based on 20-year pavement life)  
Daily Traffic: 1200 passenger vehicles, 10 single unit trucks, 2 multi-unit trucks
- C. Pavement to be designed and sealed by a professional engineer, using design requirements above and soil sub grade modulus recommended by soil consultant.
- D. Provide compaction tests of soil subgrade at not less than 1 test per each 2,500 sq.-ft. around the building.
- E. Asphalt cement materials shall conform to ASTM D-3515.
- F. Obtain materials from same source throughout project.
- G. At Walgreens discretion "suspect" installation will be tested, at Walgreens expense, for conformance to State D.O.T. Specifications by:
  - 1. Using proper rolling equipment for: Breakdown, compaction and finishing.
  - 2. Coring, extraction and gradation for compliance with approved job mix formula.
  - 3. Density testing to verify conformance to State Department of Transportation standards.Non complying installations will be replaced at the landlords/contractors expense.
- H. Pavement designs which differ from these indicated in this section must be accompanied with a letter from the design engineer certifying to Walgreens that the proposed design complies with the standards and specifications, of the Department of Transportation.
- I. Install pavement in the presence of the Quality Control Testing Consultant.

1.03 JOB CONDITIONS

- A. Establish grades, lines and elevations to drain water away from buildings, prohibit ponding and accommodate adjoining work and property.

- B. Subgrade Conditions: Provide subgrade improvements as required to correct adverse conditions caused by permeability, frost potential and unstable soils.

1.04 GUARANTEE

- A. Contractor shall guarantee in writing, the materials and workmanship in accordance with Section 01010, for a period of two (2) years, beginning on the date of substantial completion or Walgreens possession, which ever comes later. This provision also applies to concrete pavements.

1.05 SUBMITTALS

- A. Submit the following to the Architect of Record, Quality Control Testing Consultant, and Walgreens Project Architect
  1. Pavement design analysis prepared by a licensed Professional Engineer using the design requirements above and the sub-grade modulus recommended within the geographical report.
  2. Laboratory reports of compaction tests and proof rolling of soil sub-grade.
  3. Pavement Surface Smoothness tests.
  4. Approved pavement design mix.

PART II PRODUCTS

2.01 MATERIALS

- A. Asphalt Aggregate Mix: Plant-mixed, medium volume, hot laid asphalt-aggregate mixture AC 10 or AC 20 complying with ASTM D 3515 and as recommended by local paving authorities to suit project conditions and as follows:

<u>ASPHALT GRADE</u>	<u>TEMPERATURE CONDITION</u>
Use AC 10 for:	Cold, mean annual air temperature $\leq 7$ degree C (45 degree F)
Use AC 10 or AC 20 for:	Warm, mean annual air temperature between 7 degree C (45 degree F) and 24 degree C (75 degree F)
Use AC 20 for:	Hot, mean annual air temperature $\geq 24$ degree C (75 degree F)

- B. Plant Mixed Asphalt Base/Binder Course: Provide one course laid to a compacted thickness of 2 inches min. This is a minimum thickness. See Geotechnical Report for pavement design specification.
- C. Plant Mixed Asphalt Surface Course: Provide one course laid to a compacted thickness of 1-1/2 inches min. This is a minimum thickness. See Geotechnical Report for pavement design specification.
- D. Prime Coat: Cut back asphalt type; AASHTO M82, MC-30, MC-70 or MC-250. Apply material over compacted subgrade to penetrate and seal. Slow cure (SC) or rapid cure (RC) liquid asphalt may be used depending on weather/climate conditions. Cure as necessary.
- E. Tack Coat: Emulsified asphalt AASHTO M 140 or M 208: SS-1, SS-1h, CSS-1, CSS-1h, diluted with one part water to one part emulsified asphalt. Apply to contact surfaces of previously constructed asphalt.

2.02 MISCELLANEOUS PRODUCTS

- A. Pavement Marking Paint: FS-TT-P-1952, (Waterborne) Type II (adverse conditions), color; highway yellow or as required by local codes. Apply to 10.3 mil wet film thickness, 6.0 mil dry film thickness.
- B. Wheel Stops: Precast of 3,500 psi air-entrained concrete, approximately 6" high 9" wide, and 7'-0" long, with chamfered comers and drainage slots on underside. Secure with galvanized dowells.
- C. Delineation Post: FlexStake model SM-703-Y-W-W, 36" high, yellow, by FlexStake (800) 348-9839, 2150 Andrea Lane, Ft. Meyers, FL 33912.
- D. Security Bollard Cover: Polyethylene thermoplastic bumper post sleeve by Ideal Shield® (313-842-7290) or equal, color: as shown on the drawings.
- E. Stormwater Management Grates/Catch Basin Covers: Provide cast iron units with bicycle safe grates that will not allow bicycle tires to drop down into opening.
- F. Bicycle Racks: Provide undulating tubular steel by the following manufacturers or equal as approved by Walgreens Project Architect:
  - “Ribbon Rack” # RB 07 by AAA Ribbon® Rack Co.
  - “CycLoop” #2170-7 by Columbia Cascade
  - “Thunderbolt” #TB-7 by Creative Pipe, Inc.
  - “Heavy Duty Winder” #HW 238-7 by Madrax

Finish: Hot-dipped galvanized,  
Mounting: Permanent in ground mount.  
Capacity: 7 bicycles

2.03 BITUMINOUS CONCRETE

- A. Supply job-mix formulas, mix tolerances and control measures used.
- B. Type of Mixes
  - 1. The roadway base course shall be Class 1.
  - 2. The roadway surface course shall be Class 2.
  - 3. The curbing shall be Class 2.

2.04 ASPHALT MATERIALS

- A. Asphalt binder shall follow AASHTO MP 1 requirements.
- B. The tack coat shall follow AASHTO M 140 for emulsified asphalt or AASHTO M 208 for cationic emulsified asphalt. The tack coat shall be a suitable grade and consistency for the site and application.

2.05 SUPPLEMENTARY MATERIALS

- A. Follow ASTM D 3405 or AASHTO 301 for hot application joint sealer, single component, polymer-modified bituminous sealant.
- B. Pavement marking paint use Waterborne FS-TT-P-1952 Type II. Color shall be as required by local codes or yellow.

## PART III- EXECUTION

### 3.01 EXAMINATION

- A. Compact sil subgrade to 95% of standard proctor density. Proof roll and repair all unstable areas of the prepared subgrade..
- B. Compact subbase to 95% of standard proctor density. Proof roll and repair all unstable areas of the prepared subbase..
- C. Install pavement markings with mechanical equipment after pavement has been properly cured. Apply to 10.3 mil wet film thickness, 6.0 mil dry film thickness.
- D. Secure wheel stops to pavement with galvanized steel dowels.

### 3.02 PATCHING

- A. All cuts shall be vertical. All excavated material shall be removed. For bituminous concrete paving saw cut perimeter of patch and excavate the existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extend excavate 12 inches into the adjacent pavement, unless shown otherwise on the drawings. The existing aggregate base shall be re-compacted to form the new subgrade.
- B. The tack coat shall be applied uniformly to the vertical surfaces next to the new bituminous concrete paving at a rate of 0.05 to 0.15 gallons per square yard.
- C. After the area has been filled with bituminous concrete base, while it is still hot compact the area flush with the adjacent surface.

### 3.03 SURFACE PREPARATION

- A. Immediately prior to asphalt placement remove loose materials from the substrate surfaces and make sure that the subgrade is ready for paving. Making sure not to dislodge or disturb aggregate embedded in the compacted surface of the base course, sweep loose granular particles from the surface of the inbound aggregate base course. Compact subgrade to 95% of standard proctor density. Proof roll and repair unstable areas of the prepared subbase.

### 3.04 BITUMINOUS CONCRETE PLACEMENT

- A. For areas that are inaccessible to equipment place the bituminous concrete by hand, such that segregation of the mix does not occur. On prepared surface place bituminous concrete spreading it uniformly and striking it off. The thickness of each course is measured after it is compacted.
  - 1. The bituminous concrete base shall be placed in the number of lifts with the corresponding thickness shown on the drawings.
  - 2. The mixture shall be spread at a minimum temperature of 250° f.
  - 3. For crowned sections begin applying the mix along the centerline of the crown and on the high side for slopes.
  - 4. For a smooth, continuous surface free of pulls and tears regulate the paver machine speed.



- B. The minimum width of paving strips shall be ten feet, unless it is not practical due to site constraints. After the first strip, additional strips shall be placed overlapping the previous strip. The asphalt base course shall be completed prior to the placement of the asphalt surface.
- C. Fill any depressions with hot-mix asphalt to prevent segregation of mix and hand tool the surface smooth. Remove excess material to prevent high spots from forming. Fix any surface irregularities in the paving course behind the paver directly.

### 3.05 JOINTS

- A. Ensure a continuous bond between adjoining paving sections. Joints shall be free do depressions and of the same texture and smoothness as the rest of the bituminous concrete course.
  - 1. Prior to applying the tack coat to joints shall be cleaned.
  - 2. Longitudinal joints shall be offset a minimum of six inches in successive courses.
  - 3. Traverse joints shall be offset a minimum of 24 inches in successive courses.
  - 4. Follow AI MS-22 "Construction of Hot Mix Asphalt Pavements" for the construction of transverse joints.
  - 5. Joints shall be compacted as soon as the joint with bear the weight of the roller compactor without excessive displacement.
  - 6. Joints shall be compacted to within two percent of the specified course density.

### 3.06 COMPACTION

- A. Compaction shall begin as soon as the bituminous concrete paving with bear weight without excessive displacement. For areas that cannot be rolled due to site constraints compact with hand tampers, or vibratory-plate compactors. Compaction must be completed before the mix temperature cools to 185° F.
- B. Examine immediately the surface after breakdown rolling to check for crown, grade and smoothness for rolling joints and outside edges. Follow operational requirements for correct laydown and rolling operations.
- C. Immediately after the breakdown rolling continue intermediate rolling while the bituminous concrete is still hot enough to compact and continue until the specified density has been uniformly reached.
  - 1. Follow AASHTO T 245 for an average density of 96% of the reference laboratory test. The minimum shall be 94% and shall not exceed 100%.
  - 2. Follow ASTM D 2041 for theoretical density. The average shall be 92%, with the minimum 90% and the maximum 96%.

- D. A finish roller shall roll over the paved surfaces while the asphalt mix is still warm to remove any roller marks.
- E. Trim edges while the pavement is still hot. The edges shall be trimmed to proper alignment according to the drawings.
- F. Remove and replace any areas that are defective or contaminated with foreign materials. Follow above described placement procedures.
- G. Do not allow traffic on the new paved surface until it has cooled and hardened.
- H. Place traffic barricades around the newly paved area to protect it for traffic until it has hardened.

### 3.07 TOLERANCES

- A. The base course shall be installed to a tolerance of  $\pm 3/16$ " when tested with a 10' straight edge. The surface coat shall be installed to plus  $1/4$  inch, no minus allowed.
- B. Each course shall be compacted to produce smooth surfaces to comply with the following tolerances measured by using a 10 foot straight edge applied transversely and longitudinally to paved areas: Base course  $1/4$  inch, surface course  $1/8$  inch, crowned surfaces  $1/4$  inch (tested with right angle to crown).
- C. As directed by the Engineer unacceptable paving shall be removed and replaced.
- D. Ponding water will not be allowed. Cut out and replace areas which pond water. Not allowed at Walgreens.

### 3.08 PAVEMENT MARKING

- A. Verify with the Engineer paint layout and colors prior to pavement marking.
- B. The pavement must age 30 days prior to pavement marking.
- C. Apply paint to a clean surface. Loose materials must be sweep clean.
- D. Paint shall be applied with mechanical equipment to the dimensions indicated on the drawings. The applied paint shall have uniform straight edges. According to manufacturer's recommendations apply a minimum of 7.5 mils. of dry film.

### 3.09 FIELD QUALITY CONTROL

- A. The Owner will hire an independent testing and inspecting agency to perform field test, inspections. The testing agency will determine if the work complies with the requirements. If from the independent testing it is determined that remedial and or replacement work is necessary, the new work will be tested and the Contractors expense.
- B. Following ASTM D 3549 the thickness of the hot-mix asphalt courses will be measured.
- C. Surface Smoothness: Surfaces will not be acceptable if exceeding the following tolerances for smoothness when tested with a 10' straight edge.

1. Wearing Course Surface: 3/16".
  2. Pavement variation from true design elevation: 1/4".
  3. Areas which pond water for longer than 24 hours will be cut out and replaced with hot mixed asphalt.
- D. Where tests indicate noncompliance materials will either be removed or additional bituminous concrete will be added.

### 3.10 DISPOSAL

- A. All waste material shall be disposed of according to EPA regulations except for material to be recycled. Excavated materials shall not be allowed to accumulate on site.

END OF SECTION





SECTION 02600 – SITE MECHANICAL UTILITIES

PART I - GENERAL

1.01 DESCRIPTION

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1, General Requirements, shall be considered a part of this specification.
- B. Codes, Ordinances, and Permits: All permits, connection fees, tap fees, licenses, approvals, and other arrangements, including plumbing and riser diagrams, if required, shall be obtained by the contractor(s) at his expense. Should any changes be necessary in the drawings, or specifications, to secure such approval, this contractor shall include in his bid all costs for such changes to comply with these departments without extra costs to Walgreen Co. It will be this contractor's responsibility to provide all systems complete and operable.
- C. Scope of Work: Contractor shall furnish all materials, tools, equipment, labor, and services and pay all costs of whatever nature, as may be necessarily expended, for a proper workmanlike and fully operable installation, and completion of all site mechanical utility work beyond 5 feet from the building. The following complete piping systems shall be provided as applicable and noted:
  - 1. Fire Service Water or Combined Fire and Domestic
  - 2. Domestic Water
  - 3. Sanitary Sewers – Gravity Flow
  - 4. Storm Drainage – Gravity Flow
  - 5. Natural Gas
  - 6. Well – Irrigation Water Supply (The Engineer of Record (EOR) shall evaluate and submit a written economic justification. The EOR shall specify only when there is a Total Life Cycle Cost benefit, subject to Walgreens approval. )
  - 7. Well – Potable Water Supply ( Provide when public water is not available or the EOR shall submit a written economic justification and specify a potable water supply when there is a Total Life Cycle Cost benefit, subject to Walgreens approval. )
  - 8. Lift Stations (Walgreens prefers not to have lift stations. The EOR shall evaluate the need, indicate alternative solutions, and submit a written economic justification. The EOR shall show the proposed location on the site, indicate who is served by the lift station, who owns it, how it is monitored and who pays to maintain it. The EOR shall specify lift station(s) only when there is a Total Life Cycle Cost benefit, subject to Walgreens approval.)

1.02 SUBMITTALS

- A. The contractor(s) doing the site utility work shall submit product data for all material, equipment, trim and accessories.

1.03 QUALITY ASSURANCE

- A. At Walgreens discretion, any store where any of the site utility systems operation, installation or material is considered "defective" shall be inspected, at the Landlord's/Contractor's expense, using a video camera within the underground pipe. All necessary repairs shall be made at the Landlord's/Contractor's expense.

## PART II - PRODUCTS

### 2.01 FIRE SERVICE WATER OR COMBINED FIRE AND DOMESTIC

- A. Fire service water main and fittings 2 ½ inch diameter and larger in the ground shall be class 150 ductile-iron pipe, AWWA C151, with mechanical-joint or bell and plain spigot ends, AWWA C110 or C153. Material shall be FM approved and comply with applicable NFPA standards.
- B. If permitted by the Code and the authority having jurisdiction, the fire service water main and fittings 2 ½ inch diameter and over in the ground may be polyvinyl chloride plastic (PVC), AWWA C-900 be class 150 or 200 with bell end with gasket and spigot end. Solder shall have a 20% maximum lead content.
- C. Detector Check Valves, UL312 listed, iron body, 175 psi working pressure, with bypass water meter.
- D. Backflow preventer, reduced pressure principle type, AWWA C511, with strainer, double check valves, air gap between, test cocks and OS&Y isolation valves.
- E. Concrete Vault, precast, reinforced, 48 in. minimum inside length and width, Ladder, grey cast-iron frame and 24-inch minimum manhole cover, A16 loading, per ASTM C857/C858.

### 2.02 DOMESTIC WATER

- A. Domestic water main and fittings 2 ½ inch diameter and larger in the ground shall be class 150 ductile-iron pipe, AWWA C151, with mechanical-joint or bell and plain spigot ends, AWWA C110 or C153.
- B. Buried water main 2 inch diameter and under shall be ASTM B-88, Type “K” hard or soft copper pipe and ASTM B16.22 wrought copper or ASTM B16.18 Cast-copper alloy fittings.
- C. If permitted by the Code and the authority having jurisdiction, the domestic water pipe in the ground may be PVC, schedule 40, ASTM D1785 with schedule 40 socket type fittings ASTM D2466.

### 2.03 SANITARY SEWERS – GRAVITY FLOW

- A. Shall be standard weight grey cast-iron soil pipe with hub-and-spigot fittings conforming to ASTM 74 with ASTM C564 rubber gaskets.
- B. Standard weight ductile iron sewer pipe, ASTM A-746, with push-on joints may be used in lieu of cast-iron pipe and fittings.
- C. Where such use is acceptable to the authority having jurisdiction, pipes and fittings, may be SDR 35, schedule 40 PVC DWV sewer pipe and fittings, ASTM D-2321, with solvent cemented or gasketed joints per ASTM D3034 SDR 35. The manufacturer of the pipe and fittings shall furnish the solvent.
- D. Manholes shall be precast, reinforced concrete, 48 inch minimum inside length and width, complete with base, steps, eccentric top section and cast-iron cover with a 24-inch minimum ID.

### 2.04 STORM DRAINAGE – GRAVITY FLOW

- A. The specification for sanitary sewers applies
- B. Catch Basins shall be precast, reinforced concrete, 48 inch minimum inside length and width, complete with base, steps, eccentric top section and cast-iron grate with a 24-inch minimum ID, rated for traffic.

2.05 NATURAL GAS

- A. Piping shall be schedule 40 black steel pipe, ASTM A53, Type E or S, Grade B. Fittings shall be ASME B16.9, wrought steel butt-welding-type fittings or ASME B16.11 forged steel fittings. Pipe and fittings shall be wrapped with a polyethylene jacketed (PE) to minimize corrosion.
- B. Above ground pipe, 2-inch and smaller, fittings may be ASME B16.3, Class 150, and standard pattern malleable-iron fittings with threads.
- C. Underground piping, when permitted by Code and by the authorities having jurisdiction, may be polyethylene plastic (PE) ASTM D 2513 SDR 11 pipe, PE socket type ASTM D 2683 fittings or PE butt type ASTM D 3261 fittings and heat-fusion joints. Provide a tracer wire adjacent to PE pipe, terminated above grade, to facilitate locating the underground piping.
- D. Piping system shall be suitable for a working pressure of 100 psig.
- E. Comply with NFPA 54 for gas piping materials, components, installation, inspecting and testing.
- F. Include valves, gas pressure regulator(s) and all other appurtenances required.

2.06 WELL - IRRIGATION WATER SUPPLY

- A. General Description: Provide a well water system that is functional and located and constructed in such a manner that it yields water at all times and under all conditions. Provide complete with labor, casing materials, grout, well screen, and packing materials, well pump and all other accessories, controls and appurtenances as required for a complete operational system. The well shall be designed to supply the actual requirements of the irrigation system, not less than 20,000 gallons per month with a minimum constant flow of 5 GPM.
- B. Requirements Unique to Irrigation: Provide any and all Code and/or County Public Health Department requirements that are unique to irrigation water supply systems. This may include but is not necessarily limited to backflow prevention of chemical treatment for landscaping that could reverse flow into the water source below ground.
- C. Codes having Jurisdiction: The well water system shall be designed and provided in accordance with the applicable State, County and Local Codes. In any case, surface drainage shall not allow surface water to accumulate within a 15-foot radius of the well. The well shall not be closer than 10 feet to sewers, 50 feet to septic tanks or 75 feet to sewage seepage fields. The contractor performing the work shall be an experienced water supply well driller licensed in the jurisdiction where the Project is located. Comply with AWWA A100 for water supply wells.
- D. Geophysical Data: This information shall be obtained to determine the yield and quality of the water that is available. Review operating and test analysis of neighborhood well data. Take water sample (S) to verify the water is not contaminated and is safe for the environment, plants and people. Generally, a 4-inch minimum diameter well, shall be down to a deep aquifer layer of sand or gravel that will yield suitable water. Field report shall be prepared and retained that describe substrata formations, water-bearing formations, water levels, laboratory water analysis and well performance data.
- E. Well Casing: Provide a Code approved casing pipe material that allows water to enter and that keeps sand out. Casing shall comply with the applicable AWWA or ASTM standard. An approved well cap or seal shall be installed at the top of the well casing to prevent any vermin or other contamination from entering the well. Provide a well vent terminating at least 8 inches above grade, turned down with an insect screen. To prevent contamination, the annular space between the drill hole and the well casing shall be grouted in accordance with Code.
- F. Pump: An electric motor driven pump shall be placed at the bottom of the well to push water up to the surface. The pump shall be a vertical-turbine submersible type well pump, complying with AWWA E101, appropriate for the water service. The screen shall be fabricated of ASTM A 666, Type 304, stainless steel. All suction, discharge, vent and electrical lines shall enter the casing through a watertight seal. Water lines entering the building shall be buried below the frost line. A closed bladder type pressure storage tank shall be located inside a heated portion of the building

and sized to handle the instantaneous water demands and prevents short cycling of the pump. A water pressure sensor shall cycle the well pump.

#### 2.07 WELL - POTABLE WATER SUPPLY

- A. General Description: Provide a well water system that is located and constructed in such a manner that it yields safe water at all times and under all conditions. Provide complete with all accessories, controls and appurtenances as required for a complete operational system. The well system shall be designed to adequately supply the installed plumbing systems, not less than two times the average domestic water consumption of 10,000 gallons per month with an instantaneous demand of not less than two toilet flush valves totaling 50 GPM for 15 seconds. If an irrigation system is supplied from this potable well, the well water system shall adequately support the actual irrigation water requirements concurrently with the domestic water demand. The well water system shall be capable of replenishing the fire protection water storage system.
- B. Common Requirements: Paragraphs C through F. of the preceding "WELL - IRRIGATION WATER SUPPLY" specification applies to this "WELL - POTABLE WATER SUPPLY" specification.
- C. Requirements Unique to a Potable Well: Provide and comply with all Code requirements that apply to a potable well used for this commercial property to include but not necessarily limited to a design from a qualified engineer, a larger diameter outside casing, equipment to chlorinate, equipment to remove sulfur and other items deemed necessary by the authorities having jurisdiction.
- D. Disinfection: Provide an approved bleach-water solution until the well is thoroughly disinfected. Comply with AWWA A100 and AWWA C654

#### 2.08 LIFT STATION

- A. General Description: Provide a prefabricated or equivalent built-up Lift Station as shown in the plans and as specified herein complete with all accessories, controls and appurtenances and as required for a complete operational system. The pump shall be removable for inspection or service without the need to enter the wet-well. Each pump shall be fitted with a stainless steel lifting chain. The pump shall conform to applicable requirements of NEMA, IEEE, NEC, SWPA and the Hydraulic Institute and be UL listed. Factory test the complete assembly and provide a one-year warranty for material and workmanship.
- B. Product: The duplex submersible pumping units shall be self-contained, designed to operate in a partially or completely submerged condition. Bearings shall be permanently lubricated and have a minimum L10 Bearing life of 25,000 hours. Two independent mechanical seals shall be provided. The submersible motors shall be NEMA Design B. The pump casing, impeller, motor housing and base shall be cast iron.
- C. Prefabricated Fiberglass Basin: The assembly shall be airtight and laminated of commercial grade resins and glass fiber-reinforcing material to withstand a hydrostatic pressure of 120 pound per square foot. Provide an attached exterior valve box with a hinged steel cover that contains the discharge pipes, fittings, check valves and shut-off valves.
- D. Automatic Control System: House in a NEMA 4x stainless steel enclosure that includes the following: Main disconnect, motor starter/protector for each pump, top mounted flashing alarm light, audible alarm with silence switch, normal pump run Indicator, automatic pump alternator control, H-O-A selector for each pump, pump seal failure alarm, aux. contact for high-level alarm and phase monitor.
- E. Installation. Perform in accordance with manufacturers written instructions.
- F. Acceptable Manufacturers: Chicago Pump Co., Metropolitan Pump Co., Yeomans Chicago Corp. or Walgreens approved equal



2.09 LAWN SPRINKLER ( IRRIGATION ) PIPING

- A. Refer to Section 02900-2, Part II, 2.02 for the applicable specification

PART III – EXECUTION

3.01 EXCAVATING AND BACKFILLING TRENCHES

- A. Excavate trenches to a depth 4 inches deeper than bottom of finished pipe elevation.
- B. Provide bedding material, a graded mixture of gravel, crushed stone and sand, ASTM D2940, with 100 % passing a 1-inch sieve and not more than 8% passing a 0.075m sieve.
- C. Shape the trench bottoms to provide uniform bearing and support of pipe, fittings, bells, joints and barrels
- D. Over the pipe, in layers not exceeding 12 inches, place and compact suitable fill material that has no vegetation, trash and is free of particles larger than 1 inch

3.02 INSTALLATION

- A. Drawing plans, schematics and diagrams indicate general location and arrangement of piping systems. Install piping as indicated unless Code requires otherwise or necessary to avoid physical conflicts, etc.
- B. Piping in General: All pipes shall be run with proper grades. Pipes shall be installed with the correct pitch, free of sags and bends. The site utility contractor(s) shall consult with the construction superintendent before installation of pipe lines. Piping shall be run as shown on the drawings, but the construction superintendent reserves the right to direct slight changes to avoid conflict with other work at no change in cost to Walgreens.
- C. Cleanouts: Full-sized brass screw plugs, cleanout plugs shall be furnished and installed where required by Code and at every turn in the waste line greater than 45 Degrees.
- D. Install schedule 40 sleeves for pipes passing through concrete and masonry walls and concrete floors. Provide a 0.25 inch minimum annular space between sleeve and pipe, then fill with an elastic watertight sealant.

3.03 TESTING, FLUSHING AND CLEANING

- A. Fire Service Water Systems: Test at 1.5 times working pressure, 100 psi minimum, for two hours without more than 2 quarts of loss per 100 joints. Comply with NFPA 24 for testing and flushing
- B. Domestic Water Systems: Test at 1.5 times working pressure, 100 psi minimum, for two hours without more than 2 quarts of loss per 100 joints.
- C. Clean and disinfect water system with a chlorine solution in accordance with NFPA 24 and AWWA C657.
- D. Sewer Systems: 10 feet (minimum) hydrostatic for one hour without leakage.
- E. Irrigation Wells: Conduct a final pumping test after the well has been constructed, cleaned, checked for plumbness and alignment.
- F. Potable Wells: Conduct a final pumping test after the well has been constructed, cleaned, checked for plumbness and alignment. Engage a qualified testing agency to perform bacteriological, nitrate, physical and other chemical analysis of water from the finished well. Submit well water samples to a laboratory certified by the authority having jurisdiction. Make analysis according to the authorities having jurisdiction. Provide Walgreens the laboratory report that shows the water meets the required health and safety standards for the subject well(s).

- G. Lift Station: In the presence of an appropriate Walgreens representative, demonstrate the proper operation to include the alternator feature, alarms and backup pump operation. Instruct maintenance personnel on access, service and preventative maintenance recommendations.

END OF SECTION

+SECTION 02830 - CHAIN LINK FENCE

PART I - GENERAL

1.01 DESCRIPTION

- A. Furnish and install fence materials.
  - 1. The extent of fencing is shown on the drawings.
  - 2. Install privacy slats when opaque screening is required by municipality or Walgreens.

1.02 QUALITY ASSURANCE

- A. All work to be performed by a single firm specializing in chain link fences.
- B. All fence materials shall be manufactured by a single source.
- C. Comply with the recommendations of the Chain Link Manufacturers Institute and ASTM F-668.
- D. Install fencing in compliance with ASTM F-567.

PART II PRODUCTS

2.01 FENCE FABRIC

- A. Fabric: 9 gage (0.148") steel wires, 2" mesh with top selvages knuckled and bottom selvages twisted and barbed.
  - 1. Breaking strength: 1,290-lb minimum.
  - 2. Weight of metallic coating; 0.30 oz./ft<sup>2</sup> minimum zinc or zinc-5% aluminum alloy coating.
- B. Fabric Finish: Class 2a PVC coated steel chain link.
  - 1. PVC coating: 0.015-in. minimum thickness at any point, 0.025-in. maximum thickness at any point.
  - 2. Color: Black

2.02 FRAMING AND ACCESSORIES

- A. Steel Framework, General: Galvanized steel, ASTM A-123.
  - 1. Pipe: Type 1 or Type 2 round galvanized pipe.
  - 2. Zinc Coating: ASTM A-90
    - Type 1 not less than 1.8 oz./ft<sup>2</sup>.
    - Type 2 not less than 2 oz./ft<sup>2</sup>.
- B. Terminal, Comer, Pull and Gate Posts: 2.375" dia. (nom. o.d.) pipe.
- C. Rails and Post Braces: Not less than 1.66" dia. (nom. o.d.) pipe. Top rails in a continuous run shall not be less than 18 ft. long.

- D. Intermediate Posts: Not less than 1.90" dia. (nom. o.d.) pipe, spaced not exceeding 8'- 0" o.c.
- E. Gate Frames: Not less than 1.90" dia. (nom. o.d.) pipes with welded comers.
- F. Post Tops: Weathertight ornamental closure caps, fitting over each post, provide caps with loop to receive top rails.
- G. Tension Bars: Not less than 3/16" x 3/4 " and not less than 2" shorter than normal height of fabric being attached. Provide one for each end and gatepost, two at each comer of pull post.
- H. Tension Wires: 9 gage (0.148 in.) metallic coated core wire, breaking strength 1,290 lb, with class 2a PVC coating, color to match fence fabric.
- I. Ties or Clips: Sufficient quantity and strength to support fabric, but not exceeding 15" intervals at posts nor 24" intervals at top rails. Tie wire shall be 11 gage galvanized steel wire, finish to match fabric.
- J. Bands or Clips: ASTM F-626 galvanized steel in sufficient quantity to attach fabric and stretcher bars to all terminal posts at intervals not exceeding 15 ".
  - 1. Tension bands shall be flat or beveled steel, min. thickness after galvanizing of 0.078", min. width of 3/4" for posts 4"o.d. or less. Min. thickness after galvanizing of 0.108", min. width of 7/8" for posts larger than 4"o.d.
  - 2. Brace bands shall be flat or beveled steel, min. thickness after galvanizing of 0.108", min. width of 3/4". Attachment bolts shall be 5/16" x 1 1/4" galvanized carriage bolts with nuts.
- K. Top Rail Couplings: Galvanized, 6" min. length.
- L. Privacy Slats; Semi-rigid tubular PVC (polyvinyl chloride) or HDPE (high density polyethylene) inserts, with Ultraviolet inhibitors, installed vertically, each slat secured top or bottom with shelf locking track or continuous tubular insert. Winged inserts not acceptable.  
 Width: Slat shall be sized to fill the entire void between fence fabric links and block not less than 75% of the view through the fence fabric.  
 Tensile strength: 3,700 psi.  
 Flexural strength: 12,000 psi.  
 Impact strength: 4.0 ft-lb./inch @ C (73 F).  
 Acceptable styles: Hoover Fence Co. "Lock-Top Slat". Privacy Link Co. "Lite Link Slat", "Bottom-Lock Slat", "top-Lock Slat" or equal.  
 Color: To be selected by Walgreens

## 2.03 GATES

- A. Frames: Zinc coated conforming to ASTM F-1043 and/or ASTM F-1083. Coat welded joints in accordance with ASTM A 780. Install diagonal cross bracing to ensure rigidity.
- B. Gate fabric shall match fence fabric.
- C. Gate Hinges shall structurally support gate without sag, and allow gate to swing 180° without binding. Provide 1 1/2 pair per leaf.
- D. Gate Latches: Fork or plunger bar type for operation from either side of gate, with integral padlock eye. Single latch shall retain gate in closed position. Double gate latches shall be a drop rod or plunger bar, designed to engage a gate stop. Both leaves to be locked with single padlock.



## PART III EXECUTION

### 3.01 INSTALLATION

- A. Terminal Posts (end, corner and gate): shall be set at beginning and end of each continuous length of fence or horizontal alignments.
- B. Post Foundations: concrete, with hole diameters as shown, but not less than four times the largest cross section of post and hole bottom not less than 36" below finish grade. Crown concrete to shed water.
  - 1. Concrete: 2500 psi at 28 days  
Portland Cement: ASTM C-150.  
Aggregates: ASTM C-33, 1" max. size.  
Water: Drinkable.  
Slump: 3"  
Air Entrainment: 2% to 4%.
  - 2. Set bottom of posts 3" above bottom of hole.
- C. Posts: Set vertically, plumb and properly aligned.
- D. Top Rails: Run continuously through post caps, support at each end to form continuous brace from end to end, provide expansion couplings as necessary.
- E. Fence Fabric: Place on outside of enclosed area. Provide tension to remove slack and create a smooth uniform, sag free appearance. Secure to posts at intervals not exceeding 15" o.c and to rails at intervals not exceeding 24" o.c. Install fabric bottom 4" above finished grade. Fabric shall be continuous between terminal posts.
- F. Brace Assemblies: Install so posts are plumb when diagonal rod is under proper tension.
- G. Stretcher Bars: Thread through or clamp to fabric at 4" o.c. and secure to posts with metal bands spaced 15" o.c. max.
- H. Tie Wires: U-shaped conforming to diameter of pipe to which attached. Firmly clasp pipe and fabric and twist ends 2 full turns. Bend wire ends to minimize hazard to persons/clothing.

END OF SECTION



SECTION 02900 – LANDSCAPING/IMPROVEMENTS

PART I - GENERAL

1.01 DESCRIPTION

- A. Furnish and install landscape materials and a landscape irrigation system. The extent of landscaping shall be the minimum amount required for municipal approval. Provide materials, which require minimal maintenance and are geographically suited to their local and surrounding conditions.
  - 1. The extent of landscaping is shown on the drawings.
  - 2. Furnish and install the landscape irrigation system at all landscaped areas complete with all valves, controls, accessories and electrical components.
- B. Include all excavation, filling and grading required.
- C. Include sub-metering of landscape irrigation system.

1.02 QUALITY ASSURANCE

- A. All works to be performed by a single firm specializing in landscape work.
- B. All landscape materials shall be free of defects, disease, insects/larvae/eggs, injuries and disfigurement. Provide plant materials rated between 1 and 4 per OPALS (Ogren Plant Allergy Scale).
- C. Erosion Control: At landscaped slopes of 3:1 (horizontal: vertical) or greater, provide erosion control acceptable to Walgreens. Slopes greater than 3:1 must be identified on the site plans and approved by Walgreens Project Architect.
- D. Landscape Irrigation: a person licensed in the state in which the store is located shall design System. The system designer shall perform hydraulic and friction loss calculations to provide balanced pressure and flow and optimum operating efficiency.

1.03 SUBMITTALS

- A. Landscaping Plan; indicating placement of all materials including legends describing plant name and size.
- B. Irrigation Plan and Zone Map; Wall mounted 8 1/2" x 11" or 11" x 17", indicating location of all controls, piping, heads (including type), valves and connection to water service.
- C. Maintenance Manuals; indicating proper care of plant material and operation/maintenance of irrigation system.

1.04 GUARANTEE

- A. Warranty lawns after installation and for 30 days following acceptance of site by Walgreens.
- B. Warranty trees and shrubs for one year following acceptance of site by Walgreens. Maintain materials after installation and for 30 days following acceptance of site by Walgreens.
- C. Replace all unhealthy or dead plant materials found during warranty period.
- D. Warranty irrigation system materials and labor for one year following acceptance of site by Walgreens.

## PART II PRODUCTS

### 2.01 PLANT MATERIALS

- A. Topsoil: Provide friable natural loam, free from rocks, stones, weeds, brush, clay lumps, roots, twigs, litter and environmental contaminants.
- B. Trees and shrubs as indicated on the landscape plan.
- C. Sod: Provide strongly rooted drought resistant sod, not less than 2 years old, free of weeds and undesirable native grasses and machine cut to pad thickness of 3/4" (+ 1/4"), excluding top growth and thatch. Provide only sod capable of vigorous growth and development when planted (viable, not dormant).
- D. Weed Barrier Fabric: Provide black polypropylene sheet 27 mils thick, 4 oz./sq. yd., grab tensile strength per ASTM D-4632; 90LB (machine direction) 50 lbs. (cross machine direction). Provide DeWitt "Weed Barrier" or approval equal.
- E. Mulch: Provide minimum 2" thick layer of shredded bark mulch or rubber landscape mulch. Pine straw mulch is prohibited.
  - 1. Rubber Mulch: 95% passing a 1-1/2 inch sieve and not more than 5% passing a 1/2 inch sieve.
  - 2. Rubber Mulch Manufacturers: American Technologies, Inc. "RubberStuff", Ground Scape Technologies, "Ground Scape".  
Place Safe Surfacing, Inc.  
Rubber Resources, Inc. "Everlast"
- F. Pre-Emergent: Provide a mixture with active ingredients consisting of "a-a-a-trifluoro-2, 6-dinitro-n, n-dipropyl-p-toluidine" (1.75% of total mixture) and inactive ingredients (98.25% of total mixture). Manufacturer: "Green Gold" by Lebanon Chemical Corp. or equal.

### 2.02 IRRIGATION SYSTEM:

- A. Manufacturer: Provide products of one of the following:  
  
Hunter Industries, Inc.  
LR Nelson Corp.  
Rain Bird Sprinkler Mfg. Corp.  
The TORO Co., Irrigation Div.  
Weather-Matic Div./Telso Industries
- B. Pressure main lines piping from water source to zone valves: PVC plastic pipe complying with ASTM-D 1785, Schedule 40.
  - 1. Pipe shall be NSF approved, Type 1, Grade 1, PVC conforming to ASTM D1785. All pipe shall comply with ASTM D 2441 with an appropriate standard dimension ratio (SDR), solvent weld pipe.
  - 2. All PVC pipe shall bear the following markings:
    - a. Manufacturer's name
    - b. Nominal pipe size
    - c. Schedule or class
    - d. Pressure rating (PSI)
    - e. NSF
    - f. Date of extrusion



- C. Non-pressure lateral line piping (downstream from circuit valves): PVC schedule 40 with solvent weld joints.
  - 1. Pipe shall be NSF approved, Type 1, Grade 11 PVC conforming to ASTM D1784. All pipe shall comply with ASTM D2441 with an appropriate standard dimension ration (SDR).
  - 2. Except as specified herein, all requirements for non-pressure lateral line pipe shall be the same as for solvent-weld pressure main line pipe.
- D. PVC pipe fittings: All solvent weld fittings shall coform to ASTM D2466, schedule 40 and shall bear the manufacturer's name, material designation, size, applicable I.P.D., schedule and NSF seal.
  - 1. Threaded fittings shall conform to ASTM D2464, schedule 40.
  - 2. PVC gasketed fittings shall coform to aSTM D3139, gaskets shall conform to ASTM F477.
- E. PVC flexible pipe shall be pressure rated with standard outside diameters compatible with PVC IPS solvent weld fittings.
- F. PVC cement shall conform to ASTM D 2564. PVC cleaner shall comply with ASTM F656.
- G. Circuit Pipe (downstream from circuit valves): with PVC plastic pipe, ASTM D 2241, SDR 26, 160 psi or ASTM D 1785, Schedule 40
- H. Valves: Toro 252 Series solenoid vavles, flow range 5.0 to 180.0 gpm.
- I. Backflow Preventer: Manufacturers standard to suit project condtions.
- J. Sprinkler Heads: Manufacturers standard, to provide uniform coverage at available water pressure.
- K. Drip Tubing/Accessories: Manufacturers standard, self cleaning, self flushing pressure compensating components and polyethylene tubing with 12" or 18" dripper spacing.
- L. Automatic Controls: Provide exterior/interior boxes with locking covers.
  - 1. Transforms as required for low voltage system.
  - 2. Wiring: Not less that 15 gauge. Provide direct burial type for buried wire. Use waterproof wire nuts throughout.
  - 3. Circuit Control with switch for manual or automatic control of each circuit.
  - 4. Timing Device: 24 Hour, 7 day, weekly or biweekly and even/odd interval watering adjustment, with provision for manual or semi-automatic operation and hard wired rain sensor which will suspend watering when ground is wet from rain
- M. Rain Sensors: Provide hard wired units manufactured by one of the following; "Rain-Clík™" by Hunder Industries, "Rain-Trip™" by Neslon Turf or "RSD Series Rain Snesor" by Rain Bird®.

## PART III EXECUTION

### 3.01 PLANTING TREES/SHRUBS AND GROUND COVER

- A. Place materials in properly prepared holes, plumb, staked as required for proper growth. Remove burlap from root balls. Dish back soil as required to receive mulch collar.
- B. Plant ground cover not more than 24" O.C. Plant ground cover in areas too narrow or impractical for mowing grass or in areas where grass will not thrive (brick pavers acceptable to Walgreens may be considered as an alternate in these areas).
- C. Topsoil: Install 4 inches minimum depth at planting beds and lawn areas, 12 inches minimum below trees. In locations with high clay content, apply gypsum additives to break down the clay.
- D. Mulch: Install 2 to 3 inches thick in planting beds recessed 2 inches. Mulch shall be used only as tree collars and around shrubbery, but not to extend greater than 12 inches beyond the drip line of shrubbery unless specifically approved by Walgreens Project Architect. Do not install mulch on slopes exceeding 5:1 (horiz.: vert.)
- E. Weed control: Apply pre-emergent to mulch in planting areas to prohibit weed growth. If weeds appear in treated areas during the first year, landscaper shall return to remove all weeds at no cost to Walgreens.
- F. Weed Barrier Fabric: Apply to planting beds below mulch and to un-mulched areas to receive decorative cover (rock is prohibited). Do not install weed barrier fabric in areas to receive ground cover plantings.
- G. Remove and replace improperly pruned or misinformed stock.

### 3.02 PLANTING SOD:

- A. Do not install if sod is dormant or ground is frozen.
- B. Lay sod with tightly fitting joints, no overlaps with staggered strips to offset joints.
  - 1. Anchor sod on slopes to prevent slippage. Do not exceed 3:1 slope.
  - 2. Water thoroughly immediately after planting.

### 3.03 IRRIGATION SYSTEM

- A. Provide minimum water coverage as follows:
  - 1. Turf area 100%.
  - 2. Other planting areas 100%.
- B. Run under pavements and walks. Do not cut pavements or walks. All water lines under sidewalks or paving shall be sleeved. All wiring under paving shall be installed in conduit.
- C. Use dielectric fittings whenever dissimilar metals are joined.
- D. All wiring shall be installed using proper, code compliant practice and all wiring between controller and zone valves shall be continuous. All required splices, connections and terminations shall occur within water tight boxes with watertight connections.
- E. Zone valves shall not be located within 3 feet of any driveway, traffic aisle, island, etc., where they could be damaged by vehicles driving over the curbs.

- F. Testing: Perform operational testing and train store personnel on proper use.
- G. Place copy of zone map, with all zone valve locations shown and approved irrigation plan, in protective jacket, with the main control panel.
- H. Use pressure compensating dripper systems or pressure compensating low trajectory nozzles only in locations where water has high iron content and only at areas adjacent to buildings to prevent water spray and rust from staining buildings.
- I. Provide a ¾" dia. blow down drain tee to allow water to be blown from irrigation system.

END OF SECTION





SECTION 03310 - CONCRETE

PART I - GENERAL

1.01 DESCRIPTION

- A. The extent of concrete work is shown on drawings.
- B. Concrete curbs, gutters and walkways are included.
- C. Concrete curing and sealing is included.
- D. Concrete equipment bases as required.

1.02 QUALITY ASSURANCE

- A. Comply with the current edition of the following codes, specifications and standards:
  - 1. ACI 301 "Specifications for Structural Concrete for Buildings".
  - 2. ACI 302.1R "Guide for Concrete Floor and Slab Construction".
  - 3. ACI 304 "Guide for Measuring, Mixing, Transporting and Placing Concrete".
  - 4. ACI 318 "Building Code Requirements for Reinforced Concrete".
  - 5. ACI 117 "Specifications for Tolerances for Concrete Construction and Materials.
  - 6. Concrete Reinforcing Steel Institute, "Manual of Standard Practice".
  - 7. Floor slabs must be designed to support a minimum 100 PSF live load and shall not be less than 4 inches thick.
  - 8. ASTM C-94 "Standard Specification for Ready Mix Concrete".
  - 9. ASTM C-157 "Standard Test Method for Length Change of Hardened Hydraulic-Cement, Mortar and Concrete".
  - 10. ASTM E 1155-96 "Standard Test Method for Determining Floor Flatness and Levelness Using the F-Number System".
  - 11. ASTM F-710 "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring".
  - 12. ASTM F-1869-98 "Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride".
  - 13. ASTM C979-99 - Pigments for Integrally Colored Concrete.
  - 14. ASTM E 96-00 "Standard Test Methods for Water Vapor Transmission of Materials".
  - 15. ASTM E 154-99 "Standard Test methods for Water Vapor Retarders Used in Contact With Earth Under Concrete Slabs".
  - 16. ASTM E 1643-98 "Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth of Granular Fill Under concrete Slabs".
  - 17. ASTM E 1745-97 "Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs".

18. AASHTO T318 "Standard Method of Test for Water Content of Freshly Mixed Concrete Using Microwave Oven Drying".

B. Testing: Employ at the Contractors expense, a testing laboratory, acceptable to Walgreens, to perform the following testing. Slump, air content, water content and temperature tests must be performed with each set of compression test cylinders.

1. Compressive strength testing. Comply with ASTM C 31, ASTM C172-99, ASTM C39, and as follows:

- a. Provide 4 cylinders minimum from each day's pour.
- b. Provide 4 cylinders for each fifty- (50) cubic yards or fraction thereof poured on each date for slabs and foundations. Provide 3 cylinders for each one-hundred fifty (150) cubic yards or fraction thereof poured on each date for concrete paving and sidewalks.
- c. Samples shall be tested and reports provided for concrete samples at 7 days, 28 days and 56 days.

2. Flatness/Levelness Testing. Comply with ASTM E-1155, but provide a minimum of one line of sampling in two perpendicular directions through each structural bay.

a. Perform testing using a "Dipstick Profiler" within 72 hours of concrete placement.

3. Concrete not conforming to Walgreens Criteria or which fails required Quality Assurance testing, including Flatness/Levelness requirements, shall be removed and replaced at Walgreens discretion.

4. Slump testing: Comply with ASTM C143.

5. Water content testing: Comply with AASHTO T318.

6. Concrete Shrinkage testing: Comply with ASTM C-157.

### 1.03 SUBMITTALS

A. Submit concrete mix designs to Architect/Engineer of Record for approval with copies to the Quality Control Testing Consultant.

## PART II - PRODUCTS

### 2.01 FORMWORK

A. Construct formwork for all concrete, with plywood, metal or other panel-type materials to provide continuous, straight, smooth surfaces.

B. For site concrete: Use steel, wood or other suitable materials, free of distortion/defects of size/strength to resist movement and maintain vertical and horizontal alignment during placement.

1. Curves shall be uniform and free of form marks.

C. Form coatings: Use non-staining release agents that will not discolor, deface or impair finish or treatment of concrete.

## 2.02 REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615, grade 60, deformed.
- B. Epoxy - Coated Reinforcing Bars: ASTM A 775.
- C. Welded Wire Fabric Reinforcement: ASTM A 185 welded steel wire fabric, sheets only, rolled fabric prohibited.
- D. Reinforcement supports: Use chairs, spacers & bolsters complying with CRSI
  - 1. For slabs on grade use reinforcing support to ensure proper clearance/cover. Do not pull reinforcing through placed concrete.
- E. Joint Filler: Provide preformed joint filler at slab expansion joints, joints between floor slabs and walls and other isolation joints. Provide one of the following:
  - Precompressed, impregnated open cell foam.
  - Asphalt saturated fiberboard complying with ASTM D 1751.
  - Granulated cork between saturated felt or glass fiber felt complying with ASTM D 1752 type H.

## 2.03 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type I or Type II.
- B. Fly Ash: ASTM C 618, Type C or F, not to exceed 20% of cement content by weight. Do not use when ambient air temperatures are expected to be below 35 degrees F during the first 48 hours after placement.
- C. Aggregates: Normal weight: ASTM C 33 Light weight: ASTM C 330. Combined aggregate gradation shall be 8% to 18% for large tip size aggregates (1 ½ inches) or 8% to 22% for smaller tip size aggregates (1 in. or ¾ in.) retained on each sieve below the top size and above the No. 100.
- D. Water: Drinkable
- E. Air Entraining Admixture: ASTM C 260.
- F. Calcium Chloride: Any admixtures containing more than 0.1% chloride ions content by weight are not permitted.
- G. Water Vapor Retarder: Decay resistant materials complying with ASTM E 96 not exceeding 0.04 perms, ASTM E 154 and ASTM E 1745 Class A. Provide polyethylene sheet not less than 15 mils thick, Raven Industries "VaporBlock 15, Stego Industries 15 mil "Stego Wrap™ or W.R. Meadows Sealtight 15 mil "Perminator®".
- H. Chemical Hardener: Colorless solution of magnesium fluosilicate, zinc fluosilicate and wetting agent containing not less than 2 lb. fluosilicates per gallon. Acceptable Products: Sonneborn, Lapidolith®, Dayton Superior, Day-Chem Hardener™.
- I. Chemical Admixtures: Type A water-reducing, Type F and Type G high-range water-reducing admixtures shall comply with ASTM C494. Do not use in cold weather conditions.

## 2.04 CONCRETE DESIGN/PROPORTIONING

- A. Provide normal weight concrete as required by drawings as follows:
  - 1. 3,000 PSI minimum 28 day compressive strength or stronger as required by architect/engineer of record.

2. At interior slabs, provide concrete with ultimate shrinkage less than 0.05% as tested per ASTM C-157.
- B. Air Entrainment: Use air-entraining admixture resulting in concrete with air content at point of placement as follows:
1. Concrete exposed to freezing/thawing, deicer chemicals, or hydraulic pressure:
    - 4.5% (moderate exposure); 5.5% (severe exposure) 1-1/2" max. aggregate.
    - 4.5 % (moderate exposure); 6.0% (severe exposure) 1" max. aggregate.
    - 5.0% (moderate exposure); 6.0% (severe exposure) 3/4" max. aggregate.
    - 5.5% (moderate exposure); 7.0% (severe exposure) 1/2" max. aggregate.
  2. Other Concrete/Steel troweled interior floors: 3% maximum air.
- C. Water-Cement Ratio: Provide concrete with maximum water-cement (WC) ratios as follows:
- Subjected to freezing and thawing; WC 0.50. Subjected to deicers/watertight, interior floor; W/Cm 0.45.
- D. Slump Limits: Provide concrete with slump at point of placement as follows:
- Ramps and sloping surfaces: Not more than 3".
- Reinforced foundation systems: Not less than 2" and not more than 5".
- Slabs and other concrete: Not more than 5".
- Concrete containing HRWR admixture shall have a maximum slump of 6". The concrete shall arrive at the job site at a slump of 2: to 3", be verified, then high-range water-reducing admixture added to increase slump to approved level.
- E. Portland Cement Paving, Sidewalks and Curbs: 3,000 psi, concrete pads at drive-thru and trash areas = 4,000 psi, after 28 days curing.  
 Minimum thickness, 6".  
 Air Entrainment: 4% to 7%.  
 Slump: 4".  
 Water/Cement Ratio: Per article 2.04.C above.
- F. Alternate Floor Slab Mix:  
 General Contractor to provide alternate bid prices for adding the following items to the mix designs.
1. 4000 ¾" no air 4" slab  
 Slump 3 - 5"  
 Entrained Air 1 - 3%  
 Microfibers 1.5 lbs (eliminate wire mesh)  
 Eclipse 1.5 gal.  
 Water Cement Ratio .45
  2. 4000 ½" no air 5" slab  
 Slump 3 - 5"  
 Entrained Air 1 - 3%  
 Microfibers 1.5 lbs (eliminate wire mesh)  
 Eclipse 1.5 gal.  
 Water Cement Ratio .45



2.05 MISCELLANEOUS MATERIALS

- A. Accessible Ramps: Impart color with integrally colored concrete.
  - 1. Integral Concrete Color: Integral Red Color: (for accessible ramps) Natural or synthetic mineral oxides complying with ASTM C-979 blended at batch plant. Acceptable Products: Bayferrox iron oxide pigment by Bayer Corp., color #110 (4 lbs.).  
Davis Colors, Mix-Ready®, color Baja Red #160 (2 lbs.).  
Chromix® by L.M. Scofield Co., color C-22 Coral Red.  
ChemSystems, Inc., color #1345 (2 ½ lbs.)

PART III - EXECUTION

3.01 REINFORCEMENT

- A. Clean reinforcement of rust, mill scale, ice or materials which will reduce bond with concrete.
- B. Place reinforcement to obtain proper concrete coverage in top third of slab or 2 inches below top surface.

3.02 CONCRETE PLACEMENT

- A. Place concrete on/in properly prepared sub-base or forms. Place concrete slabs directly on water vapor retarder. Provide not less than 6 inches of prepared granular substrate between water vapor retarder and ground.
  - 1. Install water vapor retarder in compliance with ASTM E 1643.
  - 2. Lap joints 6 in. and seal with manufacturers adhesive or tape.
  - 3. Seal around all penetrations with manufacturers pipe boot or by wrapping with vapor retarder and taping.
  - 4. Repair all punctures and cuts using vapor retarder material laped 6 inches beyond damaged area and taped.
  - 5. Provide photo documentation of proper installation of vapor retarder.
- B. Construct slabs to correct level, maintain reinforcing in proper position.
  - 1. Float slabs with a highway straight edge in lieu of a conventional bull float.
- C. Do not place concrete on/in frozen substrate or forms.
- D. Pumping Concrete: Concrete may be placed by pumping if first approved in writing by the Architect/Engineer of Record for the proposed location. Pumped concrete shall only be placed in the presence of the Landlords Testing/Inspecting Agent.
  - 1. Equipment: Pumping equipment shall be of the size and design that ensures a continuous flow of concrete at the delivery end without separation of materials. Do not pump concrete through aluminum pipes.
  - 2. Concrete Mix: Shall conform to the architect of record's specified design requirements, except that mix may contain chemical admixtures to allow proper pumping. Include the specified high-range or mid-range water reducing admixture in the mix. Unless strictly controlled and anticipated in the development of the design mix, the addition of admixtures at the job should be prohibited.

### 3.03 JOINTS

- A. Contraction joints may be formed by saw cuts within 4 to 12 hours after finishing and before random shrinkage cracks form on interior slabs. Concrete surface shall not be torn or damaged by the blade. Joints spacing shall not exceed 30 times the slab thickness in feet. Joint patterns shall be generally square. Joint depth shall be ¼" slab thickness.
- B. Isolation joints: provide full depth at all locations where slabs adjoin walls, columns, foundations, drain piping, sprinkler mains, existing concrete or pavement, and other immovable objects. Provide "pinwheel" isolation joints at columns.
- C. Site concrete; at concrete pavements and curbs, provide contraction joints at 12' O.C. max. Joint patterns in pavements and sidewalks shall be generally square. At curbs provide full depth expansion joints at 100-ft. O.C. max., and at locations where straight curb runs change directions. At sidewalks provide weakened plane contraction joints not more than 5'-0" max. and expansion joints at 20-ft. O.C. max. Tool all edges. Install self-leveling sealant at all isolation/expansion joints.
- D. Ensure a continuous bond between adjoining paving sections. Joints shall be free of depressions and of the same texture and smoothness as the rest of the bituminous concrete course.
  - 1. Where possible joint existing pavement with previously placed joints.
- E. Sequence construction joints so that construction joints at side and end terminations of pavement are at locations where pavement operations are stopped for at least 30 minutes, unless pavement ends at an isolation joint.
  - 1. Galvanized steel or plastic keyway-section forms or bulkhead forms with keys shall be provided unless otherwise indicated. Keys shall be embedded a minimum of 1 ½ inches into concrete.
  - 2. Unless otherwise indicated, do not continue reinforcement through sides of pavement strips. Reinforcement shall continue across construction joints.
  - 3. Where indicated provide tie bars at sides of pavement.
  - 4. At places where fresh concrete is placed against hardened or partially hardened concrete surfaces use a bonding agent.
- F. Where indicated form isolation joints of preformed joint-filler strips for areas abutting concrete curbs, catch basins, manholes, inlets, walks or other fixed structures.
  - 1. Expansion joints shall be located every 20 feet.
  - 2. Joint fillers shall extend the full width of the joint.
  - 3. Joint filler shall terminate ½ inch below finished surface. If joint sealant is used it shall terminate one inch below the finished surface.
  - 4. If joint sealant is not indicated, place top of joint filler flush with finished concrete surface.
  - 5. If more than one length is required lace or clip the joint filler sections together.
  - 6. A temporary preformed cap shall be used to protect the joint filler during concrete placement. After concrete has been placed on both sides of the joint, the protective temporary cap can be removed.

- G. At joints where indicated install dowel bars and support assemblies. To prevent concrete bonding to one side of the joint lubricate or asphalt-coat ½ of the dowel length.
- H. Contraction joints shall be constructed at a depth equal to at least ¼ the concrete thickness.
  - 1. For grooved joints form contraction joints right after floating by grooving and finishing each edge of joint with groover tool to a radius of ¼ inch. After applying surface finishes repeat grooving of contraction joints. Groover marks shall be removed from concrete surfaces.
  - 2. For sawed joints form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Joints shall be cut 1/8 inch wide into concrete when cutting action will not tear or otherwise damage surface and before the surface develops random cracks on the concrete surface.
- I. Edges shall be tooled on gutters, curbs and joints in concrete after floating with an edging tool to a radius of ¼ inch. Repeat tooling of edges after applying surface finished. Tool marks shall be eliminated from concrete surfaces.

### 3.04 CONCRETE PLACEMENT

- A. Prior to concrete placement inspect form work, reinforcement. Notify other trades to allow installation of necessary work prior to concrete placement.
- B. Concrete shall not be placed on frozen surfaces. Remove any snow, ice or frost from subbase surface and reinforcement prior to concrete placement.
- C. Provide a uniform dampened condition at the time of concrete placement by moistening the subbase. Concrete shall not be placed around manholes or other structures until they are at the finished elevation and alignment.
- D. Follow ACI 304R for measuring, mixing, transporting and placing of concrete.
- E. Water shall not be added to concrete during delivery, during placement or at the site.
- F. In a continuous operation deposit and spread concrete between transverse joints. Concrete shall not be pushed or dragged into place or vibrators used to move concrete.
- G. Concrete shall be consolidated by the use of mechanical vibrating equipment, additionally hand-spading, rodding or tamping may be used. Follow the procedures in ACI 309R.
- H. Screed pavement surfaces with a straight edge and strike off. Begin initial floating using bull floats or darbies. A textured and uniform surface plane shall be formed before excess moisture or bleed water appears on the surface. The concrete shall not be further disturbed until finishing operations begin or spreading dry-shake surface treatments.
- I. For concrete placement in separate pours, do not allow equipment on new concrete until it has attained 85% of its 28 day compressive strength.
- J. Follow ACI 306.1 for cold weather placement. Frost, freezing actions or low temperatures can possibly reduce the strength or cause physical damage to the concrete. Take the following precautionary measures.
  - 1. When the temperature is expected to fall lower than 40° F uniformly heat water and aggregates before mixing to arrive at a concrete mixture temperature of not less than 50° F and not more than 80° F at placement point.
  - 2. Frozen materials or materials containing ice or snow shall not be used.

3. Unless approved in the mix design do not use calcium chloride, salt or other anti-freezing agents in the mix.

K. For hot weather placement follow ACI 305R.

1. The concrete mix shall be cooled to a temperature below 90° F at the time of placement. For temperature control chilled water or chopped ice may be used. The water equivalent of the ice must be calculated and subtracted from the total water amount. The Contractor may use liquid nitrogen.
2. Immediately prior to concrete placement cover steel reinforcement with water soaked burlap to reduce the steel temperature.
3. The subgrade shall be kept moist without standing water, soft spots or dry areas. Just prior to concrete placement use fog-spray on forms, reinforcement steel and subgrade.

### 3.05 CONCRETE FINISHING

- A. Do not wet concrete surfaces during screeding, initial floating or finishing.
- B. The second float finish shall begin when bleed water has disappeared on the concrete surface and the surface has stiffened enough to allow operation. The surface shall be floated either with a power-driven float or by hand if the area is small or not accessible to power units. The finish surfaces shall be true planes. High spots shall be cut down and low spots filled. The surface shall be refloated immediately to form a uniform granular texture.

### 3.06 CONCRETE PROTECTION AND CURING

- A. In excessively hot or cold temperatures protect concrete from premature drying. Follow ACI 306.1 and ACI 305R for cold and hot weather protection respectively.
- B. If surfaces are hot, dry or windy apply an evaporator retarder. Follow manufacturer's written instructions for application.
- C. After finishing concrete begin curing, but not before free water has disappeared from concrete surface.
- D. Cure the concrete by either moisture curing, moisture retaining cover, curing compound or any combination of these. If using a curing compound apply uniformly in a continuous operation by power spray or roller according to the manufacturer's written instructions. After a heavy rainfall re-coat if the rainfall is within 3 hours of initial application

### 3.07 PAVEMENT TOLERANCES

- A. Follow ACI 117 for pavement tolerances.
  1. Elevation tolerance is ¼ inch.
  2. Thickness tolerance is plus 3/8 inch and minus ¼ inch
  3. Surface tolerance gap below 10 foot long, unlevelled straight edge is maximum of ¼ inch.
  4. Joint spacing tolerance is 3 inches.
  5. Contraction joint depth tolerance is plus ¼ inch no minus allowed.
  6. Joint width tolerance is plus 1/8 inch no minus allowed.

3.08 REPAIRS AND PROTECTION

- A. If any concrete pavement is broken, damaged, defective or does not meet the requirements in this section it shall be removed and replaced.
- B. At the direction of the Engineer drill test cores when necessary to determine the magnitude of defective areas. In satisfactory pavement areas fill drilled core holes with portland cement concrete bonded to pavement with epoxy adhesive.
- C. Do not allow traffic on pavement for at least 14 days after placement. Maintain pavement as clean as possible, remove surface stains and spills as they occur.
- D. Concrete shall be swept clean not more than 2 days before substantial completion. Concrete shall be kept free of stains, discoloration, dirt and other foreign material.

3.09 FINISHING/CURING

- A. Provide a floor surface which is true and level and achieves "F Numbers" of  $F F = 30$  and  $F L = 20$  minimum overall composite and  $F F = 20$  and  $F L = 15$  minimum at any individual section, when tested in accordance with ASTM E 1155. Remove surface irregularities to provide a continuous smooth finish free of trowel marks and trowel patterns.
- B. All interior slabs to receive a smooth trowel finish,
- C. Provide moisture retaining covered curing of interior slabs for 3 days minimum using cover materials that limit moisture loss to not more than 0.055 g/cubic cm in 72 hours when tested per ASTM C-156. Use cover materials that will not stain or impart any texture to the concrete surface.
- D. Apply non-slip broom finish to exterior platforms, walks, steps, ramps and curbs. Tool all edges to 1/2" radius unless noted otherwise.
- E. Apply concrete hardener to exposed interior floors and exterior slab at recessed entrance.
- F. Floors to receive resilient flooring shall limit moisture vapor emission to not more than 3 pounds or 5 pounds per 1,000 square feet per 24 hours, depending on type of floor finish being installed, in compliance with ASTM-F- 1869.
- G. Patch all form holes resulting from removal of form ties. Form ties ends shall be sealed or coated to prevent future rusting from spalling the concrete patch.

3.10 REPAIRS

- A. Repair or replace broken, defective and stained concrete, and replace non-conforming concrete, all as directed by Walgreens.

END OF SECTION





## SECTION 04200 - MASONRY AND STONE

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

- A. Masonry work includes concrete unit masonry, brick masonry, calcium silicate masonry units and cast stone.

#### 1.02 QUALITY ASSURANCE

- A. All work shall conform to the standards of the Brick Institute of America and to codes having jurisdiction.
- B. Do not lay units that are wet or frozen.
- C. The project shall be bid to include cold-weather practices if project is to be constructed when temperatures could fall below 40°F (4°C).
- D. All brick shall be from a single manufacturer's production run.
- E. Calcium silicate or cast stone products, depending on which is selected, shall be provided by a single manufacturer.  
Use only one product throughout the project.  
The color of all stone products must match.  
Do not combine calcium silicate and cast stone products on the same project.
- F. Comply with ASTM C 1364 – Architectural Cast Stone and the Cast Stone Institute Technical Manual.
- G. Mortar and Grout Testing:
  - 1. Test grout in each type of wall construction in conformance with ASTM C 1019-02
  - 2. Inspect cores of fully grouted masonry reinforcing.

#### 1.03 JOB CONDITIONS

- A. Protection of Work:
  - 1. Cover top of wall or partially completed work with waterproof membrane at end of each day.
  - 2. Extend cover 24inches minimum down both sides, hold securely in place.
- B. Cold Weather Protection:
  - 1. Preparation: remove ice or snow from masonry bed by applying heat until top surface is dry to the touch.
  - 2. Remove all frozen or damaged masonry work.
  - 3. Do not use wet or frozen units.
- C. Construction Requirements While Work is Progressing:
  - 1. Air temperatures 40°F (4°C) to 32°F (0°C):
    - a. Heat sand or mixing water to produce mortar temperatures between 40°F (4°C) and 120°F (49°C).

2. Air temperatures 32°F (0°C) to 25°F (-4°C):
    - a. Heat sand and mixing water to produce mortar temperatures between 40°F (4°C) and 120°F (49°C).
    - b. Maintain mortar temperatures above freezing.
  3. Air temperatures 25°F (-4°C) to 20°F (-7°C):
    - a. Heat sand and mixing water to produce mortar temperatures between 40°F (4°C) and 120°F (49°C).
    - b. Maintain mortar temperatures above freezing.
    - c. Provide heat sources on both sides of wall during construction.
    - d. Provide windbreaks when wind exceeds 15 mph.
  4. Air temperatures 20°F (-7°C) and below:
    - a. Heat sand and mixing water to produce mortar temperatures between 40°F (4°C) and 120°F (49°C).
    - b. Provide enclosures and heat to maintain air temperature above 32°F (0°C).
    - c. Minimum temperature of units when laid; 20°F (-7°C).
- D. Protection requirements for completed work:
1. Mean daily air temperature 40°F (4°C) to 32°F (0°C):
    - a. Protect masonry from rain or snow with weather-resistive covering for 24 hours.
  2. Mean daily air temperature 32°F (0°C) to 25°F (-4°C):
    - a. Completely cover masonry with weather-resistive covering for 24 hours.
  3. Mean daily air temperature 25°F (-4°C) to 20°F (-7°C):
    - a. Completely cover masonry with insulating blankets or equal protection for 24 hours.
  4. Mean daily air temperature 20°F (-7°C) and below:
    - a. Maintain masonry temperature above 32°F (0°C) for 24 hours by using enclosures and supplementary heat or with electric heating blankets.

#### 1.04 SUBMITTALS

- A. Shop Drawings: Submit calcium-silicate unit and/or architectural cast stone manufacturers shop drawings, including profiles, cross sections, modular unit lengths, reinforcement if required, exposed faces, anchors and annotation of cast stone types and locations if required by Architect of Record.

#### 1.05 DELIVERY AND STORAGE

- A. Cast Stone and Calcium Silicate units; Store units in accordance with manufacturer's instructions to prevent damage or staining.
  1. Protect with waterproof covers and prevent condensation under covers.
  2. Prevent contact with dirt and splashing.

### PART II - PRODUCTS

#### 2.01 FACE BRICK (allow 8 weeks minimum lead time)

- A. Provide units complying with the following from each manufacturer:
  1. ASTM C 216.
  2. Size: Standard utility 3 5/8" x 3 5/8" x 11 5/8".
  3. Grade: SW

4. Type: FBS
- B. National Accounts: Walgreens has established National Accounts with Carolina Ceramics Brick Co:
    1. Carolina Ceramics Brick Co.
      - a. Product: "Walgreen's Heritage Wire Cut".
      - b. Territory: East and South:  
East; Michigan, Indiana, Ohio, Kentucky, Virginia, Pennsylvania, New York, Massachusetts, Maryland, Connecticut, New Jersey.  
South; North Carolina, South Carolina, Georgia, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, West Virginia, Delaware.
  - C. Provide special shapes at all non 90-degree corners.
  - D. Provide solid units with adjacent side finish at end units.
- 2.02 HOLLOW BRICK MASONRY (**Not used**):
- 2.03 CONCRETE MASONRY UNITS: Provide hollow load bearing block complying with ASTM C90, normal weight.
- Size: Nominal 16" long x 8" high  
Grade: N  
Type: II
- 2.04 SPLIT FACE CONCRETE MASONRY UNITS: Provide hollow load bearing block complying with ASTM C90, normal weight.
- Size: Nominal 16" long x 8" high Grade: N  
Type: II  
Integral Water Repellant Admixture:  
Grace Masonry Products DRY-BLOCK™  
Style/Color: Northern and Chicago Prototype; Northfield Block Company standard #21 or 205, CEMEX "Biltmore Tan #3546" or Walgreen approved equal.
- 2.05 CALCIUM SILICATE UNITS
- A. Provide Renaissance® Masonry Units manufactured by Arriscraft International, Inc. or Walgreens approved equal.
  - B. Calcium Silicate Units: ASTM C 73, Grade SW; solid units, pressure formed and autoclaved,  $3 \frac{5}{8}$ " x  $11 \frac{5}{8}$ " x  $23 \frac{5}{8}$ ", (or as indicated on plans) sandblasted and rockered finish (as indicated) on exposed faces and ends, "Nutmeg" or "Oyster" color.
    1. Compressive Strength: 6600 psi, to ASTM C 170.
    2. Absorption: 8.8 percent to ASTM C 97.
    3. Density: 129 lbs/ft<sup>3</sup> to ASTM C 97.
    4. Modulus of Rupture: 770 psi to ASTM C 99.
  - C. Fabricate calcium silicate masonry units to the following tolerances:
    1. Unit Length: plus-or-minus 1/16".
    2. Unit Height: plus-or-minus 1/16".
    3. Deviation from Square: plus-or-minus 1/16" with measurement taken using longest edge as base.
    4. Bed Depth: plus-or-minus 1/8.

## 2.06 CAST STONE

- A. Provide RockCast Architectural Series units manufactured by RockCast, Division of Reading Rock, Inc. or Select Stone series units manufactured by Continental Cast Stone Manufacturing, Inc.
- B. Cast Stone Units: ASTM C 90, machine cast,  $3\frac{5}{8}$ " x  $11\frac{5}{8}$ " x  $23\frac{5}{8}$ ", (or as indicated on plans) smooth face and split face finish (as indicated) on exposed faces and ends, RockCast "Buffstone" or Continental Stone color #1105".
  - 1. Compressive Strength: ASTM C 140, > 5,000 psi at 28 days.
  - 2. Absorption: ASTM C 140, < 5.0 percent at 28 days.
  - 3. Linear Shrinkage: ASTM C 426, < 0.065 percent.
  - 4. Density: ASTM C 140, > 120 lbs/ft<sup>3</sup>.
  - 5. Freeze-thaw: ASTM C 666, < 4.0 percent.
  - 6. Curing: in exposed chamber at 95 percent RH and 95 to 120 degrees F for 12 to 18 hours or yard cure for 350 degree-days.
- C. Cast Stone Materials
  - 1. Portland Cement: ASTM C 150, Type I or III, white or gray as required to match specified color.
  - 2. Coarse Aggregates: ASTM C 33 except for gradation, granite, quartz or limestone.
  - 3. Fine Aggregates: ASTM C 33 except for gradation, manufactured or natural sands.
  - 4. Pigments: ASTM C 979, except do not use carbon black pigments, inorganic iron oxide.
  - 5. Water Reducing, Retarding and Accelerating Admixtures: ASTM C 494.
  - 6. Water: drinkable.
  - 7. Reinforcing Bars: ASTM A 615, deformed steel bars, galvanized when less than  $1\frac{1}{2}$ " of material.
    - a. Galvanized Coating: ASTM A 767.
- D. Fabricate Cast Stone units to the following tolerances:
  - 1. Comply with the Cast Stone Institute Technical Manual.
  - 2. Cross Section: plus-or-minus 1/8".
  - 3. Unit Length: do not exceed length/360 or plus-or-minus 1/8" whichever is greater.
  - 4. Warp, Bow or Twist: do not exceed length/360 or plus-or-minus 1/8" whichever is greater.
- E. Water repellent: Apply Prosoco Sure Klean® Weather Seal Siloxane WB, Prosoco Sure Klean® Weather Seal Siloxane PD or Hydrozo Enviroseal® 7.

## 2.07 MORTAR AND GROUT:

- A. Provide mortar and grout complying with ASTM C 270 or ASTM C476 (for reinforced masonry) and requirements of architect of record. Type N based on proportion specification, unless type S is required by the engineer of record.



- B. Mortar shall be pre-blended and pre-packaged to produce mortar with the required properties when dispensed from a silo type dispensing system. On site batching of individual mortar materials is prohibited.
- C. MORTAR MATERIALS:
  - 1. Portland cement: ASTM C 150, type I.
  - 2. Masonry cement: ASTM C 91.
  - 3. Hydrated lime: ASTM C207, type S.
  - 4. Sand: ASTM C 144.
  - 5. Aggregates for grout ASTM C 404.
  - 6. Mortar color pigment: none
  - 7. Admixture: Comply with ASTM C-270. Anti-freeze compounds or those containing chlorides are prohibited.
    - a. Provide Grace Masonry Products DRY-BLOCK™ mortar admixture at all single wythe concrete masonry unit and hollow brick masonry walls.
  - 8. Water: drinkable.

## 2.08 ACCESSORIES

- A. Joint Reinforcement: Provide ASTM A 82 cold drawn steel wire with ASTM A 153, Class B2 hot-dipped galvanized coating, anchor type as required by the architect of record. Corrugated wall ties are prohibited.
  - 1. Provide Type 304 stainless steel anchors in coastal areas and highly corrosive environments.
  - 2. Cavity Walls with Insulation: provide units with adjustable double wire/eye or clips to hold insulation tight against block back up.
- B. Miscellaneous Materials: Flashing, weep products, control/expansion joint materials as required by architect of record.
  - 1. Acceptable concealed flexible flashing: 3 oz copper sheet bonded between two layers of asphalt waterproofed creped kraft paper, EPDM thru-wall flashing (40 mil min.).
  - 2. Acceptable weep products (brick masonry): Rectangular plastic tubes with insect screen and cotton wick, cotton wick cords, Mortar Net weep vent.
  - 3. Acceptable weep products (hollow brick masonry): cotton wick cords, Masonry Technology, Inc. "Core Vent".
  - 4. Cavity drainage system; provide Mortar Net™ at brick masonry and Mortar Net Block™ at block or hollow brick masonry walls.
- C. Cleaner: Prosoco Sure Klean® "600 Detergent" or "VanaTrol".

## PART III - EXECUTION

### 3.01 INSTALLATION

- A. Cut masonry units using motor-driven wet saws to provide clean, sharp, unchipped edges.  
Cut units as required to provide continuous pattern and to fit adjoining work. Use full-size units without cutting where possible.
  - 1. Pre-soak calcium silicate units using clean water, prior to cutting. Allow units to dry prior to placement
- B. Vertical Reinforcement; Provide inspection ports at all locations where vertical reinforcing is to be fully grouted within the unit core to allow confirmation that cores

have been fully grouted. Following inspection, close all inspection ports and make flush with surrounding masonry.

- C. Increase quantity of wall ties around perimeter of openings, at wall terminations and corners. Place wall ties within 8" of openings and edges of masonry.
- D. Pull calcium silicate and cast stone units from multiple cubes to minimize variation in color.

### 3.02 CONSTRUCTION TOLERANCES

- A. Variation from Plumb: Vertical lines, surfaces or columns, walls do not exceed 1/4" in 10' nor 1/2" up to 40'. For external corners, expansion joints, control joints and other conspicuous lines, do not exceed 1/4" in any story of 20' maximum. Vertical alignment of head joints not to exceed 1/4" in 10'.
- B. Variation from Level: For bed joints, parapets, horizontal grooves and other conspicuous lines, do not exceed 1/4" in any bay or 20' maximum.
- C. Variation of Linear Building Line: Do not exceed 1/2" in any bay or 20' maximum, nor 3/4" in 40' or more.
- D. Variation in Mortar Joint Thickness: Do not exceed joint thickness indicated by more than plus or minus 1/8".

### 3.03 LAYING MASONRY WALLS:

- A. Pattern Bond: Lay brick masonry in  $\frac{1}{3}$  running bond for utility size brick. Do not use units with less than nominal 4" horizontal face dimensions at corners or jambs.
  - 1. Lay exposed Concrete Masonry Units, Split Faced Masonry Units, Calcium Silicate units and Rock Cast units in running bond.
- B. Tool exposed joints slightly concave.
- C. Keep cavity in cavity walls clean of mortar drippings and debris.
- D. Hollow Brick Masonry Units:
  - 1. Shall be laid with full face and head joints to increase resistance to water penetration.
  - 2. Shall be flashed and weeped at wall base, below and above all wall openings and at tops of walls.
- E. Calcium Silicate and Cast Stone Units:
  - 1. Set in full bed of mortar.
  - 2. Fully bond intersections, external corners and vertical joints.
  - 3. Do not adjust units after laying. Where resetting is required, remove, clean units and reset in new mortar.
  - 4. Surface efflorescence and cracking are cause for rejection of individual delivered units.
  - 5. Do not apply sealer to calcium silicate units.

### 3.04 CLEANING

- A. After mortar is thoroughly set and cured, clean masonry completely using the “bucket and brush hand cleaning” method. Use only cleaning solutions approved by manufacturer of masonry units being cleaned. Apply cleaning solution in strict accordance with solution manufacturers written instructions. Do not use metallic tools to remove large mortar particles. Do not use muriatic acid. Do not sandblast.
- B. Test cleaning method on small inconspicuous area of each type of masonry to be cleaned, before full cleaning, to confirm masonry will not be damaged or discolored.
- C. Apply water repellent to Hollow Clay Masonry Units and Cast Stone Units after installation, cleaning and acceptance.

END OF SECTION



SECTION 04820 - REINFORCED UNIT MASONRY ASSEMBLIES

PART I - GENERAL

1.01 SECTION INCLUDES

- A. Concrete Block.
- B. Clay Facing Brick.
- C. Mortar and Grout.
- D. Reinforcement and Anchorage.
- E. Flashings.
- F. Accessories.

1.02 RELATED SECTIONS

- A. Section 03200 - Concrete Reinforcement: Reinforcing steel for grouted masonry.
- B. Section 04065 - Mortar and Masonry Grout.
- C. Section 05120 - Structural Steel.

1.03 REFERENCES

- A. ACI 530/ASCE 5/TMS 402 - Building Code Requirements for Masonry Structures; American Concrete Institute; 1992.
- B. ACI 530.1/ASCE 6/TMS 602 - Specifications For Masonry Structures; American Concrete Institute; 1992.
- C. ASTM A 82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement; 1995a.
- D. ASTM A 153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 1995.
- E. ASTM A 615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement; 1996a.
- F. ASTM A 616 - Standard Specification for Rail-Steel Deformed and Plain Bars for Concrete Reinforcement; 1996a.
- G. ASTM A 617 - Standard Specification for Axle-Steel Deformed and Plain Bars for Concrete Reinforcement; 1996a.
- H. ASTM A 641 - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 1992.
- I. ASTM A 706 - Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement; 1996b.
- J. ASTM B 370 - Standard Specification for Copper Sheet and Strip for Building Construction; 1992.
- K. ASTM C 67 - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile; 1996.



- L. ASTM C 90 - Standard Specification for Load-Bearing Concrete Masonry Units; 1996a.
- M. ASTM C 140 - Standard Test Methods of Sampling and Testing Concrete Masonry Units; 1996b.
- N. ASTM C 144 - Standard Specification for Aggregate for Masonry Mortar; 1993.
- O. ASTM C 150 - Standard Specification for Portland Cement; 1996.
- P. ASTM C 207 - Standard Specification for Hydrated Lime for Masonry Purposes; 1991 (reapproved 1992).
- Q. ASTM C 216 - Standard Specification for Facing Brick (Solid Masonry Units Made From Clay or Shale); 1995a.
- R. ASTM C 270 - Standard Specification for Mortar for Unit Masonry; 1996a.
- S. ASTM C 404 - Standard Specification for Aggregates for Masonry Grout; 1995.
- T. ASTM C 476 - Standard Specification for Grout for Masonry; 1995.
- U. ASTM C 652 - Standard Specification for Hollow Brick (Hollow Masonry Units Made From Clay or Shale); 1997.
- V. ASTM C 744 - Standard Specification for Prefaced Concrete and Calcium Silicate Masonry Units; 1996a.
- W. ASTM C 780 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry; 1996.
- X. ASTM C 1019 - Standard Method of Sampling and Testing Grout; 1989a (reapproved 1993).
- Y. ASTM C 1072 - Standard Test Method for Measurement of Masonry Flexural Bond Strength; 1994.
- Z. ASTM D 226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 1995.
- AA. ASTM E 447 - Standard Test Methods for Compressive Strength of Masonry Prisms; 1992b.
- AB. ASTM E 518 - Standard Test Methods for Flexural Bond Strength of Masonry; 1980 (Reapproved 1993).

1.04 SUBMITTALS

- A. See Project Manual - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate bar sizes, spacings, reinforcement quantities, bending and cutting schedules, reinforcement supporting and spacing devices, and accessories.
- C. Design Data: Indicate unit assembly strength in each plane, and supporting test data.
- D. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

- A. Comply with provisions of ACI 530/ASCE 5/TMS 402 and ACI 530.1/ASCE 6/TMS 602, except where exceeded by requirements of the contract documents.

1.06 PRE-INSTALLATION MEETING

- A. Convene one week before starting work of this section.

## PART II - PRODUCTS

### 2.01 CONCRETE MASONRY UNITS

- A. Concrete Block and Bond Beam Block: Comply with referenced standards and as follows:
1. Load-Bearing Units: ASTM C 90.
  2. Size: 7 5/8" x 7 5/8" x 15 5/8" for 8" CMU's
  3. Size: 7 5/8" x 11 5/8" x 15 5/8" for 12" CMU's
  4. Hollow block, Grade N
  5. Type II: Normal weight.
  6. Minimum Compression strength: Strength shall be as required for specified masonry strength (f'm) but not less 2500 psi on net area of block.
- B. Channel Block are not to be used.

### 2.02 BRICK UNITS

- A. Face Brick: Provide "Heritage Wite Cut" as manufactured by Carolina Ceramics. Conform to ASTM C216.
1. Size: Standard utility 3 5/8" x 3 5/8" 11 5/8".
  2. Grade: SW
  3. Type: FBS
  4. Minimum Compression Strength: 6000 psi on net section
  5. Provide special shapes at all non 90 degree corners
  6. Provide solidier units with adjacent side finish at end units.

### 2.03 MORTAR AND GROUT MATERIALS

- A. Mortar and grout: As specified in Section 04200.
- B. Water: Clean and potable.

### 2.04 REINFORCEMENT AND ANCHORAGE

- A. Reinforcing Steel: ASTM A 615 Grade 60.
- B. Reinforcing Steel To Be Welded: ASTM A 706, deformed low-alloy steel bars.
- C. Multiple Wythe Joint Reinforcement: Ladur type; ASTM A 82 steel wire, hot dip galvanized after fabrication to ASTM A 153, Class B; side rods with 9 ga. cross rods; width as required to provide not more than 1 inch and not less than 1/2 inch of mortar coverage on each exposure. See structural plans.
- D. Mechanically fastened anchors and hooks for cast stone products, submit to Architect for approval.

## 2.05 ACCESSORIES

- A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
- B. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding; 4 inch wide x by maximum lengths available.
- C. Building Paper: ASTM D 226, Type I ("No. 15") asphalt felt.
- D. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.
- E. Weep products: Rectangular plastic tubes with insect screen and cotton wick, cotton wick cords, Mortar Net weep vent.

## 2.06 PRECONSTRUCTION TESTING

- A. Testing will be conducted by an independent test agency.
- B. Clay Masonry: Test each type of clay masonry in accordance with ASTM C 67.
- C. Concrete Masonry: Test each type, class, and grade of concrete masonry unit in accordance with ASTM C 140.
- D. Mortar Mixes: Test mortars prebatched by weight in accordance with ASTM C 780 recommendations for preconstruction testing.
- E. Grout Mixes: Test grout batches in accordance with ASTM C 1019 procedures.
- F. Prism Testing: Test masonry prisms in accordance with provisions of ASTM E 447, Method B, for wall types scheduled.
  - 1. Prepare two sets of prisms for clay masonry prisms and concrete masonry prisms; test one set at 7 days and the other at 28 days.
  - 2. Clay masonry prisms: Height-to thickness ration of 5.0.
  - 3. Concrete masonry prisms: Height-to-thickness ratio of not less than 1.33 and not more than 5.0; apply correction factor per ACI 530.1/ASCE 6/TMS 602 for ratio other than 2.0.
- G. Flexural Bond Strength: Where scheduled, test masonry prisms per ASTM E 518, with tooled joints downward.

## PART III - EXECUTION

### 3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive masonry.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

### 3.02 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied for installation under other sections.
- B. Clean reinforcement of loose rust.

- C. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.
- D. Keep all concrete units protected from the weather.

### 3.03 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Concrete Masonry Units:
  - 1. Bond: Running.
  - 2. Coursing: One unit and one mortar joint to equal 8 inches.
  - 3. Mortar Joints: Concave.
- D. Brick Units:
  - 1. Bond: 1/3 Running.
  - 2. Coursing: Two units and two mortar joints to equal 8 inches.
  - 3. Mortar Joints: Concave.

### 3.04 PLACING AND BONDING

- A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- B. Lay hollow masonry units with face shell bedding on head and bed joints.
- C. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.
- D. Remove excess mortar as work progresses.
- E. Interlock intersections and external corners, except for units laid in stack bond.
- F. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- G. The maximum height of grouting the cavity space must not exceed 1 foot.

### 3.05 REINFORCEMENT AND ANCHORAGE

- A. Reinforcement Bars: Secure all reinforcement with vertical bar positioners and to avoid displacement during grouting. Minimum spacing between bars or to masonry surfaces shall be one bar diameter.
  - 1. Welding of splices is not permitted.
- B. Joint Reinforcement: Install horizontal joint reinforcement 16 inches on center.
  - 1. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
  - 4. Place continuous joint reinforcement in first and second joint below top of walls.

3. Lap joint reinforcement ends minimum 6 inches.

C. Strap Anchors: Reinforce stack bonded unit joint corners and intersections with strap anchors 16 inches on center.

### 3.06 CONTROL AND EXPANSION JOINTS

A. Do not continue horizontal joint reinforcement through control and expansion joints.

B. Form control joint with a sheet building paper bond breaker fitted to one side of the hollow contour end of the block unit. Fill the resultant core with grout fill. Rake joint at exposed unit faces for placement of backer rod and sealant.

C. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.

D. Form expansion joint as detailed.

### 3.07 BUILT-IN WORK

A. As work progresses, install built-in metal door frames and other items to be built into the work and furnished under other sections.

B. Install built-in items plumb, level, and true to line.

C. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.

1. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.

D. Do not build into masonry construction organic materials that are subject to deterioration.

### 3.08 TOLERANCES

A. Variation from Plumb: Vertical lines, surfaces or columns, walls do not exceed  $\frac{1}{4}$ " in 10' or  $\frac{1}{2}$ " up to 40'. For external corners, expansion joints, control joints and other conspicuous lines, do not exceed  $\frac{1}{4}$ " in any story of 20' maximum. Vertical alignment of head joints not to exceed  $\frac{1}{4}$ " in 10'.

B. Variation from Level: For bed joints, parapets, horizontal grooves and other conspicuous lines, do not exceed  $\frac{1}{4}$ " in any bay or 20' maximum.

C. Variation of Linear Building Line: Do not exceed  $\frac{1}{2}$ " in any bay or 20' maximum, nor  $\frac{3}{4}$ " in 40' or more.

D. Variation in Mortar Joint Thickness: Do not exceed joint thickness indicated by more than plus or minus  $\frac{1}{8}$ ".

### 3.09 CUTTING AND FITTING

A. Cut and fit for chases. Coordinate with other sections of work to provide correct size, shape, and location.

B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

### 3.10 LAYING MASONRY WALLS:

A. Pattern Bond: Lay masonry in  $\frac{1}{3}$  running bond for utility size brick. Do not use units with less than nominal 4: horizontal face dimensions at corners or jambs.



- B. Tool exposed joints slightly concave.

### 3.11 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests.
- B. Clay Masonry Unit Tests: Test each variety of clay masonry in accordance with ASTM C 67 requirements, sampling 5 randomly chosen units for each 5,000 square feet of wall installed.
- C. Concrete Masonry Unit Tests: Test concrete unit masonry in accordance with ASTM C 140, sampling 2 randomly chosen units for each 5,000 square feet of wall installed.
- D. Mortar Tests: Test each type of mortar in accordance with ASTM C 780 procedures.
  - 1. Test frequency: 2 samples for each 5,000 square feet of wall installed.
- E. Test and evaluate grout in accordance with ASTM C 1019 procedures.
  - 1. Test frequency: 2 samples for each 5,000 square feet of wall installed.
- F. Prism Tests: Test masonry and clay masonry in accordance with ASTM C 1072, E 447, and E 518 provisions; perform tests and evaluate results as specified in individual masonry sections.
  - 1. Test frequency: 2 samples for each 5,000 square feet of wall installed.

### 3.12 CLEANING

- A. Remove excess mortar and mortar smears as work progresses.
- B. Clean soiled surfaces with cleaning solution.
- C. Use non-metallic tools in cleaning operations.

END OF SECTION



## SECTION 05120 - STRUCTURAL METAL FRAMING

### PART I - GENERAL

#### 1.01 DESCRIPTION

- A. The work includes but is not limited to structural steel, steel studs, and miscellaneous fabrications.
- B. Comply with AISC "Code of Standard Practice for Steel Buildings and Bridges", latest edition. AWS D1.1 "Structural Welding Code".
- C. Comply with requirements of architect of record.
- D. Field alterations of structural steel are not allowed without written approval of the Engineer of Record.
- E. Miscellaneous Fabrications include but are not limited to railings, ladders, elevator hoisting beams (if applicable) and roof opening frames.

#### 1.02 QUALITY ASSURANCE

- A. Comply with AISC "Code of Standard Practice for Steel Buildings and Bridges", latest edition. AWS D1.1 "Structural Welding Code".
- B. Comply with AISI "Specification for the Design of Cold-Formed Structural Members".
- C. Comply with requirements of architect of record.
- D. Field alterations of structural steel are not allowed without written approval of the Engineer of Record.
- E. Field Quality Control
  - 1. An independent testing agency will perform field quality control tests.
  - 2. High-Strength Bolts: Provide testing and verification of field-bolted connections in accordance with AISC S329, testing at least 25 percent of bolts at each connection.
  - 3. Welded Connections: Visually inspect all field-welded connections and test at least 25 percent of welds using one of the following:
    - a. Radiographic testing per ASTM E 94 and ASTM E 142.
    - b. Ultrasonic testing per ASTM E 164.
    - c. Liquid penetrant inspection per ASTM E 165.
- F. Quality Control Testing; A certified AWS Weld Inspector shall inspect 100% of welded moment connections and 10% of all other welded connections. Manually torque test 10% of all bolted connections to verify correct tightness.

#### 1.03 SUBMITTALS

- A. Submit shop drawings to architect of record.

### PART II - PRODUCTS

#### 2.01 MATERIALS

- A. Structural Steel Shapes, Plates, Bars; ASTM A36, ASTM A992.
- B. Steel Pipe; ASTM A 501.
- C. Steel Tubing; Cold-Formed ASTM A 500, grade B; hot-formed ASTM A 501.
- D. Anchor bolts and fasteners, ASTM A 325 as required by architect of record. ASTM A 307 anchor bolts are acceptable in non-tension applications.
- F. Primer; Fabricators standard rust inhibiting primer.
- G. Steel studs and C joists, ASTM A653 structural quality, grade 33.
- H. All steel exposed to weather shall be hot dipped galvanized.
- H. Grout: Non-shrink, non-metallic aggregate type, with ASTM C 1107 and capable of developing a minimum compressive strength of 5,000 psi at 28 days (ASTM C 109), shall show no shrinkage (0.0%), maximum 4.0% expansion from time of placement until final set (ASTM C827) and .2% expansion in the hardened state (CRD C-621). Five Star Grout by US Grout Corp. or equal.

### PART III - EXECUTION

#### 3.01 ERECTION

- A. Set frames accurately to lines and elevations indicated. Level and plumb individual members within AISC tolerances. Comply with AISC specifications for bearing, alignment and welds.
- B. Touch-up paint all exposed and/or abraded areas after erection.
- C. Welds of all metal fabrications shall be ground smooth and prepared for final painting.
- D. All structural steel encased in concrete, masonry or in contact with earth shall be painted with bituminous paint.
- E. Hoisting beams for elevators shall be furnished and installed by General Contractor.

END OF SECTION

## SECTION 05250 - METAL JOISTS/METAL DECKING

### PART I-GENERAL

#### 1.01 DESCRIPTION

- A. The extent of steel joists, joist girders and metal decking is shown on drawings.

#### 1.02 QUALITY ASSURANCE

- A. Provide joists fabricated in compliance with the Steel Joist Institute (SJI) specifications and load tables for K-Series and KS-Series Open Web Steel Joists. Provide joist girders in compliance with SJI Specifications and Load Tables with G-Series joist girders.
- B. Provide metal deck in compliance with:
  - AISC "Specification for the Design of Cold – Formed Steel Structural Members".
  - AWS "Structural Welding Code".
  - SDI "Design Manual for Floor Decks and Roof DecksProvide roof deck which is listed in "Factory Mutual Approval Guide" for "Class I" fire rated construction.

#### 1.03 SUBMITTALS

- A. Submit shop drawings to Architect of Record.

### PART II - PRODUCTS

#### 2.01 JOISTS

- A. Steel: Comply with SJI " Specifications".
- B. Fasteners: ASTM A 325 or A490 structural bolts, nuts and hardened washers.
- C. Steel Primer Paint: Manufacturers standard.

#### 2.02 METAL DECKING

- A. Provide units of size and gauge as required by engineer of record.
- B. Steel for painted metal deck: ASTM A 1008 Grade C.
- C. Steel for galvanized metal deck: ASTM A 653, Structural Quality.
- D. Galvanizing: ASTM A924, G60.
- E. Miscellaneous shapes, extensions, connectors, closure strip, bracing as required by the architect of record.

### PART III - EXECUTION

#### 3.01 JOISTS:

- A. Do not start placement until supporting work is in place and secured.
- B. Comply with requirements of architect of record.
- C. Coordinate placement to eliminate conflict with all roof openings.



3.02 METAL DECK

- A. Place on supporting framework, adjust to final position accurately aligned and on proper bearing.
- B. Secure as required by engineer of record.
- C. Provide additional support, closers, etc. at all openings.

3.03 TOUCH-UP PAINT

- A. Touch-up all exposed or abraded joists and metal deck after installation.

END OF SECTION

SECTION 05421 - ENGINEERED LIGHT GAGE METAL TRUSS SYSTEM

PART I - GENERAL

1.01 SECTION INCLUDES

- A. Engineered light gage metal trusses.
- B. Cold-formed steel framing accessories.

1.02 REFERENCES

- A. AISI SG-671 - Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 1986 (with 1989 Addendum and 1990 Errata).
- B. ASTM A 370 - Standard Test Methods and Definitions for Mechanical Testing of Steel Products; 1996.
- C. ASTM A 653/A 653M - Standard Specification for Steel Sheets, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated by the Hot-Dip Process; 1996.
- D. AWS D1.3 - Structural Welding Code - Sheet Steel; 1989.
- E. FS TT-P-645 - Primer Paint, Zinc Molybdate, Alkyd Type; Revision B, 1990.

1.03 PERFORMANCE REQUIREMENTS

- A. Design system components in accordance with AISI reference; provide for movement of components due to thermal variations without damage, failure, or excessive stress on components.

1.04 SUBMITTALS

- A. See Project Manual.
- B. Product Data: Manufacturer's descriptive literature for each item of cold-formed metal framing and each accessory specified this section.
- C. Shop Drawings:
  - 1. Indicate special components and installations not fully dimensioned or detailed in product data.
  - 2. Indicate in placing drawings number, types, location, sizes, spacings, and gages of framing members.
  - 3. Indicate details of supplemental strapping, bracing, splices, bridging, and accessories required for installation. members and adjacent products
- D. Manufacturer's Instructions: Printed installation instructions for each item of cold-formed metal framing and each accessory specified in this section.
- E. Design Data: Calculations for loadings and stresses, bearing seal and signature of professional engineer registered in the State in which the Project is located.
- F. Mill Certificates for each type structural framing member, indicating the following information:
  - 1. Bare metal thickness of steel, measured to 1/1000 inch.

2. Yield strength of steel.
  3. Tensile strength of steel.
  4. Total elongation of steel in 2 inch gage length.
  5. Chemical analysis of steel.
  6. Thickness of galvanized coating, measured to 1/1000 inch.
- G. Design Criteria: As indicated on the contract drawings, listed under trusses.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Provide bracing for shop assembled units to prevent racking.
- B. Handle and lift shop assembled units in accordance with manufacturer's recommendations to prevent damage or distortion.
- C. Store shop assembled units in accordance with manufacturer's recommendations to prevent damage or distortion.

PART II - PRODUCTS

2.01 COMPONENTS

- A. Load Bearing Members: Cold-formed to indicated sizes, profiles, and thicknesses of mill-certified steel conforming to ASTM A 653/A 653M, minimum G60/Z180 coating, and as follows:
  1. Shapes: Indicated on shop drawings.
  2. Size: Indicated on shop drawings.
  3. Gage: Indicated on shop drawings.
- B. Miscellaneous Framing Components: For each type framing indicated, supply required or indicated items, including, but not limited to blocking, clip angles, shoes, reinforcements, purlins, fasteners, and anchors.
- C. Primer: Zinc-rich primer for galvanized surfaces conforming to FS TT-P-645.

2.02 FABRICATION

- A. Shop fabricate from cold formed steel components in accordance with shop drawings, using templates to ensure consistent component placement and alignment of components, and to maintain specified tolerances.
- B. Field fabrication of trusses is strictly prohibited.
- C. Shop fabrication of other cold formed steel framing components into assemblies prior to erection is permitted; fabricate assemblies in accordance with shop drawings and to specified tolerances.
- D. Fastening of components by welding, screw fasteners, or bolting is permitted; fasten components in accordance with shop drawings.
- E. Perform welding, if indicated, in accordance with AWS D1.3.

2.03 SOURCE QUALITY CONTROL

- A. Fabrication Tolerances: Steel for cold-forming:
  - 1. Nominal 20 gage members:
    - a. Minimum bare metal thickness: 0.0329 inch.
    - b. Maximum design thickness: 0.0346 inch.
  - 2. Nominal 18 gage members:
    - a. Minimum bare metal thickness: 0.0428 inch.
    - b. Maximum design thickness: 0.0451 inch.
  - 3. Nominal 16 gage members:
    - a. Minimum bare metal thickness: 0.0538 inch.
    - b. Maximum design thickness: 0.0566 inch.
- B. Truss Assemblies: Fabricate to tolerances of maximum variation from plumb, level, or true to line of 1/8 inch in 10 feet.
- C. Perform tests for mill certificates in accordance with ASTM A 370.

PART III - EXECUTION

3.01 EXAMINATION

- A. Verify that bearing surfaces and substrates are ready for construction activities of this section.
- B. Verify that rough-in utilities are in correct locations.
- C. Installer's Examination:
  - 1. Have installer of this section examine conditions under which construction activities of this section are to be performed, then submit written notification if such conditions are unacceptable.
  - 2. Transmit two copies of installer's report to Architect within 24 hours of receipt.
  - 3. Beginning construction activities of this section before unacceptable conditions have been corrected is prohibited.
  - 4. Beginning construction activities of this section indicates installer's acceptance of conditions.

3.02 INSTALLATION

- A. Field Welding: In accordance with AWS D1.3, and the following:
  - 1. Connections: Fillet, flat, plug, butt, or seam.
  - 2. Minimum steel thickness for welded connections: 18 gage.
- B. Field Fastening: Use minimum 2 fasteners per connection, unless otherwise indicated.

- C. Install metal truss system in accordance with manufacturer's instructions and shop drawings.
  - 1. Place components at spacings indicated on shop drawings, with indicated bracing and bridging.
  - 2. Install web stiffeners at reaction points if indicated on shop drawings.
- D. Touch up damaged coating surfaces; use specified zinc-rich primer.
- E. Installation Tolerances:
  - 1. Variation from Level: Maximum 1/8 inch (3 mm) in 10 feet (3050 mm).
  - 2. Variation from True Plane: Maximum 1/8 inch (3 mm) in 10 feet (3050 mm).
  - 3. Variation from True Position: Maximum 1/4 inch (6 mm).
  - 4. Variation of Member from Plane: Maximum 1/8 inch (3 mm).

END OF SECTION



SECTION 06100 - CARPENTRY

PART I - GENERAL

1.01 DESCRIPTION

- A. The work includes but is not limited to rough carpentry, wood trusses, finish carpentry and casework.

1.02 QUALITY ASSURANCE

- A. Wood Trusses; Comply with Truss Plate Institute recommendations and publications as applicable.
- B. Casework; Comply with Architectural Woodwork Institute "Architectural Woodwork Quality Standards" latest edition, section 400 as applicable, custom grade.

1.03 SUBMITTALS

- A. Wood trusses; submit shop drawings to architect of record.
- B. Casework; submit shop drawings to architect of record.
- C. Fire Retardant Treatment for Wood: Submit to architect of record and Walgreens; manufacturer, name of process and warranty terms.

PART II - PRODUCTS

2.01 LUMBER AND TRUSSES

- A. Comply with PS 20 "American Softwood Lumber Standard".
- B. Factory mark each piece of lumber with grade stamp evidencing compliance with grading rules and moisture content.
- C. Dress lumber; dressed S4S.
- D. Provide lumber with 19% moisture content at time of dressing.
- E. Provide grade and species as required by the architect of record.
- F. Provide treated lumber for exterior framing and as required by local codes.
- G. Provide fire treated lumber for all sheathing, blocking & trim.

2.02 SHEATHING & PANELS

- A. Roof Sheathing: Provide 5/8" minimum thickness fire retardant plywood, APA rated for exterior use. Oriented Strand Board (OSB) is not acceptable.
- B. Wall Sheathing:
  - 1. Plywood: APA rated for exterior exposure, fire retardant 5/8" minimum thickness. Oriented Strand Board (OSB) is not acceptable.
  - 2. Glass Mat Gypsum Boards: Dens-Glass Gold or Dens-Glass Gold Fireguard, by Georgia-Pacific Corp, or GlasRock™ by BPB America, Inc., 5/8" minimum thickness.
  - 3. Fiberock® Brand Sheathing, 5/8" minimum thickness, by U.S. Gypsum Company.

C. Plywood backing for telephone/electrical, fire retardant APA C-D plugged - in with exterior glue 3/4" minimum thickness, install with "C" face exposed.

D. Plywood backing for sales floor mirrors shall *NOT* be fire treated plywood.

#### 2.03 WOOD TREATMENT

A. Preservation Treatment: Comply with applicable standards of AWWA C2 (lumber) and C9 (plywood) and AWPB listed below

1. Pressure-treat above ground items with water-borne preservatives complying with AWPB LP-2. After treatment, kiln-dry lumber and plywood to a maximum moisture content, respectively, of 19% and 15%.
2. Pressure-treat ground or water contacting members complying with AWPB LP-22.

B. Fire Retardant Treatment: Comply with AWWA C-27 as applicable. Process shall not promote premature degradation of wood products in the conditions in which fire-treated lumber/panels will be installed.

1. Provide materials with maximum moisture content, after treatment, of 15% or less.
2. Manufacturer: Interior applications: provide "Dricon FRT" or "Hoover Pyro-Guard", with current warranty.

Exterior applications: provide "Dricon FRX exterior FRT wood or "Hoover Exterior Fire-X".

C. Fasteners: Provide stainless steel or hot-dipped-galvanized connectors/fasteners. Hot-dipped fasteners/connectors shall be continuous galvanized G 185 or G90 HDG per ASTM A-653, batch/post HDG per ASTM A-123 (connectors) ASTM A-153 (fasteners) or mechanical galvanized per ASTM B-695, class 55 or better.

#### 2.04 PLASTIC LAMINATE FABRICATIONS

A. All fabrications to be self edged with plastic laminate.

B. Countertops and sills: Comply with AWI standard 400, custom grade.

C. Plastic Laminate: 1/16" thick materials as follows:

1. Sill at pharmacy wall & sales area; Wilsonart #2970-6 "White Leather".
2. Employee Room countertop with back and side splashes: Wilsonart #2970-6 "White Leather", cabinet: Wilsonart #1573-60 "Frosty White".
3. Storefront stool: Wilsonart #2970-6 "White Leather".
4. Drive-Thru Casework: Laminate panel at drive-thru window removable knee wall countertop, side and back panels: Wilsonart # 1595-60 "Matte Black".

#### 2.05 MISCELLANEOUS

A. Closet/Storage Shelving: Comply with AWI 600, custom grade, paint finish.

B. Miscellaneous wood trim; Comply with AWI 300, custom grade, paint finish.

- C. Building Paper: ASTM D 226, Type I, 15 LB, non-perforated asphalt saturated felt.
- D. Hardboard: Opaque, grade II, tempered smooth one side, 1/4" thick.
- E. Cedar Fence: Western Red Cedar or White Cedar with band sawn textured surface.
  - 1. Posts: Galvanized steel posts, concealed on the show side (facing neighbors) by a wood board/picket. Provide ASTM A-90 zinc coating, Type I. Line posts shall be min. 2.375" (nom. o.d.). Corner and terminal posts shall be min 3.0" (nom. o.d.).
  - 2. Rails: Grade; Standard or Better per NLGA 122b, c, WCLIB 122b, c and WWPA 40.11.
  - 3. Boards: Grade; Custom Knotty per WRCLA.
  - 4. Sealer: Olympic Maximum™ Clear Waterproofing Sealant or Walgreen approved equal.

### PART III - EXECUTION

#### 3.01 GENERAL

- A. Securely and properly support and anchor all work to accurate fit, lines, level, and plumb without distortion.
- B. Install fire-retardant treated materials in environments and with proper ventilation to prevent degradation of wood materials.
- C. Metals in contact with pressure treated wood ie; blocking at metal deck, etc., shall be separated by a #15 felt paper.
- D. Do not cut or alter wood trusses members.
- E. Condition woodwork/casework to average prevailing humidity conditions in installation area prior to installing.

END OF SECTION



SECTION 07200 - INSULATION

PART I - GENERAL

1.01 DESCRIPTION

- A. Insulation work includes:
1. Insulation under slabs on grade.
  2. Foundation wall insulation.
  3. Board-type wall insulation, concealed.
  4. Sound attenuating batts specified in section 09250,
  5. Roof deck insulation specified in section 07500.

1.02 QUALITY ASSURANCE

- A. Comply with code required fire-resistance, flammability and insurance ratings.
- B. Construction assemblies shall achieve minimum aged "R" values as follows:
1. Roof = R-18 minimum. Insulation applied to back of suspended ceiling system is prohibited. Batt insulation shall not be attached to nor suspended below the roof deck. Required "R-value" shall be achieved in the construction above the roof deck.
  2. Walls - R-10 minimum. Install vapor retarders where required by state or local codes.

PART II - PRODUCTS

2.01 MATERIALS

- A. Bead board insulation is not acceptable.
- B. Extruded Polystyrene Board Insulation (cavity wall & foundation): Rigid, closed-cell, board complying with ASTM C-578-95 Type IV, minimum density 1.6 lb./cu. ft. with the following properties:
1. Compressive Strength: 25 psi minimum.
  2. Flexural Strength: 50 lbs/in. <sup>2</sup> min. (ASTM C203).
  3. Thermal Resistance: 5 year aged R-values of 5.4 and 5.0 min. °F-ft<sup>2</sup>-h/Btu<sup>2</sup>/inch at 40°F and 75°F respectively (ASTM C 518).
  4. Water Absorption: max. 0.1% by volume (ASTM C 272).
  5. Water vapor Permieance: 1.1 perm-inch max.
  6. Flame Spread: 5 (ASTM E 84).
  7. Smoke Developed: 45 to 165 (ASTM E 84).
  8. Size: manufacturer's standard lengths and widths.



9. Dimensional Stability: 2% max. linear change (ASTM D 2126).
- C. Extruded Polystyrene Board Insulation (Z-furring): Rigid, closed-cell, board complying with ASTM C-578 Type X with the following properties:
1. Compressive Strength: 15 psi minimum.
  2. Flexural Strength: 40 lbs/in.<sup>2</sup> min. (ASTM C 203).
  3. Thermal Resistance: 5 year aged R-values of 5.4 and 5.0 min. °F-ft<sup>2</sup> -h/Btu<sup>2</sup> /inch at 40°F and 75°F respectively (ASTM C 518).
  4. Water Absorption: max. 0.1% by volume (ASTM C 272).
  5. Water Vapor Permeance: 1.1 perm-inch max.
  6. Dimensional Stability: 2%max. linear change (ASTM D 2126).
  7. Flame Spread: 5 (ASTM E 84).
  8. Smoke Developed: 45 to 165 (ASTM E 84).
  9. Size: 23-7/8" manufacturer's standard lengths.
- D. Glass Fiber Batt Insulation:  
Inorganic (non-asbestos) fibers formed into semi-rigid batts; ASTM C665, Type III, Class B, reflective foil faced, with the following properties:
1. Water vapor permeance ≤ 0.05 perms per ASTM E 96.
  2. Water vapor sorption, 0.5% max. by weight ASTM C1104, R-value 11.
  3. Flame-Spread Rating / Smoke Developed: Provide rating of 25/50 respectively, ASTM E 84.
  4. Fire-Resistance Ratings: Where units are included in rated wall/ceiling/floor construction, provide mineral wool units which have been tested and rated as required for the indicated assembly.
- E. Mineral/Glass Fiber Blanket/Batt Insulation:  
Inorganic (nonasbestos) fibers formed into semi-rigid batts; ASTM C665, Type as indicated, densities of not less than 0.5 lb. per cu. ft. for glass fiber units and not less than 2.5 lb. per cu. ft. for mineral wool units, k-value of 0.27.
- Provide Type I unfaced where indicated, semi-rigid in where self-support is required.
- Provide Type II nonreflective vapor barrier faced units, barrier rating of 0.5 perms.
- Provide Type III reflective vapor barrier faced where indicated, aluminum foil barrier with rating of 0.5 perms.
- Flame-Spread Rating: Provide rating of 25, ASTM E 84.
- Fire-Resistance Ratings: Where units are included in rated wall/ceiling/floor construction, provide mineral wool units which have been tested and rated as required for the indicated assembly.
- F. Glass Fiber Board Insulation: Glass fibers and water-resistant binders formed into rigid or semi-rigid boards; FS HH-I-558, Form A; k-value of 0.26.

2.02 AUXILIARY INSULATING MATERIALS

- A. Polyethylene Vapor Retarder: Film of 4 mil. And 15 mil. thickness as indicated on drawings and specifications with vapor transmission rating of 0.2 perms,

PART III - EXECUTION

3.01 INSTALLATION

- A. Extend insulation full thickness over entire area to be insulated. Cut and fit tightly around obstructions.
- B. Set vapor barrier faced units with vapor barrier to warm side of construction, except as otherwise shown. Do not obstruct ventilation spaces, except for firestopping.
- C. Rigid board insulation shall be installed only in concealed locations.

3.02 VAPOR RETARDERS

- A. Extend vapor retarders to extremities of areas to be protected. Secure in place. Extend vapor barriers to cover miscellaneous voids in insulated substrates.
- B. Repair punctures and tears in vapor retarders before concealment by other work.

END OF SECTION



SECTION 07410 - METAL SIDING SOFFITS AND TRIM

PART I - GENERAL

1.01 DESCRIPTION

- A. Work includes an interlocking metal panel system installed at the gable returns of the Neighborhood Prototype and metal siding.

1.02 QUALITY ASSURANCE

- A. All panels and accessories are to be factory formed, finished and packaged.
- B. Applicator shall have five years minimum experience applying these types of panels.
- C. Comply with local codes for installation of metal panel soffit system.

1.03 WARRANTY

- A. Provide manufacturers standard twenty year finish warranty.
- B. Panel installer shall issue a two year weather tight and workmanship guaranty.

1.04 SUBMITTALS

- A. Submit complete shop drawings, details, product data and material sample to Architect of Record.

PART II - PRODUCTS

2.01 SOFFITS (at Neighborhood Prototype gable returns only)

- A. Manufacturers: ATAS International, Inc., McElroy Metals, Inc.
- B. Panel: ATAS "Wind-Lok™" WLV-120 or McElroy "Matrix" vented soffit panel with integral lock and seam design.
  - 1. Gauge: 0.032.
  - 2. Color: Kynar 500® Sandstone White.
  - 3. Length: Manufacturers standard 12 ft., depth; 7/16 inch.
- C. Fabrication: Fabricate panels, trim and accessories to allow controlled expansion in running lengths in relation to system components, adjoining materials, flashing and wall construction.

2.02 SIDING

- A. Panel (at tower and gable end wall): ATAS International, Inc "Opaline™" or Dimensional metals, Inc. (DMI) "Flush Panel" or Walgreens approved equal.
  - 1. Panel code: Atas OPF 080, joint style "C" (no reveal), DMI #FP-1008.
  - 2. Gauge: 24 ga. G-90 galvanized steel.
  - 3. Panel Width: 8 inches.

4. Texture: Smooth.
  5. Finish: Kynar 500® color to match adjoining "Rosewood" brick color.
- B. Panel (at rear of entry tower): Prefinished "M" profile, steel sheet
1. Manufacturer: Berridge Manufacturing Company  
Material Building Components, Inc. (MBCI), DMI "R" panel or approved equal.
  2. Gauge: 26 ga.
  3. Color: Kynar500® manufacturers standard color that most closely matches the color of the adjoining finished wall. Galvanized finish acceptable in areas not readily visible from within the site.

### 2.03 TRIM & ACCESSORIES

- A. Soffits: (at Neighborhood Prototype gable returns only)
1. Factory formed in standard 12-ft. lengths. Color to match panels.
  2. Provide all trim, closure strips, etc. required for proper installation.
  3. Anchorage: Anchor in compliance with manufacturers instructions.
- B. Siding:
1. Manufacturers standard fasteners, brackets, clips, furring strips, spacers, flashings, closures, weather-stripping, joint sealers, sealants, expansion control, etc. as required for complete weathertight installation.
  2. Anchorage: Comply with manufacturers instructions.

## PART III - EXECUTION

### 3.01 INSTALLATION – Soffits

- A. System shall be installed level and true to line.
- B. Panel system shall not come in contact with dissimilar materials, which will cause harmful reactions between the metals and/or finish.
- C. Panels shall be fully interlocked with its adjacent panel.
- D. Install system to prevent bending, buckling, twisting, abrasion, scratching, denting, etc. Only minor scratches may be touched-up in field.

### 3.02 INSTALLATION - Siding

- A. Separate dissimilar metals with coat of bituminous paint, concealed on one or both sides.
- B. Anchor components securely in place. Use fasteners recommended by panel manufacturer. Accommodate thermal and structural movement. Use gasketed fasteners to prevent electrolytic action between metals.

- C. Tolerances: Erect work level and plumb with variance not exceeding 1/4 inch in 20 ft in any direction.
- D. Align vertical joints where Drive-Thru gable end panels adjoin fascia band immediately below.

3.03 PERFORMANCE

- A. Load Capacity: Normal uniform loading of 20 psf inward and outward without failure or as required by local authorities/conditions.
- B. Deflection: Maximum of 1/180 for simple span, loaded as indicated or as required by local authorities/conditions.
- C. Water Penetration: No uncontrolled leakage under spray test and 4 psf air pressure differential.

3.04 CLEANING

- A. Completed system shall be clean and free from grease, stains and finger marks.

3.05 PROTECTION

- A. Protect work to be free from damage at time of Walgreens acceptance and completion of entire project.

END OF SECTION





SECTION 07500 - MEMBRANE ROOFING

PART I - GENERAL

1.01 PROJECT REQUIREMENTS

- A. The roofing system to be installed shall comply with this section together with Sections 07510 or Section 07520 of the Walgreens Criteria Specification. The membrane manufacturer and products approved for use are listed in these sections.
- B. Prior to Walgreen's acceptance of the completed roofing installation, the General Contractor shall have the roof inspected by the Walgreen's Roof Consultant.

Walgreen's Roof Consultant:                    RRK Associates, LTD  
Commercial Industrial Roof Consultants  
900 Tri-State Parkway, Suite #800  
Gurnee, IL 60031  
Attn: Guy H. Snowden Jr.  
Phone: 847-856-8420  
Fax: 847-856-8421

- C. The General Contractor and/or Roofing Contractor shall notify Walgreen's Roof Consultant upon completion of the roof membrane installation, including all sheet metal and related items, to schedule a final roof inspection. Upon inspection of the completed installation by both the membrane manufacturer and Walgreen's Roof Consultant, a letter of acceptance shall be furnished to the Developer and Walgreen Company Roofing Consultant prior to final payment to the Roofing Contractor.
- D. Provide fully adheared EPDM roofing membrane assembly as listed in Section 07530.
- E. Emissivity and Solar Reflective Index (SRI): Thermoplastic roofing systems complying with Section 07535 will be accepted only when State or local code requirements for Emissivity and Solar Reflective Index cannot be met by the modified bitumen, built-up or EPDM roofing systems specified in Sections 07510, 07520 and 07530. Confirmation and proof of local code requirements related to Emissivity and SRI must be submitted prior to and are a condition of acceptance of thermoplastic roofing systems by Walgreens
- F. All sheet metal details, including copings, related to roofing membranes installed under sections 07500, 07510, 07520, 07530 and 07535 shall be installed by the roofing contractor and shall be covered under the roofing contractor's 5 year Workmanship Warranty.

1.02 QUALITY ASSURANCE

- A. Installer Certification: Upon request by Walgreen Company, obtain written certification from roofing system manufacturer that installer is approved by manufacturer to install the specified roofing system.
- B. Insurance Certification: Provided completed systems which are listed for UL (Underwriter Laboratories) Class A external fire exposure and FM (Factory Mutual) Class I wind resistance and internal fire construction.
- C. The roof shall be constructed of double layers roof insulation to achieve the specific "R-Value" provided by the insulation types and thickness specified for each roof system. Insulation components may vary by roof membrane system and shall be supplied and installed as specified to achieve or exceed minimum thermal value requirements. Comply with local codes if higher "R-Values" are required.

- D. Fabrication of sheet metal roofing accessories shall conform to applicable SMACNA, NRCA and membrane manufacturer's published details and requirements.
- E. Slope: Roof shall slope at 1/4"/Ft. minimum, achieved in the deck structure. All saddles shall be constructed at twice the slope of the deck.
- F. Final inspection of the completed roof shall be scheduled with Walgreen's Roofing Consultant and the inspection completed prior to final payment to the roofing contractor.
- G. Prior to final acceptance, complete all roofing punchlist work indicated by RRK & Associates. Upon completion, submit to Walgreens and RRK & Associates a letter stating that all punchlist work has been properly completed together with photographs of the completed repairs. All work must comply with Walgreens Criteria. Manufacturers details shall not override Walgreens Criteria without prior approval by Walgreens and RRK & Associates.

1.03 SUBMITTALS

- A. Furnish complete roof system submittals to the Architect of Record and Walgreen's Roofing Consultant for review and approval, including all membrane materials, insulations, mechanical fasteners, bitumen types, sheet metal, accessories, related components and contractor's Certification from the membrane manufacturer. A copy of the warranty shall also be submitted for approval. Submittals shall be received not less than one month prior to starting the project. No work shall commence until the General Contractor and Roofing Contractor have received approved roofing system submittals. Walgreen Company shall, at its discretion require copies of roofing submittals.
- B. The General Contractor shall submit to the Walgreen Roof Consultant the roofing submittal form attached to the end of this section prior to the installation of the new roofing system. The submittal form shall be sent to the Walgreen Roofing Consultant no later than two weeks prior to the application of the new roofing system for review and approval.

1.04 JOB CONDITIONS

- A. Install roofing work in strict compliance with manufacturer's requirements.
- B. The contractor shall prepare and coordinate roofing work to accept the installation of Walgreens supplied equipment including but not limited to refrigeration equipment and satellite dish and those systems related support rails, curbs, pipe portals, etc.

1.05 WARRANTY

- A. Provide manufacturers 15-year warranty, which begins after the date of substantial completion, and covers the roofing membrane, associated flashing, roof insulation, roof accessories, vapor barrier (if any) and labor utilized in the installation of the warranted materials. The 15-year warranty shall cover the entire roof system and all related components with no monetary limit, with non-prorated coverage as issued by the membrane manufacturer. The roofing contractor shall provide a 5 year workmanship and watertight warranty independent of the membrane manufacturer's 15 year warranty.
  - 1. Warranty to be signed and countersigned by manufacturer and installer with a copy provided to Walgreen Company.
  - 2. Upon delivery of possession of the lease premises to the Tenant, Landlord shall cause all contractor's, subcontractor's, and manufacturer's warranties and guaranties relating to the leased premises to be assigned to Tenant, or the extent not assignable, then to be issued in Tenant's name.
  - 3. The 5 Year Workmanship Warranty shall cover all sheet metal work, including copings, related to the membrane roof installation

## PART II - PRODUCTS

2.01 See sections 07530.

### 2.02 PARAPET MEMBRANE

- A. Parapet membrane: Provide roofing system being used on building if approved by roofing manufacturer or use a fully adhered 45 mil. thick, black EPDM single ply roofing membrane. Extend membrane up and over top of perimeter walls.

## PART III - EXECUTION

### 3.01 INSTALLATION (see sections 07530 for system specific requirements)

- A. Install roof system in strict compliance with manufacturer's instructions.
- B. Provide saddles/crickets at all curbs and equipment bases to push water around curbs.
- C. Protect all adjoining and finished surfaces, including, but not limited to walls, glazing systems, pavements, walks and landscaping. Repair damaged areas to "as new" condition at no cost to Walgreen Company.
- D. Provide prefabricated jackets and/or pipe portals, weather tight and insect proof, at all pipe clusters. The use of pitch pockets, or sealant pockets are strictly prohibited on Walgreen Company roofs. All soil stacks, flue stacks and any other pipe penetration shall be flashed in on top of the completed roof membrane.
- E. Do not install more insulation and membrane than can be made watertight before the end of each days work.
- F. Repair/replace deteriorated, defective or damaged roofing prior to final acceptance by Walgreen Company.
- G. Standing water will not be permitted on any completed roof. All areas where standing water exists shall be corrected prior to final acceptance of the installation by Walgreens regardless of acceptance of standing water by the membrane manufacturer. Standing water is any amount of water remaining on the roof 48 hours after a rainfall.
- H. Splash blocks shall consist of pre-manufactured concrete splash blocks placed under all condensation lines and downspouts over roof pads.
- I. All pipe supports shall be placed over a roof pad that is adhered to the roof surface.
- J. All gas, condensation lines, spigots, and electrical lines that penetrate the field of the roof must be flashed thru a Portals Plus or Pate pipe flashing detail as detailed in the Walgreen Criteria. The use of a lead sleeve and caulk to flash a penetration is not acceptable.
- K. All masonry perimter walls must be covered and flashed in with roofing material per the requirements of the membrane manufacturer. At high wall details where the flashing height exceeds 24", separate the base flashing from the wall flashing with a metal counterflashing detail. Installations of full height parapet membrane flashing must be accompanied by written confirmation that the system manufacturer will warrant/guarantee the installation.
- L. Sign penetrations thru the wall flashings must be above 24" from the completed roof height and properly flashed so as not to effect the wall flashing warranty.
- M. All penetration boots must be terminated with a metal draw band and sealed with caulk.

- N. All fasteners used to secure caps, hoods, counterflashings and coping details shall consist of stainless steel, neoprene washered screws. Nails are not acceptable.
- O. Penetrations through any roof curb base flashing or any wall flashing is prohibited.
- P. All exposed roofing cement at curb corners and flashing side laps shall be coated with aluminum roof coating or white elastomeric roof coating. Exposed uncoated roofing cement is prohibited.
- Q. All Portals Plus, Alumi-Flash and Pate curb and penetration details shall be insulated with loose batt insulation prior to placement of the penetration boots.
- R. Install Ridge Vents at tower and drive through roofs.
- S. Install weeps and through wall flashing at tower side walls above the tower base flashings.
- T. At all locations where coping caps terminate into a wall, fabricate the cap to provide a return that extends up the wall not less than 4 inches. Top of return shall be protected by counter flashing. Coping cap ends at the inside and outside faces of the wall shall receive a continuous bead of NP-1 sealant.
- U. Provide full sheet width, fully adhered roof walk, pads in front of roof hatch, tower access door, around all RTU's, satellite mast and other roof top equipment. Walk pads extended into drainage valleys shall be cut to allow water to flow unobstructed to roof drains.







SECTION 07530 – FLEXIBLE SHEET ROOFING

PART I - GENERAL

1.01 DESCRIPTION

- A. Furnish and install a fully adhered system using .060” thick non-reinforced EPDM including but not limited to; preparation of the roof deck, installation of roofing insulation, flashings, sheet metal, expansion joints, counter-flashings and other related items.
- B. The requirements of Section 07500 apply to this section.

1.02 QUALITY ASSURANCE

- A. Insurance Certification: Provide completed systems that are listed for UL (Underwriters Laboratories) Class A external fire exposure and FM Global Class I construction.

1.03 SUBMITTALS

- A. Comply with the requirements of Part I Section 07500 and as follows:
- B. Shop Drawings: Show roof configuration, sheet layout, and recommended details (specific to actual store conditions) and special conditions. Detail locations shall include but not limited to; perimeter, HVAC equipment curbs, internal and external corners, penetrations, copings, terminations and junctions with other materials.

PART II – PRODUCTS

2.01 ROOF INSULATION

- A. Roof insulation shall be double layers of 1.5” thick “ISO 95+ Isocyanurate” roof insulation as manufactured by Firestone, or “Sure-Seal Polyisocyanurate HP” as manufactured by Carlisle Syn Tec Systems.
- B. Provide rigid polyisocyanurate, minimum density of 2 lb./cu. ft. complying with ASTM C-1289 and ASTM C13-3, Type II, Class I, Grade 2 and ASTM 1622, polyisocyanurate with fiberglass perforated facer sheet, 20 psi compressive strength complying with ASTM 1621, dimensional stability complying with ASTM D-2126-87. Minimum R Value of 9 per layer of 1.5” roof insulation.
- C. Tapered insulation for saddles and crickets; sloped ½” per ft. minimum, consisting of either tapered perlite panels or tapered polyisocyanurate panels.
  - 1. Approved tapered insulation; shall be listed and approved for use by the membrane manufacturer for the system to be installed.

2.02 ROOFING MEMBRANE

- A. Elastomeric sheet membrane shall be a 0.060 inch black non-reinforced terpolymer of ethylene, propylene, and diene compounded elastomer meeting ASTM D 4637 and ASNI/RMA IPR-1. The physical properties shall be as follows:

<u>PROPERTIES</u>	<u>TEST METHODS</u>	<u>SPECIFICATIONS</u>
Color		Black
Thickness Nominal		.060 inch
Tolerance on Nominal Thickness, %	ASTM D 412	+/- 10

Tensile Strength Min., psi (Mpa)	ASTM D 412	1305 (9)
Elongation, Ultimate Min., %	ASTM D 412	350
Tear Resistance, Min., lbf/in (kN/m)	ASTM D 624 (Die C)	175 (30.5)
Factory Seam Strength Min.	Modified ASTM D 816	Membrane Rupture
Resistance to Heat Aging Properties after 4 weeks @ 240 degree F	ASTM D 573	
Tensile Strength Min., psi (Mpa)	ASTM D 412	1200 (8.3)
Elongation, Ultimate Min., %	ASTM D 412	225
Tear Resistance min. lbf/in (kN/m)	ASTM D 624	150 (26.3)
Linear Dimensional Change, Max., %	ASTM D 1024	+/- 2
Ozone resistance Condition after exposure to 100 pphm Ozone in air for 168 h @ 104 degrees F. Specimen is at 50% strain	ASTM D 1149	No Cracks
Brittleness Temp. Max., Degree F (degree C)	ASTM D 746	75 (-59)
Resistance to Water Absorption* After 7d immersion @ 158 degree F., Change in mass max., %	ASTM D 471	4
Water Vapor Permeability Max., perm-mils	ASTM E 96 (Proc B or BW)	2.0
Resistance To Outdoor (Ultraviolet Weathering Properties after 500,000 Langleys EMMAQUA: 50% strain, Calendar finished sheeting Tensile strength min., psi (Mpa) Elongation min. %	ASTM D 412 ASTM D 412	1200 (8.3) 225
Sheet Composition	ASTM D 297	
Weight percent of polymer that is EPDM, min. %		100
Weight percent of sheet that is EPDM polymer min., %		30

- B. Provide one of the following products:

Carlisle "Sure-Seal" Membrane (Standard)\*  
Firestone "Rubberguard" (LSFR)\*

\*Use membrane required to comply with UL Class A fire rating over appropriate deck and insulation specified.

### 2.03 MISCELLANEOUS MATERIALS

- A. Fasteners shall be screws and non-puncturing plates as required by the membrane and insulation manufacturers, and as listed in Factory Mutual Approval Guide.
- B. Flashing: System manufacturers cured EPDM flashing is compliance with roofing manufacturer's details.
- C. Coping, gravel stops, gutters, downspouts, scuppers, etc. as per section 07600.
- D. Sealant: As provided by membrane manufacturer.
- E. Termination bars: 0.040 mill finished aluminum with 3 ½" vertical drop and ½" top caulk receiver.
- F. Sump pans: recessed 20 Ga. metal.
- G. Stack vents: Flash with molded pipe flashings approved by membrane manufacturer.
- H. Drains shall be flashed with EPDM membrane sheet as recommended by the roof membrane manufacturer.
- I. Wood Nailers: Pressure treated with salt preservations or Wolmanized treatment.
- J. Splash Blocks shall consist of pre-manufactured concrete splash blocks placed over walkway pads under all condensation lines and downspouts.
- K. Seam Tape: As provided by the membrane manufacturer. Seam tape exposure shall not exceed ¼" at field side laps.
- L. Bonding adhesive, Nite-seal, pourable sealer, splice cleaner, cut-off mastic, etc. as required by the membrane manufacturer.
- M. Traffic Pads: Carlisle or Firestone walk pads as supplied by the membrane manufacturer.
- N. Molded Walkway Pads: A black, rubber walkway pad with factory rounded corners available in 30" by 30" pads.
- O. Walkway Pads: A black, shredded, compressed rubber walkway pad available in 30 inch wide by 30 foot long rolls.
- P. Protective sheets: If membrane is vulnerable to contact with fluid associated with HVAC equipment, provide membrane manufacturers recommended protection sheets beneath and extending 2 ft. minimum around all HVAC equipment.

## PART III - EXECUTION

### 3.01 INSTALLATION – General

- A. The requirements of Part III, Section 07500 apply to this section.

3.02 INSTALLATION – Insulation

- A. For fully adhered EPDM roofing membrane assemblies, install base layer with long dimension perpendicular to metal deck flutes. Install top layer with long dimension parallel to metal deck flutes on fully adhered EPDM membrane system. Mechanically fasten both layers simultaneously with 16 fasteners per board consistent with I-60 wind up-lift ratings. If higher wind up lift requirements is required based upon the region and building location, comply with the fastener rates and patterns outlined in the most current FM Global publication.
- B. Stagger insulation joints within each layer of insulation in both roof systems. Joints in top layer shall be staggered a minimum of 6" from the joints in base layer.

3.03 INSTALLATION – Membrane

- A. Membrane should be applied from highest point to lowest point to prevent water infiltration.
- B. Membrane splices shall be 3" wide minimum. Field splices at roof drains shall be located outside the drain sump. Seam tape at field side laps shall not exceed ¾" width. Seam tape exposure in excess of ¾" shall be covered with EPDM cover strips.
- C. The EPDM membrane shall extend over the perimeter wood nailer (or gravel stop / water dam fascia continuous cleat) to the outside face of the building. Secure copings (or gravel stops) in compliance with roof manufacturer details. Secure copings on outside with a continuous metal cleat and on inside vertical surfaces with neoprene washered screws at a rate of 24" o/c. or five fasteners per ten foot run of coping.
- D. The flashing membrane on all parapet walls shall be fully adhered to the inside of the cleaned wall surface and extend up and over the top of the wall and shall be mechanically terminated on the outside face of the wood nailer that is installed beneath the coping.
- E. In accordance with roof manufactures details, the system shall be secured at the perimeter of each roof level, roof section, curb flashing, roof hatch, interior wall, penetration, etc, and any inside angle where slopes exceed 2 inches in 1 horizontal foot.
- F. Compression type wood nailers are not acceptable for membrane securement.
- G. Apply and secure walkway protection pads in strict compliance with roof manufactures instructions where indicated in the Walgreen criteria drawings. Do not restrict drainage of the roof with any walk pad. Cut or move any walk pad that restricts drainage.
- H. Any penetration thru the perimeter parapet wall shall be flashed thru a pre-molded pipe flashing as supplied by the membrane manufacturer or field flashed with EPDM membrane per the requirements of the membrane manufacturer.

END OF SECTION

SECTION 07600 - FLASHING, SHEET METAL, SPECIALTIES AND ACCESSORIES

PART I - GENERAL

1.01 DESCRIPTION

- A. The work includes: Metal counter flashing.  
Metal wall flashing and coping.  
Scuppers.  
Gutters and Downspouts (except at standing seam metal roofs).  
Roof Scuttle.  
Miscellaneous roof accessories.  
Equipment curbs.

1.02 QUALITY ASSURANCE

- A. Comply with the recommendations of S.M.A.C.N.A. (Latest Edition).
- B. Sheet metal details, including copings, related to the membrane roofing installation specified in sections 07500 and 07530 shall be installed by the membrane roofing installer
- C. Unfinished 24 ga. Sheet metal is not acceptable for use on any roofing component. Only non-corrosive or pre-finished metals, as specified below, shall be allowed.

PART II - PRODUCTS

2.01 FLASHING AND SHEET METAL MATERIALS

- A. Zinc-coated Steel: Commercial quality, ASTM A 525, G90 hot-dip galvanized (24 gauge) except as otherwise indicated. Pre-finished with Kynar 500/Hylar 5000 coating.
  - 1. Gutters up to 15" girth; use 26 gage.
  - 2. Gutters 16" to 20" girth; use 22 gage.
  - 3. Scuppers, conductor heads, and downspouts use 24 gage.
  - 4. Copings up to 18" girth; use 24 gage.
  - 5. Coping over 18" girth; use 22 gage.
  - 6. All counterflashings shall be 24 gage.
- B. Copper: ASTM B 370, cold-rolled except where soft temper is required for forming; 16 oz. except as otherwise indicated.
  - 1. Copings 10" to 14" wide; use 20 oz.
  - 2. Copings over 14" wide; use 24 oz.
- C. Aluminum coping: ASTM B 209, alloy 3003, temper H14, 0.032" thick except as otherwise indicated. Provide pre-finished KYNAR 500 colors as noted.
  - 1. Copings over 14" wide or gutters over 16" girth, use 0.040" min. thickness,
  - 2. Gutters up to 15" girth; use 0.032" min. thickness.
  - 3. Gutters 16" to 20" girth; use 0.040" min. thickness.



4. Downspouts use 0.025" min. thickness.
5. Scuppers, conductor heads and counter flashing use 0.040" min. Thickness.

D. Colors: Pre-finish all exposed copings, flashing, counterflashing, trim, scuppers, gutters and downspouts in the following KYNAR colors:

1. "Northern Tower" Prototype: (exposed flashings, copings, gutters): Sierra Tan", by Una-Clad, (Firestone Metals, Inc.) Pac-Clad (Peterson Aluminum) and Berridge Manufacturing Co, and "Beige" by Dyna-Clad (DMI).
  - a. Scuppers and Downspouts shall be: "Sierra Tan" by Una-Clad (Firestone Metals, Inc.), Berridge Manufacturing Co., Pac-Clad (Peterson Aluminum) or Integris metals, "Beige" by Dyna-Clad (DMI).
2. "Chicago Prototype" (exposed flashing, coping, trim, gutters): "Sierra Tan" by Una-Clad (Firestone Metals, Inc.), Pac-Clad (Peterson Aluminum) and Berridge Manufacturing Co., "Beige" by Dyna-Clad (DMI).
3. "Southern" Prototype: "Almond", as manufactured by Una-Clad (Firestone Metals, Inc.) Metal-Era or Integris Metals, "Putty" by Dyna-clad (DMI).

## 2.02 MISCELLANEOUS FLASHING AND SHEET METAL ACCESSORIES

- A. Solder: For use with steel or copper, provide 50 - 50 tin/lead solder (ASTM B 32), with rosin flux.
- B. Fasteners: Same metal as flashing/sheet metal. Match finish of exposed heads with material being fastened.
- C. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.
- D. Adhesives: Type recommended by flashing sheet manufacturer for waterproof/weather-resistant seaming and adhesive application of flashing sheet.
- E. Reglets: Metal or plastic units, compatible with flashing indicated, noncorrosive.
- F. Metal accessories: Provide sheet metal clips, straps, anchoring devices and all accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive.
- G. Roofing cement ASTM D-2822 asphaltic.

## 2.03 FABRICATED UNITS

- A. General Metal Fabrication: Shop-fabricate work to greatest extent possible. Comply with details shown, and with applicable requirements of SMACNA "Architectural Sheet Metal Manual". Fabricate for waterproof and weather-resistant performance; with expansion provisions for running work, sufficient to permanently prevent leakage, damage or deterioration of the work. Form exposed sheet metal work without buckling with exposed edges folded back to form hems.
  1. Coping Joints: Up to 10" wide, use S.M.A.C.N.A. joint types J5 thru J12. Over 10" wide, use S.M.A.C.N.A. joint types J8 thru J12. Architectural Sheet Metal Manual table 3-1 "Coping Design", for the specific metal thickness, type and coping width.
  2. Pre-engineered/manufactured coping cap systems complying with FM wind uplift and S.M.A.C.N.A. standards are acceptable if approved by Walgreens Project Architect.

- B. Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be used, or would not be water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1" deep, filled with mastic sealant.
- C. Sealant Joints: Where movable, non-expansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with SMACNA standards.
- D. Separations: Provide for separation of metal from noncompatible metal or corrosive substrates, with bituminous coating or other permanent separation.
- E. Gutters and Downspouts and Trim: Provide manufacturers standard KYNAR shop finish, color as per Article 2.01.D. For gutters at standing seam metal roofs, see Section 07610.
  - 1. Provide protective cover of 1/8" thick bent steel plate to a height of 3'-0". Finished to match downspout color. Option at rear of store only, Neenah cast iron downspout shoe #R-4925, profile to match downspout, paint to match downspout.

2.04 ROOF SCUTTLE

- A. 2'-6" x 3'-0" Type "S" with "Ladder UP" safety post, model 2, by Bilco, provide fire-rated units as required by local authorities.

2.05 EQUIPMENT CURB S/SUPPORTS/FLASHING

- A. Equipment Rails; 18 ga galvanized steel, monolithic construction with integral base plate, continuous welded cover seams, factory installed 2x6 wood nailer #ER-4A by Roof Products & Systems Corp., Bensenville, Illinois (630) 766-5240 or (800) 774-5240.
- B. Equipment Curbs; 18 ga galvanized steel with continuous welded cover seams, factory installed wood nailer, factory installed 1 1/2 thick 3 pound density rigid insulation and reinforcing as required to support equipment, including duct hangers and insulation pans on roof top units.
- C. Prefabricated Pipe Penetrations (at satellite dish):
  - 1. Curbs: 18 ga. metal curb with 1-1/2" x 1-1/2" wood nailer #RC-4A by Portals Plus, Inc., Bensenville, Illinois (630) 766-5240 or equal by The Pate Company, Broadview, IL. (708) 681-1920.
  - 2. Pipe Portal Curb Cover: Acrylic coated, rib reinforced, ABS plastic, double pipe portal by Portal Plus Inc., Bensenville, Illinois (630) 766-5240 or 0.050" thick aluminum cover by The Pate Company, Broadview, IL (708) 681 -1920).
  - 3. Flexible Cap: EPDM or Neoprene (BUR or Mod. Bit roofs) compression molded cap # C-126 and C-212 by Portals Plus, Inc. (630) 766-5240 or equal by The Pate Company, Broadway, IL (708) 681-1920.

PART III EXECUTION

3.01 INSTALLATION REQUIREMENTS:

- A. Comply with manufacturer's installation instructions and recommendations, and with SMACNA "Architectural Sheet Metal Manual". Anchor units as required to be secure and permanently watertight/weathertight.

END OF SECTION

## SECTION 07610 - METAL STANDING SEAM ROOFING

### PART I - GENERAL

#### 1.01 DESCRIPTION

- A. Work includes steel standing seam roofing and accessories.

#### 1.02 QUALITY ASSURANCE

- A. All panels and accessories are to be factory formed, finished and packaged.
- B. Applicator shall have five years minimum experience applying this type of roofing system.
- C. Comply with local codes for installation of standing seam-roofing system.
- D. Provide systems complying with ASTM E 1680 (air infiltration), ASTM E 1646 (water infiltration) and rated for UL 90 wind uplift, UL 263 fire resistance, UL 790 Class A fire.
- E. Do not install on roof pitch less than 2:12.

#### 1.03 WARRANTY

- A. Provide manufacturers standard twenty year finish warranty.
- B. Panel installer shall issue a five year weather tight and workmanship guaranty.

#### 1.04 SUBMITTALS

- A. Submit complete shop drawings, details, product data and material sample to Architect of Record. Show expansion joint details and waterproof connections to adjoining work and at obstructions and penetrations.

### PART II - PRODUCTS

#### 2.01 STANDING SEAM ROOFING

Manufacturers: ATAS International, Inc., "Dutch Seam System".  
Berridge, "Cee-Lock".  
Dimensional Metals, Inc. (DMI) IL-20 "Inter-Lock Panel System".  
Englert, S2000 "Integral Snap-Lock Panel" System.  
McElroy Metal, "Medallion-Lok".  
Peterson Aluminum, PAC-CLAD "Snap-Clad" Standing Seam system.

- A. Panel: Nominal 12", 15" or 18" wide G-90, Grade C, ASTM A-653-03 & ASTM A-924-99, hot dipped galvanized steel panel, ASTM-A653-03 or ASTM AZ50 Galvalume steel, with minimum 1 inch high standing seam.
  - 1. Material Thickness: 24 gauge.

2. Color: Kynar 500® (0.80 to 0.90 mil dry film thickness) “Forest Green” by Atas, Berridge Manufacturing, Englert and Pac-Clad, smooth texture, “Evergreen” by DMI and McElroy Metal. Total dry film coating thickness with primer to be 1.0 to 1.25 mils. Provide strippable protective film. Provide reverse side backer coating with 0.25-mil dry film thickness.  
Note: The color of the tote enclosure roof of the Southern Prototype shall be or match Una-Clad “Almond” or Dyna-Clad (DMI) “Putty”.
  3. Length: Manufacturers standard 40 ft. or less in one continuous length.
- B. Fabrication: Fabricate panels, trim and accessories to allow controlled expansion in running lengths in relation to system components, adjoining materials, flashing and wall construction.

## 2.02 TRIM & ACCESSORIES

- A. General:
1. Metal flashings, gutters, and trim shall be from the same manufacturer and of the same material and gauge as panels. Exposed components shall be formed in longest possible lengths. Color to match panels.
  2. Manufacturers standard fasteners, brackets, clips, furring strips, spacers, flashings, closures, weather-stripping, joint sealers, sealants, expansion control, etc. as required for complete weathertight installation.
  3. Anchorage: Provided by the manufacturer. Comply with manufacturer instructions. Use cadmium plated screws with attaching to treated lumber.
  4. For downspouts adjacent to brick, see Section 07600.

## 2.03 MISCELLANEOUS MATERIALS

- A. Bituminous Coating: Cold applied asphaltic, complying with FS TT-C-494, Type II, 12 mils min. dry film thickness.
- B. Underlayment: 30 lb. unperforated organic asphalt saturated roofing felt, complying with ASTM D-226, 36 “ wide.
- C. Paper Slip-Sheet: 5-lb. rosin sized building paper.
- D. Snow-Guards: Clear polycarbonate with UV stabilizers, adhesive mounting. Provide Real-Tool® CL model #RTCLSM by Berger Bros. Co., Sno-Gem™ by Sno-Gem, Inc. or SNOJAX by SNOJAX, Inc. Used on roofs when the slope is flatter than a 1/1 slope.

## 2.04 SHOP FABRICATED UNITS

- A. Expansion Provisions: Where lapped or bayonet-type provisions cannot be used, form expansion joints of intermeshing hooked flanges not less than 1” deep, filled with mastic sealant.
- B. Sealant Joints: Where movable, non-expansion joints are indicated, form metal to provide for proper installation of elastomeric sealant in compliance with SMACNA standards.

## PART III - EXECUTION

### 3.01 INSTALLATION

- A. System shall be installed straight and true to line, in compliance with manufacturers instructions.
- B. Panel system shall not come in contact with dissimilar materials, which will cause harmful reactions between the metals and/or finish.
- C. Separate dissimilar metals with coat of bituminous paint, concealed on one or both sides.
- D. Install underlayment and slip-sheet on solid substrate.
- E. Panels shall be fully interlocked with its adjacent panel.
- F. Fabricate sheets, seams, strips, cleats, valleys, ridges, edge treatments, flashings, etc. to allow drainage. Seal joints as required. Provide leakproof construction.
- G. Sealant Joints: Embed hooked flanges not less than 1" into sealant. Completely conceal sealant.
- H. Install system to prevent bending, buckling, twisting, abrasion, scratching, denting, etc. Only minor scratches may be touched-up in field.
- I. Anchor components securely in place. Use fasteners recommended by panel manufacturer. Accommodate thermal and structural movement. Use gasketed fasteners to prevent electrolytic action between metals. Conceal all fasteners and anchors.
- J. Snow-Guards shall be installed on roofs and awnings with slopes less than 1:1 in regions where snow or ice build-up is likely. Snow-guards shall be centered between standing seams and installed in compliance with manufacturer's instructions. Provide not less than one row, located not closer than 15 inches to the roof eave. Provide additional staggered rows as recommended by manufacturer to suit local snow and ice conditions.
- K. Install ridge vents and soffit vents at all gabled and hip roofs. Provide ridge and soffit venting at a ratio of 1sf of free vent area for each 150 sf of area below roof.

### 3.02 CLEANING

- A. Remove protective film upon completion without damaging finish.
- B. Completed system shall be clean and free from grease, stains and finger marks.

### 3.03 PROTECTION

- A. Protect work to be free from damage at time of Walgreens acceptance and completion of entire project.

END OF SECTION





SECTION 07900 - JOINT SEALERS

PART I - GENERAL

1.01 QUALITY ASSURANCE

- A. Applicator Qualifications: Applicator shall have a minimum of 5 years experience successfully installing sealants,
- B. Compatibility; Applicator shall be responsible for verifying that sealants used are compatible with joint substrates.
- C. Guarantee; Sealant joints shall be guaranteed against adhesives and cohesive failure and water penetration through the sealed joint for 5 years.
- D. Apply sealants in strict compliance with manufacturers instructions.

PART II PRODUCTS

2.01 SEALANTS

- A. Extreme Movement Sealants (+100% or -50% movement capability)
  - 1. Vertical/horizontal joint, such as expansion joints; use reference #S-6.
- B. Significant Movement Sealants (+25% or -25% movement capability)
  - 1. Vertical or inclined joints such as panel, coping, expansion, and sloped pavement; use reference #S-1, 3 or 6.
  - 2. Horizontal joints not exposed to fuel or gas spillage; use reference #S- 1, 2,3,4,6 or 7.
- C. Minimal Movement Sealants (+25% or -25% movement capability)
  - 1. Vertical or inclined joints such as perimeters of doors, windows, wall penetrations; use reference # S- 1, 3,4, or 6.
  - 2. Horizontal joints not exposed to fuel or gas spillage; use reference # S-2, or 5.
- D. Interior Sealants and Caulking
  - 1. General; use reference # C-1.
  - 2. Special
    - a. Toilet rooms; use reference #S-8.

2.02 REFERENCE NUMBERS

REF #	ASTM SPEC	FED. SPEC	PRODUCT DESCRIPTION
-------	-----------	-----------	---------------------

S = Sealant

S-1	C-920-02 Type M Class 25 Grade NS		- Two component, non-sag, - Polyurethane or Polysulfide sealant - Shore A hardness of 20-40 - Joint movement range of +/-25%
-----	--	--	---

S-2	C-920-02 Type M Class 25 Grade P		- Two component, self leveling, polyurethane or polysulfide sealant - Shore A hardness of 25-40 - Joint movement range of +/-25%
S-3	C-920-02 Type S Grade 25 Grade NS		- Low modulus, one component, non-sag, polyurethane or polysulfide sealant - Shore A hardness of 15-25 - Joint movement range of +/-50% - Minimum elongation of 700%
S-4	C-920-02 Type S Class 25 Grade NS		- One component, non-sag, polyurethane or polysulfide sealant - Shore A hardness of 25-40 - Joint movement range of +/-25%
S-5	C-920-02 Type S Class 25 Grade P		- One component, self leveling, polyurethane or polysulfide sealant - Shore A hardness of 15-45 - Joint movement range of +/-25%
S-6	C-920-02 Type S Class 25 Grade NS	TT-S-001543(a) and/or TT-S-00230 Class A	- Low modulus, one component, non-sag, neutral cure, silicone sealant - Shore A hardness of 15-20 - Joint movement range of +100% to -5 0% - Joint size may be as little as two times joint movement - Minimum elongation of 1200%
S-7	C-920-02 Type S Class Grade NS	TT-S-001543(a) and/or TT-S-00230 Class A	- One component, neutral cure, non-sag, silicone sealant - Shore A hardness of 25-30 - Joint movement range of +/-25%
S-8	C-920-02 Type S Class 25 Grade NS	TT-S-001543(a) and/or TT-S-00230 Class A	- One component, non-sag, mildew resistant silicone sealant - Shore A hardness of 25-30

C = Caulking

C-1	C-834-76	N/A	- One component acrylic latex caulking minimum 75% recovery per ASTM C-736-00 - Maximum joint movement of +/-7.5%
-----	----------	-----	--

2.03 PRIMER

- A. Provide type recommended by sealant manufacturer for project conditions.

2.04 BACKER ROD

- A. Open or closed cell (non-gassing) polyethylene or polyurethane as recommended by sealant manufacturer.

1. Closed cell or closed skin open cell backer rods shall be used within EIFS joints.

## PART III EXECUTION

### 3.01 INSTALLATION

- A. Apply where dissimilar material abut.
- B. Clean joints to eliminate all detrimental substances.
- C. Install joint filler and backing without gaps between ends.
- D. Prevent 3 sided bonding within the joint. Use bond breaker tape as recommended by sealant manufacturer if needed.
- E. Sealant depth shall be  $\frac{1}{2}$  of joint width with a minimum depth of  $\frac{1}{4}$ " and a maximum of  $\frac{1}{2}$ " unless otherwise required by the sealant manufacturer.
- F. Do not install sealant on damp, dirty or oily surfaces. Do not install sealant when temperatures are below 40°F unless specifically allowed by manufacturer's instructions.
- G. Color: Sealant color shall match the color of the materials at each side of the joint. If materials change along the length of a continuous joint, the color shall change to match the surrounding materials. When materials differ on each side of the joint, install as follows. For combinations not listed below, consult Walgreens Project Architect.
  - 1. Masonry and Storefront Systems; match storefront.
  - 2. Masonry and Hollow Metal; match hollow metal final finish.
  - 3. Masonry and Prefinished Metal; match prefinished metal.
  - 4. Horizontal Concrete and Masonry; match concrete.
  - 5. EIFS/Plaster and Masonry; match EIFS/Plaster.

### 3.02 CLEANING AND PROTECTION

- A. Clean off excess sealants or smears adjacent to joints without damaging adjacent surface or finishes.
- B. Protect sealants from damage and contaminants until fully cured. Damaged or contaminated sealants shall be cut out and replaced.

END OF SECTION



## SECTION 08100 - METAL DOORS AND FRAMES

### PART 1 - GENERAL

#### 1.01 QUALITY ASSURANCE

- A. Provide doors and frames complying with Steel Door Institute "Recommended Specifications Standard Steel Doors and Frames" SDI-100.
- B. Fire Rated Door Assemblies: Provide assemblies complying with NFPA 80 and labeled in accordance with ASTM E-2074-00. Comply with UL 10C "Positive Pressure Fire Tests of Door Assemblies".

### PART II - PRODUCTS

#### 2.01 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with requirements, provide steel doors and frames by one of the following:
  - Amweld/Div. American Welding & Mfg. Co.
  - Ceco Corp.
  - Curries
  - Fleming Steel Doors and Frames, an Assa Abloy Group Company
  - Steelcraft/Div. American Standard Co.

#### 2.02 MATERIALS

- A. Hot-Rolled Steel Sheets and Strip: Commercial quality carbon steel, pickled and oiled, complying with ASTM A 1011.
- B. Cold-Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A 1008.
- C. Galvanized Steel Sheets: Zinc-coated carbon steel sheets, complying with ASTM A-653, G60 zinc coating, mill phosphatized.
- D. Supports and Anchors: Fabricate of not less than 18-gage galvanized sheet steel.
- E. Inserts, Bolts, and Fasteners: Manufacturer's standard units, except hot-dip galvanize items to be built into exterior walls, complying with ASTM A 153, Class C or D as applicable.

#### 2.03 SHOP APPLIED PAINT

- A. Primer: Rust-inhibitive enamel or paint, either air-drying or baking, suitable as a base for specified finish paints.

#### 2.04 FABRICATION

- A. Comply with SDI-100 requirements as follows:
  - Interior Doors: SDI-100, Grade II, heavy-duty, Model 1, minimum 18-gage faces, 1  $\frac{3}{4}$ " thick.
  - Exterior Doors: SDI-100, Grade III, extra heavy-duty Model 2, minimum 16-gage faces, 1  $\frac{3}{4}$ " thick.



- B. Fabricate exposed faces of doors from only cold-rolled steel.
- C. Fabricate frames with 12-gage concealed stiffeners, reinforcement, edge channels, louvers, and moldings from either cold-rolled or hot-rolled steel (at fabricator's option). Factory weld all frames. Field welding/fabrication is prohibited.
- D. Fabricate exterior doors, panels, and frames from galvanized sheet steel. Close top and bottom edges of exterior doors as integral part of door construction or by addition of minimum 16-gage inverted steel channels.
- E. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat Phillips heads for exposed screws and bolts.
- F. At exterior locations provide thermal insulating door and frame assemblies, tested in accordance with ASTM A-1363.
- G. Provide assemblies with U factor of 0.41 BTU/Hr. Ft. squared/deg. F or better.
- H. Finish Hardware Preparation: Doors and frames to receive mortised and concealed finish hardware. Comply with applicable requirements of ANSI A115 series specifications.

#### 2.05 STANDARD STEEL FRAMES

- A. Provide metal frames for doors, of types and styles as shown on drawings. Conceal fastenings, unless otherwise indicated.  
Exterior doorframes shall be minimum 16-gage cold-rolled furniture steel.  
Interior doorframes shall be minimum 18-gage cold-rolled furniture steel.  
  
Fabricate frames with mitered and welded corners. K-D Frames are prohibited.  
  
Form exterior frames of hot-dip galvanized steel.
- B. Door Silencers: Except on weather-stripped frames, drill stops to receive 3 silencers on strike jambs.

### PART III - EXECUTION

#### 3.01 INSTALLATION

- A. Comply with SDI-105 "Recommended Erection Instructions For Steel Frames", SDI-100 and NFPA 80.
- B. Frames: In masonry construction, locate 3 wall anchors per jamb at hinge and strike levels.  
  
At in-place concrete or masonry construction, set frames and secure to adjacent construction with machine screws and masonry anchorage devices.  
Install fire-rated frames in accordance with NFPA Std. No. 80.  
In metal stud partitions, install at least 3 wall anchors per jamb at hinge and strike levels.  
In open steel stud partitions, place studs in wall anchor notches and wire tie. In closed steel stud partitions, attach wall anchors to studs with tapping screws.
- C. Final adjustments: Check and readjust operating finish hardware items, leaving steel doors and frames undamaged and in complete and proper operating condition.

END OF SECTION

SECTION 08200 - WOOD DOORS

PART I - GENERAL

1.01 DESCRIPTION

- A. Types: 1. Solid core flush wood doors with veneer faces.
- B. Shop priming of wood doors is included.
- C. Louvers for wood doors (furnished and installed) are included.

1.02 QUALITY ASSURANCE

- A. AWI Quality Standards: Section 1300 "Architectural Flush Doors" of "Architectural Woodwork Quality Standards" published by Architectural Woodwork Institute (AWI).
- B. WDMA IS 1A – Window and Door Manufacturers Association.
- C. Fire-Rated Wood Doors: Provide wood doors which match units tested in door and frame assemblies per ASTM E 2074 and UL 10C and which are labeled and listed for ratings indicated by UL, other testing and inspection agency acceptable to authorities having jurisdiction.
- D. Manufacturer: Obtain doors from a single manufacturer unless noted otherwise.
- E. Door Manufacturer's Warranty: Submit door manufacturer's standard, signed by Manufacturer, Installer and Contractor, agreeing to repair or replace defective doors.
  - 1. Solid Core Flush Interior Doors: Life of installation.

PART II - PRODUCTS

2.01 MANUFACTURERS

- A. Subject to compliance with requirements, provide products of one of the following:
  - 1. Algoma Hardwoods, Inc.
  - 2. Graham® Wood Doors
  - 3. Eggers Industries
  - 4. Oshkosh Architectural Door Company.
  - 5. Marshfield Doorsystems, Inc. (formerly Weyerhaeuser Company)
  - 6. Mohawk flush Doors, Inc.

2.02 INTERIOR FLUSH WOOD DOORS

- A. Solid Core Doors for Opaque Finish: Comply with the following requirements:
  - 1. Faces: Any closed-grain standard thickness hardwood of mill option. Or medium density overlay (MDO).
  - 2. Grade: Custom.

3. Construction: SLC-5 (Glued block core, 5-ply), edge bands glued to core, SCLC-5 (Structural Composite Lumber Core, 5-ply) or particleboard core (PC-5, 1 -LD-2 grade), all edges glued to core. Provide 1-3/8" wide solid wood stiles at top, bottom and center and solid wood lock block.

4. Thickness 1 3/4 inches.

B. Fire -Rated Solid Core Doors: Comply with the following requirements.

1. Faces and AWI Grade: Match non-rated doors in same area of building, unless otherwise indicated.

2. Construction: Manufacturer's standard core construction as required to provide fire-resistance rating indicated.

#### 2.03 LOUVERS AND LIGHT FRAMES:

A. Louvers: Door manufacturer's standard 18 ga. metal louvers, of size indicated, formed of 18 gage cold-rolled steel, factory primed for finish painting.

B. Frames for Light Openings in All Wood Doors: Manufacturer's standard frame formed of 18-gage cold-rolled steel, factory-primed, and approved for use in door of fire rating indicated.

#### 2.04 FABRICATION

A. Openings: Cut and trim openings through doors and panels as shown. Comply with applicable requirements of referenced standards for kind(s) of doors required.

1. Light Openings: Factory cut openings. Provide 18-gage cold rolled metal frames. Trim openings for all doors with metal frame and moldings. At all pharmacy doors, the removable stops shall be placed on the pharmacy side of door. Non-removable stops shall be placed at opposite side of pharmacy door. Fire rated doors with light openings shall have UL listed wire glass.

2. Louvers: Factory install louvers in prepared openings.

#### 2.05 SHOP-PRIMING:

A. Before delivery of doors shop-prime as follows:

Paint Finish: Prime with one coat of wood primer; interior enamel under coat (FS-TT-E-543).

Moore's alkyd enamel under body.

#### 2.06 PREFITTING AND PREPARATION FOR HARDWARE (contractors option)

A. Prefit and premachine wood doors at factory.

### PART III EXECUTION

#### 3.01 INSTALLATION

A. Condition doors to average prevailing humidity in installation area prior to hanging. Seal cut surface after fitting and machining.

B. Fitting Clearances: For non-rated doors provide clearances of 1/8 " at jambs and heads; and 1/8" from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 1/4" clearance from bottom of door to top of threshold.

For fire-rated doors, provide clearances complying with NFPA 80.

Bevel non-rated doors 1/8" in 2" at lock and hinge edges.

Bevel fire-rated doors 1/8" in 2" in lock edge; trim stile rails only to extent permitted by labeling agency.

### 3.02 OPERATION

Rehang or replace doors, which do not swing or operate freely, as directed by Architect.

END OF SECTION



SECTION 08300 - SPECIAL DOORS

PART I - GENERAL

1.01 DESCRIPTION

- A. Work includes rolling insulated interior mounted overhead doors, access panels, rolling shutter and motorized rolling overhead grille.

1.02 QUALITY ASSURANCE

- A. Provide a complete properly operating installation for each type of special door including all hardware, mounting and installation components.
- B. Wind Loading: Rolling insulated door shall withstand a 20 PSF wind load pressure.
- C. Fire Rated Assemblies (when required); comply with NFPA 80 and provide UL label confirming compliance with ASTM E-2074 including automatic closing in event of fire.
- D. Any deviation from Walgreens required finishes, colors, etc., must be approved by Walgreens and fully coordinated with all similar and related systems.
- E. Fabricate rolling grille to permit:
  - 1. Emergency exiting from interior during power failure and when grille is closed.
  - 2. Manual lifting for emergency entry upon operation of a secure exterior mounted release device in the event of a power failure.

1.03 SUBMITTALS

- A. Submit manufacturers product data and shop drawings (except access panels).

PART II - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS (overhead doors)

- A. Subject to compliance with requirements, provide products of one of the following:

AlumaTek, Inc.  
The Cookson Company  
Cornell Iron Works  
Overhead Door Corp.

2.02 MATERIALS

- A. Steel Door Curtain slats: Structural quality, cold rolled galvanized steel sheets complying with ASTM A 653, Grade A, with G90 zinc coating, complying with ASTM A 653, and phosphate treated before fabrication. Provide a 22-gauge minimum exterior skin, 24 gauge minimum interior skin.

Furnish standard "flat-face" slats.

- 1. Insulation (receiving door): fill slats with pressure - foamed-in-place urethane, polyurethane or polyisocyanurate, fully bonded to interior and exterior skins.
- B. Grille Curtain: A network of 5/16" minimum diameter horizontal rods spaced approximately 2" o.c. Interconnect rods by vertical links approximately 5/8" wide, spaced approximately 9" apart and rotating on the rods in a straight pattern.



1. Aluminum Grilles: ASTM B 221, with clear, satin anodized finish.
- C. Endlocks: Malleable iron castings galvanized after fabrication, secured to curtain slats with galvanized rivets. Provide locks on alternate curtain slats for curtain alignment and resistance against lateral movement.
1. End Locks (Rolling Grille): Continuous end links or other devices at ends of rods, locking and retaining grille curtain in guides against excessive pressure, maintaining curtain alignment and preventing lateral movement.
- D. Bottom Bar: Consisting of 2 angles, each not less than 1-1/2" x 1-1/2" x 1/8" thick, either galvanized or stainless steel to suit type of curtain slats.
1. Provide a replaceable gasket of flexible vinyl or neoprene between angles as a weather seal and cushion bumper (at receiving).
  2. Bottom Bar (Rolling Grille): Manufacturer's standard extruded shape with clear anodized finish.
- E. Curtain Jamb Guides: Fabricate of steel angles, or channels. Build-up units with minimum 3/16" thick steel sections, galvanized after fabrication. Slot bolt holes for track adjustment.
1. Secure continuous wall angle to wall framing by 3/8" minimum bolts at not more than 30" o.c., unless closer spacing recommended by door manufacturer. Extend wall angles above door opening head to support coil brackets. Place anchor bolts on exterior wall guides so they are concealed when door is in closed position. Provide removable stops on guides to prevent over-travel of curtain, and continuous bar for holding windlocks.
  2. Guides (Rolling Grille): Manufacturer's standard extruded aluminum shape, clear anodized finish, having curtain groove with return lips or bars to retain curtain. Furnish pile stripes, rigid vinyl liner, or other nonmetallic inserts to prevent metal-to-metal contact and minimize noise of travel.
- F. Weather Seals (At Receiving): Provide vinyl or neoprene weather-stripping. At door heads, use 1/8" thick continuous sheet secured to inside of curtain coil hood. At doorjamb, use 1/8" thick continuous strip secured to exterior side of jamb guide.

### 2.03 COUNTERBALANCING MECHANISM:

- A. Counterbalance: Provide adjustable steel helical torsion spring, mounted around a steel shaft and mounted in a spring barrel and connected to door curtain. Use grease-sealed bearings or self-lubricating graphite bearings for rotating members.
- B. Hood: Entirely enclose coiled curtain and operating mechanism, including chain gear assembly at opening head (provide chain-fall gear housing). Provide a weather seal to prevent airflow, insects, etc., from entering hood. Contour to suit end brackets to which hood is attached. Roll and reinforce top and bottom edges for stiffness. Provide closed ends for surface-mounted hoods, and any portion of between-jamb mounting projecting beyond wall face.
1. Fabricate steel hoods for doors of not less than 24 gage hot-dip galvanized steel sheet with G 90-zinc coating, complying with ASTM A 653. Phosphate treat before fabrication.
  2. Fabricate hoods for aluminum grilles of alloy 3003 aluminum sheet not less than 0.032" thick, finished to match curtain.
  3. Furnish removable metal soffit when hood is mounted above ceiling, of same material and finish as curtain.

## 2.04 OPERATORS

- A. Chain Hoist Operator (At Receiving): Provide endless steel manual chain hoist operator, chain pocket wheel and guard, and geared reduction unit with maximum 35 lbs. pull for door operation. Provide self-locking mechanism allowing curtain to be stopped at any point in its travel and to remain in position until reactivated. Furnish chain holder secured to operator guide. Provide 1/4" minimum thickness, heavy duty slide bolt for padlock at inside bottom bar, both sides.
- B. Manual Push-Up Operation (At Conveyor): Required lift or pull for door operation shall not exceed 25 lbs. Curtain shall be easily stopped at any point in its travel and remain in position until reactivated.

Provide lifting handle and slide bolt with cylinder lock on bottom bar.

- C. Electric Grille Operator: By grille manufacturer; complete with electric motor and factory-prewired motor controls, gear reduction unit, solenoid operated brake, remote control stations, and control devices.

Provide hand-operated disconnect or mechanism for automatically engaging a sprocket and chain operator and releasing brake for emergency manual operation. Mount disconnect and operator at 48" above finish floor. Include an interlock device to automatically prevent motor from operating when emergency operator is engaged. Provide "Power-Out Entry Terminal" (P.E.T.) by Storefront Security Closures, Inc. 1-800-767-3667.

1. Key stations: One (1) exterior type, secure tamper-proof, recessed mounted, heavy duty, weatherproof, constant contact OPEN/CLOSE with spring return to center, NEMA Type 4, key switch.

One (1) interior, flush mounted, constant contact OPEN/CLOSE with spring return to center, NEMA Type 4, key switch.

- D. Automatic Reverse Control: Furnish and install when required by authorities having jurisdiction. Provide units with electrically or pneumatically actuated automatic bottom bars. Only provide units with heavy duty retracting reels, which conceal cord/tube from view when grille is opened.

## 2.05 ACCESS PANELS

- A. Provide 24" x 36" doors, with 16 Ga. frames, 14 Ga. doors, continuous concealed hinges, cylinder lock with two keys and prime painted finish. Units with plaster bead flanges may be used (contractors option) at EIFS soffits. Provide fire rated units when required by local authorities. At glass tower, provide units with flush screwdriver operated locks with steel ring cam.
- B. Acceptable Manufacturers: Acudor; model UF-5000, PS-5030 (plaster flange) FW-5050 (fire rated). Babcock-Davis: Cierra Products model; B-nt, B-NP (plaster), B-IT Ifire rated). JL Industries, Inc.; model TM - model FD (fire rated). Karp Assoc., Inc.; model DCS-214M, DSC-214 pl (plaster), KRP-150 FR (fire rated). Larsen's Manufacturing Co.; model L-MPG, L-FRAP (fire rated). Milcor; style M, style K (plaster), UFR (fire rated). Mifab Manufacturing: style UA, CAD-FL-PL (plaster) MPFR (fire rated).

PART III - EXECUTION

3.01 INSTALLATION

- A. Install operating equipment complete with necessary hardware, in accordance with final shop drawings, and manufacturer's instructions.
- B. Painting: See Section 09910.
- C. Upon project completion lubricate, test and adjust doors/grilles to operate easily, free from wrap, twist of distortion.

END OF SECTION

SECTION 08450 - ALUMINUM STOREFRONTS & AUTOMATIC ENTRANCES

PART I - GENERAL

1.01 DESCRIPTION

A. Aluminum storefronts and automatic entrances include the following:

1. Storefront framing systems.
2. Automatic sliding entrance doors.
3. Interior storefront systems.

B. Electrical connections are specified in Division 16.

1.02 SYSTEM PERFORMANCE

A. General: Provide automatic entrance and storefront assemblies that have been designed and fabricated to comply with performance characteristics listed below.

1. Wind loading: System shall withstand uniform pressure of 30 PSF (1440 Pa) with maximum deflection of 1/175 of span and allowable stress with a safety factor of 1.65.

Entrance Operator: Provide operators which will open and close doors and maintain them in fully closed position when subjected to the 30 MPH wind velocity or equivalent inward differential pressures.

2. Air infiltration: Tested in accordance with ASTM E-283 shall not exceed .06 CFM/SQ. FT. of fixed area.
3. Water infiltration: Tested in accordance with ASTM E-331 shall allow no penetration at 8 PSF pressure.
4. Thermal: All framing members shall incorporate a thermal barrier eliminating direct contact between exterior and interior aluminum sections.

1.03 QUALITY ASSURANCE

A. Each type of system is based on one manufacturers system respectively. Acceptable alternate manufacturers are listed but must conform in every way to the base system.

1. Any deviation from Walgreens required finishes, colors, etc., must be approved by Walgreens and fully coordinated with all similar and related systems.

B. Powered door operators shall comply with UL 325.

C. Automatic entrances shall be UL listed as an exitway and comply with A.D.A. requirements.

1.04 SUBMITTALS

A. Submit shop drawings for each type of system.

## PART II - PRODUCTS

### 2.01 ACCEPTABLE STOREFRONT MANUFACTURER

- A. Storefront Systems (base system): Kawneer Company #Trifab VG 451 -T-CG, thermally broken, center glazed, flush glazed system 2" x 4-1/2" profile with shear block, to receive 1" insulating glass. Store front in glass tower shall receive 1/4 thick glass.

Color: Clear Anodized, AA-M12C22 A41, Class I Anodic coating.

- B. Alternate Storefront Manufacturers:

1. United States Aluminum Corp. #IT 451, thermally broken.
2. Vistawall Architectural Products, Series 3000, Thermal Flush Glaze.

- C. Glass tower (only) shall receive 1/4" thick glass set in 1 3/4" x 4 1/2" profile, center glazed, flush glazed system, shear block construction.

1. Kawneer Trifab II 450
2. United States Aluminum Corp Series 450
3. Vistawall Architectural Products Series 2000

Color: Clear anodized AA-M12C22 A41 Class 1 Anodic coating.

### 2.02 ACCEPTABLE AUTOMATIC ENTRANCE MANUFACTURER (National Accounts)

- A. Automatic Entrance System (base system): Horton Automatic #2-2110WD/T single slide door or Stanley Access Technologies, model #313865. See Article 2.02.B regarding the National Account Program. The slide-swing panel, installed to the exterior of the fixed sidelight, shall swing out 90 degrees from any position of slide movement and include a concealed spring closer to reclose door if pushed open. System components include:

1. Aluminum doors with fixed sidelights, fixed center light and transom. Provide 1/4" thick glass at sliding panels, 1" insulating glass at all other panels, safety glazed as required by code.
2. Structural aluminum section to be 6063 -T alloy, minimum 0.125 " thick.
3. Continuous header concealing ball bearing wheels, support track operator and closers.
4. Bi-directional scan motion/presence detectors for one-way or two-way traffic (as required) and safety devices in door openings to detect objects present during closing cycle and recycle doors. Adjust for two-way traffic at liquor store locations.
5. Concealed spring door closers, ON-OFF hold open switches, keyed entry switch (at entry door only), rim cylinder locks with exterior cylinder guards and thumb-turn on interior side.
6. Aluminum thresholds and weatherstripping at j amb, head and sill.
7. Break-away door stops, flush (integrally glazed) muntin bars flush cart bars in sidelights, doors and center light, glass stops and recessed pull handle at entry door muntin bar.
8. Stainless steel tubular guide rails (with one horizontal) and guide posts (quantity may vary per project).

9. Walgreens required decals including "Caution Automatic Door".
  10. Finish: clear anodized, AA-M12 C22A41 Class I anodic coating.
  11. Key Switch: Located on exterior frame for after hours operation of door.
- B. National Accounts: Walgreens has established National Accounts with Horton Automatics and Stanley Access Technologies. Each manufacturer has been assigned specific geographic areas (indicated below) to which each will supply automatic entrance doors.
- Contacts: Mr. Marc Voilette  
Stanley Access Technologies  
65 Swamp Scott Road  
Farmington, CT 06032  
Phone: (860) 409-6522  
Fax: (860) 679-6436  
E-mail: MVoilette@stanleyworks.com
- C. Motion/Presence Detector: Sensing system utilizing planar K-band microwave motion detection and focused active infrared presence detection. The presence detection shall overlap the motion detection at the threshold. The presence detection shall never shut off during the closing cycle. Provide units with remote control adjustability. Provide on each side of door: Stanley "SU-100" motion detection and Stanley "Stanguard" infrared threshold sensors on Stanley doors. Color, all units: black. Provide a horizontal photoelectric holding beam for redundant safety.
- D. Operator: Electro-mechanical operator with 1/8 HP DC permanent magnet motor and regulated electronic controller. Operator functions to be microcomputer controlled to automatically provide operating forces and speeds as prescribed by ANSI A156 10-1985. An ON-OFF/hold open power switch shall be located on inside of header. Operator shall convert to free manual operation of door during power failure. Provide adjustable time delay from 1 to 28 seconds minimum. Operator shall reverse when 15 lbs. maximum is exerted to prevent door from closing. Include provisions to prevent damage to operator when locks/latches/bolts are engaged.
- E. Hardware: Closers: Spring closer  
Rim Cylinder Lock: Adams Rite #MS 1850-S-050, anodized finish.
- Cylinder Guard: Adams Rite # MS4043.  
Thumb Turn: Adams Rite #4066.  
Key switch: By automatic entrance manufacturer.  
Threshold: By automatic entrance manufacturer, continuous across entire masonry opening.
- F. Weatherstripping: Adjustable nylon sweeps on bottom of sliding doors.  
Double pile weatherstripping on lead edges of sliding doors including lock area.  
Single pile weatherstripping between carrier and header, on lead stiles of sidelights and pivot stiles of sliding doors

### PART III - EXECUTION

#### 3.01 PREPARATION

- A. Field Measurement: Take field measurements prior to preparation of shop drawings and fabrication, to ensure proper fitting of work.
1. Contractor shall provide rough opening to receive Walgreens standard size automatic entrance doors. See drawings for other sizes that apply to stores with liquor departments or vestibules. Non standard sizes must be approved in writing by Walgreens Project Architect.



3.02 INSTALLATION

- A. Comply with manufacturer's specifications and recommendations.
- B. Set units plumb, level and true to line, without warp or rack of frames or doors. Anchor securely in place. Separate aluminum and other corrodible metal surfaces from sources of corrosion or electrolytic action at points of contact with other materials.
- C. Set sill members in a bed of sealant or with joint fillers or gaskets to provide weathertight construction.
- D. Install complete door operator system in accordance with manufacturer's instructions, including piping (if any), controls, control wiring, and remote power units (if any).
- E. Glass and Glazing: See Section 08800.
- F. Guide rails to be set in cored holes and grouted in place.

3.03 ADJUST AND CLEAN

- A. Adjust operating devices and hardware to function properly, without binding, and to provide tight fit at contact points and weatherstripping.
- B. Clean aluminum surfaces promptly after installation. Remove excess glazing and sealant compounds, dirt and other substances.

END OF SECTION

SECTION 08700 - FINISH HARDWARE

PART I - GENERAL

A. The extent of finish hardware required is shown on drawings and schedules.

B. Types of required hardware:

Butt Hinges  
Door Pulls and Push Plates  
Locks, Latch Sets and Rim Cylinders  
Keyless Combination Lock  
Vertical Rod Assembly  
Security/Panic Bar  
Closers  
Wall and Floor Bumpers  
Silencers  
Thresholds, Sweeps and Weather-stripping  
One-Way Viewer  
Door Protection and Kick Plates

1.02 QUALITY ASSURANCE

A. Obtain each type of hardware from a single manufacturer.

B. Hardware supplier shall have warehousing facilities and shall have been furnishing finish hardware for not less than three years.

C. Fire-Rated Openings: Provide hardware complying with NFPA 80 and local codes and ordinances. Furnish units with "UL" or "FM" labels as required.

D. Accessibility: Provide hardware complying with the requirements of the "Americans With Disabilities Act".

E. Discrepancies: Furnish proper types, finishes, fasteners, and quantities based on codes, requirements, etc. in effect at time of installation.

1.03 SUBMITTALS

A. Hardware Schedule: Final hardware schedule fully coordinated with other work, frames and operation.

Indicate type, style, function, finish, fastening location and manufacturer for each hardware item.

B. Templates: Furnish templates to each fabricator of doors, frames, and work factory prepared to receive hardware.

PART II - PRODUCTS

2.01 SCHEDULED HARDWARE

A. Requirements for design, grade, function, finish, size, etc. are indicated on the criteria drawings.

B. Manufacturers; Provide hardware from manufacturers listed in the schedule (on drawings) or the comparable products of the alternate manufacturers listed below;

Item:	Alternate Manufacturers:
Butt Hinges;	Hager, McKinney
Door Pulls & Push Plates;	Hager, Rockwood
Lock Sets, Latch Sets	Arrow, Sargent, Schlage, Yale
Rim Cylinders;	
Keyless Combination Locks;	None
Alarm Locks;	None
Vertical Rod Assemblies;	None
Security/Panic Bar;	None
Closers	LCN, Yale, Sargent
Wall/Floor Bumpers	Hager, Rockwood
Silencers	Hager, Rockwood
Thresholds, Sweeps	National Guard, Pemko
Weather-stripping	Pemco, Reese, Zero
One-Way Viewer	Rockwood, Stanley
Door Protection & Kick Plates	Hager, Rockwood

2.02 MATERIALS & FABRICATION

- A. Hand of Door; Drawings show swing of each door leaf. Furnish each hardware item for proper installation and operation of door movement.
- B. Manufacturers Nameplates; Shall not be visible except for required UL labels.
- C. Fasteners: Conform to templates, prepared for machine screw installation. Provide Phillips flat-head screws (unless noted otherwise), finish to match hardware. Provide concealed fasteners when available. Do not use exposed thru-bolts. (Unless noted otherwise). Thru-bolts allowed at Sur-Lock and Securitech hardware.

2.03 HINGES

- A. Screws; Phillips flat-head machine screws except furnish Phillips flat-head wood screws for installation into wood. Screw finish to match hinge.
- B. Hinge Pins; Exterior doors, non-removable pins. Interior doors, non-rising pins (unless noted otherwise).

2.04 LOCK CYLINDERS & KEYING

- A. Keying: Locks shall not be master keyed. Provide keying as indicated on the hardware schedule on sheet A4.3.

2.05 LOCKS, LATCHES, BOLTS

- A. Strikes; Provide manufacturers standard wrought box strike for each latch or lock bolt, with curved lip extended to protect frame, finished to match hardware set.
- B. Lock Throw: Provide 5/8" minimum. Comply with UL for rated doors.

2.06 PUSH/PULL UNITS

- A. Provide manufacturers standard exposed fasteners.

2.07 CLOSERS

- A. Comply with manufacturers recommendations for closer size, door size, exposure and use. Thru-bolt fasteners shall be used only at interior wood doors.

- B. Access-free doors: Where installation must be handicapped accessible, comply with A.D.A. regarding opening force and delayed action.

#### 2.08 DOOR TRIM UNITS

- A. Protection Plates and Kick Plates; Stainless steel (US 32D finish) .038" (20 ga.), fabricated to dimensions indicated on Criteria Drawings. Provide protection plates with overlapping wrap around door edges.

Mount with manufacturers standard exposed fasteners.

#### 2.09 WEATHERSTRIPPING

- A. Jambs and heads: Continuous extruded aluminum walls and flanges with bumper type, replaceable, flexible bulb/loop vinyl insert.

- B. Door sweep: Extruded aluminum with loop type replaceable rubber insert.

#### 2.10 SECURITY BAR

- A. See drawings for model numbers. For Sur-Lock, contact Locknet, Michelle Cooper at (800-887-4307 x1231). For Securitech, contact Marc Kapelus at Kaploss Security (800-548-7486)

### PART III - EXECUTION

#### 3.01 INSTALLATION

- A. Mount height for devices required for accessible door passage, including, but not limited to lever handles, knobs, pushplates, pull handles, alarm locks, cylinder locks etc. shall not exceed 48" above finish floor (a.f.f.) or as required to comply with Americans With Disabilities Act. Unless required otherwise by code, mount hardware as noted below.

1. 40 5/16" a.f.f. to centerline of strike for latches, locks, knobs, levers, cross bar exit devices.

2. 42" a.f.f. to centerline of door pulls.

3. 45' a.f.f. to centerline of dead bolts, push plates.

- B. Set units plumb, true to line and location, attached as required for proper operation.

- C. Set thresholds for exterior doors in a full bed of butyl rubber or polyisobutylene sealant.

#### 3.02 ADJUST AND CLEAN

- A. Replace units which cannot be adjusted for proper operation.

- B. Final adjustment must occur within one week of occupancy by tenant.

END OF SECTION



SECTION 08800 - GLASS AND GLAZING

PART I - GENERAL

1.01 DESCRIPTION

- A. Glass and glazing work includes:
  - 1. Insulated storefront.
  - 2. Entrance glazing, not indicated as pre-glazed.
  - 3. Interior laminated glass.
  - 4. Mirrors.

1.02 SYSTEM PERFORMANCE

- A. Provide glass and glazing that will withstand normal temperature changes, wind loading, impact loading, etc. without breakage of glass, failure of seals and loss of air-tightness and water-tightness.
- B. See other Division 8 Sections for related performance requirements.

1.03 DEFINITIONS

- A. Sealed insulation glass unit surfaces:
  - Side 1 - Exterior surface of outer pane.
  - Side 2 - Interior surface of outer pane (facing airspace).
  - Side 3 - Interior surface of inner pane (facing airspace).
  - Side 4 - Exterior surface of inner pane.

1.04 QUALITY ASSURANCE

- A. Comply with recommendations of the Float Glass Marketing Association "Glazing Manual" and "Sealant Manual".
- B. Comply with Sealed Insulating Glass Manufacturer's Association (SIGMA) #65-7-2.
- C. Comply with ASTM C 1036 or ASTM C 1048 (tempered), ASTM C 1172 (laminated glass) and CPSC 16 CFR Part 1201 (safety glazing).
- D. Warranty: Provide written warranty covering manufacturing defects, signed by the manufacturer, for the periods stated below after substantial completion.
  - 1. Insulated Glass: Manufacturers standard, ten-year minimum period.
  - 2. Float Glass: Manufacturers standard five-year minimum period.
  - 3. Laminated Glass: Manufacturers standard, four-year minimum period.
  - 4. Mirrors: Manufacturers Standard five-year period protecting against silver spoilage.

PART II - PRODUCTS

2.01 MANUFACTURERS

- A. Subject to compliance with requirements, provide products by:

Ford Motor Co., Glass Division  
Libbey-Owens-Ford Co., Pilkington/LOF Building Products.  
Monsanto Co.  
PPG Industries, Glass Group  
Guardian Industries Corp and Viracon  
Viracon Inc.

2.02 GLASS PRODUCTS - GENERAL

- A. Provide Primary glass complying with FS DD-G-451 and Heat-Treated glass complying with FS DD-G- 1403.
- B. Fabricate to sizes and thickness recommended by glass manufacturers for application indicated.
- C. Heat Strengthening: If climatic, or shading conditions exist which will cause increased thermal stresses in the glass, increasing the possibility of thermal breakage, provide heat strengthened glass complying with ASTM C 1048, Kind HS.

2.03 GLASS PRODUCTS

- A. Clear Uncoated Float Glass: Annealed, Type 1, Class 1 (transparent), quality q3 (glazing select), and nominal thickness 1/4 inch.
- B. Clear Tempered Float Glass: Grade B (fully tempered), style I (uncoated surfaces), type I (float), quality q3, class 1.
- C. Tinted Uncoated Float Glass (outer pane): Annealed tinted float glass, Type 1, Class 2, Quality q3, nominal thickness 1/4 inch.
1. Acceptable Products: Ford Glass; Sunglas Blue, Pilkington/LOF; Optifloat Blue-Green Tinted, PPG; Azurlite Tinted.
  2. Performance Characteristics:
    - a. Visible Light Transmittance: 71 to 75 percent
    - b. Visible Light Reflectance: 7 percent
    - c. Total Solar Energy Transmittance; 35 to 49 percent
    - d. Total Solar Energy Reflectance: 6 to 7 percent
    - e. UV Transmittance: 28 to 32 percent
    - f. Summer U-Value: 1.09 to 1. 11.
    - g. Winter U-Value: 1.09
    - h. Solar Heat Gain Coefficient: 0.51 to 0.62.
    - i. Shading Coefficient: 0.60 to 0.72.
- D. Tinted Uncoated Float Glass (Alternate outer pane): Annealed tinted float glass, Type 1, Class 2, Quality q3, nominal thickness 1/4 inch.
1. Acceptable Products: Pilkington/LOF; EverGreen High Performance Tinted, PPG; Atlantica Tinted.
  2. Performance Characteristics:
    - a. Visible Light Transmittance: 65 to 67 percent.
    - b. Visible Light Reflectance: 6 to 7 percent.



- c. Total Solar Energy Transmittance: 34 to 36 percent.
  - d. Total Solar Energy Reflectance: 5 to 7 percent.
  - e. UV Transmittance: 14 to 16 percent.
  - f. Summer U-Value: 1.11.
  - g. Winter U-Value: 1.09.
  - h. Solar Heat Gain Coefficient: 0.51.
  - i. Shading Coefficient: 0.59 to 0.60.
- E. Low-Emissivity Coated Flat Glass (inner pane): Annealed clear coated float glass, coating on side 3, Type 1, Class 1, Quality q3; with pyrolitic coating, nominal thickness 1/4 inch.
- 1. Acceptable Products: Guardian Commercial Low-E (LE-75), Pilkington/LOF; Energy Advantage Low-E Glass, PPG; Sungate 500 Low-E Glass, Viracon Solarscreen Low-E VE-185.
  - 2. Performance Characteristics:
    - a. Visible Light Transmittance: 82 percent
    - b. Visible Light Reflectance: 10percent
    - c. Total Solar Energy Transmittance; 65 percent
    - d. Total Solar Energy Reflectance: 10 percent
    - e. UV Transmittance: 49 percent
    - f. Summer U-Valve: 0.63.
    - g. Winter U-Valve: 0.73
    - h. Solar Heat Gain Coefficient: 0.69.
    - i. Shading Coefficient: 0. 81.
- F. Laminated Safety Glass: Two panes of equal thickness, laminated together with a 0.030" thick plastic interlayer for total thickness of 1/4" complying with the following:
- 1. Plastic Interlayer: Glass manufacturers standard clear polyvinyl butyral interlayer which shall not show tendency to bubble, discolor or lose physical or mechanical properties after laminating.
  - 2. Glass: Clear float glass, both panes (tempered if required by code).
- G. Mirrors: 1/4" polished plate glass panels, silver coated and hermetically sealed with a uniform coating of electrolytic copper plating.
- H. Transparent Mirror: 1/4" thick, with pyrolitic coating applied to gray tint glass. Visible transmittance 12%, visible reflectance 60%.
- I. Translucent White Laminated Glass (65% visible light transmittance): Two panes of equal thickness, laminated together with a minimum .015 thick plastic interlayer for a total thickness of 1/4" complying with the following:
- 1. Plastic Interlayer: Glass manufacturer's standard translucent white polyvinyl butyral interlayer which shall not show tendency to bubble, discolor or lose physical or mechanical properties after laminating.
  - 2. Glass: Clear float glass, both panes (tempered if required by code).
- J. Spandrel Glass: 1/4" thick, Lead-free ceramic frit enamel coated ASTM C-1048, Condition B (spandrel glass, one surface coated), Type 1 (transparent glass, flat), Quality q3.
- 1. Apply coating to #2 side of an insulated assembly.
  - 2. Provide blue, subdued gray or green opaque finish to compliment color of insulating tinted glass on remainder of store. Submit samples to Walgreens Project Architect for approval.

- K. Wired Glass: 1/4" thick, UL listed, clear polished flat rolled glass complying with ANSI-Z97.1, reinforced with diamond pattern wire mech.

2.04 GLAZING SEALANTS (Interior Applications)

- A. General: Comply with recommendations of sealant and glass manufacturers for selection of glazing sealants with performance and compatibility characteristics suitable for application and conditions indicated.
- B. Colors: Match color of frame finish.

2.05 GLAZING GASKETS/TAPE

- A. Glazing Gaskets: ASTM C864, resilient polyvinyl chloride, extruded shape to fit glazing channel retaining slot; black color.
- B. Glazing Tape: Closed cell polyvinyl chloride foam, maximum water absorption by volume 2 percent, designed for 25 percent compression for air barrier vapor retarder seal, black color, coiled on release paper over adhesive on two sides; widths required for specified installation.
- C. Glazing Tape: Butyl compound tape with integral resilient tube spacer, 10 to 15 Shore A durometer hardness, black color, coiled on release paper, widths required for specific installation.

2.06 MISCELLANEOUS GLAZING MATERIALS

- A. Compatibility: All materials shall be compatible with surfaces contacted in installation.
- B. Cleaners, Primers and Sealers: As recommended by sealant/gasket manufacturer.
- C. Setting Blocks; ASTM C 864 neoprene, 80 to 90 Shore A durometer hardness; length 4 inches, width of glazing rabbet space less 1/ 16 inch, height required for glazing method, pane weight and pane area.
- D. Spacers: Shims: ASTM C 864: neoprene, 50 to 60 Shore A durometer hardness; length 3 inches, one half height of glazing stop, thickness required for application, one face self-adhesive.
- E. Glazing Splines: ASTM C 864, resilient polyvinyl chloride, extruded shape to fit glazing channel retaining slot; black color.

2.07 FABRICATION

- A. Sealed Insulating Glass Units: Fabricate in accordance with ASTM E 774, Glass CBA
  - 1. Components:
    - a. Outer Pane: Tinted uncoated float glass, blue color (see Part I regarding geographic areas requiring use of alternate outer pane glass). Provide clear glass at entry sidelights and transom.
    - b. Air Space: 1/2 inch wide, hermetically sealed, dehydrated air space.
    - c. Inner Pane: Low-E glass.
    - d. Provide unit edge seals meeting requirement pf ASTM E 773, with aluminum spacers having mitered comers and silicone sealant for glass-to-spacer seals.

## PART III - EXECUTION

### 3.01 PREPARATION / INSTALLATION

- A. Clean glazing/ framing members immediately before glazing to remove all detrimental substances.
- B. Adjust glazing channel dimensions as required by conditions for proper bite, edge/face clearances, and seal thickness.
- C. Install properly sized setting blocks in sill rabbet at one quarter of glass width from each corner, but not closer than 6" unless noted. Set blocks in thin course of sealant suitable for heel bead use.
- D. Provide spacers and edge blocks, correctly sized for conditions. Provide 1/8" minimum bite of spacers on glass.
- E. Miter cut wedge-shaped gaskets at comers, prevent pull away at corners, seal corner and butt joints as recommended by gasket manufacturer.
- F. Trim sight exposed tape flush with stop and finish sealant flush with sight line.
- G. Install transparent mirror with mirror coating facing "subject" side.

### 3.02 PROTECTION AND CLEANING

- A. Protect glass from contaminating substances.
- B. Remove and replace broken, chipped, cracked, abraded or damaged glass.
- C. Remove labels and wash glass on both faces prior to final acceptance as directed by Walgreens.
- D. Remove glazing materials from finish surfaces.

END OF SECTION



SECTION 09250 - GYPSUM DRYWALL

PART I - GENERAL

1.01 DESCRIPTION

- A. Types of work include:
  - 1. Gypsum drywall including screw-type metal support system.
  - 2. Gypsum backing boards for application of other finishes.
  - 3. Exterior gypsum drywall materials.
  - 4. Drywall finishing.

1.02 QUALITY ASSURANCE

- A. Fire-resistance ratings: Where fire-resistance ratings are indicated, provide materials/ assemblies complying with ASTM E 119-00a and as required by local authorities.
- B. Comply with recommendations of Gypsum Association GA-216.
- C. Comply with ASTM C 1396, "Specification for Gypsum Board".

PART II - PRODUCTS

2.01 METAL SUPPORT MATERIALS

- A. Ceiling support systems: Size components to comply with ASTM C 754.
  - 1. Main runners: Hot or cold-rolled steel channels with rust inhibitive paint.
  - 2. Hanger wire: ASTM A 641, soft, Class 1 galvanized.
- B. Furring members: ASTM C 645; 25 ga. min. thickness, hat-shaped or C-shaped (spans over 4 ft.).

2.02 WALL/PARTITION SUPPORT MATERIALS

- A. Studs: ASTM C 645; 22 ga. min. thickness, 3-5/8" or 6" as noted. Provide heavier ga. if required by Architect of Record or by manufacturer's span table for allowable gauge minimums.
- B. Runners: Match studs, use type recommended by stud manufacturer for conditions.
- C. "Z"-Furring members: Screw-type galvanized steel, ASTM A 653, G60, 24 ga. min. thickness designed for mechanical attachment of insulation boards to masonry and concrete walls.
- D. Fasteners: Type and size recommended by stud/furring manufacturer for conditions.
- E. Deflection Track: ASTM A-653, galvanized steel sheet deep leg track, provide: "SLP-TRK" by Sliptrack Systems, Inc., "Deep Leg Track w/Slip Clip" by Fire Trak Corp., "Deflection Track" by Marino/Ware® or "VertiClip SLD" series by Steel Network, Inc.

2.03 GYPSUM BOARD

- A. Gypsum Wallboard: ASTM C 1396, regular types unless noted otherwise. Provide Type X for fire-resistant rated assemblies.
  - 1. Thickness: 5/8" minimum.
  - 2. Edges: Tapered.

- B. Water-Resistant Backing Board (WR): ASTM C 1396, regular types unless noted otherwise. Provide Type X for fire-resistant rated assemblies.
  - 1. Thickness: 5/8" minimum.
  - 2. Edges: Tapered.
- C. Exterior Gypsum Ceiling and/or Soffit Board: ASTM C 1396, Type X, "Fireshield" or "Firecode Core" for fire-resistant rated assemblies. Provide manufacturers standard edges.
  - 1. Thickness: 5/8" minimum.
  - 2. Acceptable products; USG "Sheetrock Brand Exterior Gypsum Ceiling Board", National Gypsum "Gold Bond Brand Exterior Soffit Board".

2.04 TRIM ACCESSORIES

- A. Provide manufacturers standard galvanized corner-beads, L-type edge trim beads, U-type edge trim beads, and one piece control joint beads.

2.05 JOINT TREATMENT

- A. ASTM C 475 as recommended by manufacturer for application intended.
- B. Joint Tape: Paper reinforcing tape.
- C. Joint Compound: Vinyl-type powder or ready-mixed for interior use, except as noted otherwise below:
  - 1. Grade: Single multi-purpose grade for entire application.
  - 2. Water-Resistant Joint Compound: Special water resistant type. Treat joints, fastener heads and cut edges. Use USG Sheetrock Setting-Type (Durabond 45 or 90), or approved equal.
  - 3. Exterior Gypsum Board Joint Compound; Use USG Sheetrock Setting-Type (Durabond), Durabond LC, Sheetrock Lightweight (Easy-Sand), or approved equal.

2.06 MISCELLANEOUS MATERIALS

- A. Comply with gypsum board manufacturer recommendations.
- B. Gypsum Board Screws: Comply with ASTM C 1002.01.
- C. Sound Attenuating Blankets: FS HH-1-521 Type I; semi-rigid mineral fiber blankets, Class 25 flame spread, full thickness of stud.
- D. Security Mesh: ASTM A-1011, ASTM F1267, Type I, Class 1,2, and 3, Grade A, 16 gage carbon steel, expanded to form a 3/4 inch diamond mesh.
- E. Exterior Soffit Vents: Continuous vent. Provide gauge and ventilation area to suit conditions.
  - 1. Acceptable manufacturers:
    - a. Superior Products, SFT series, galvanized steel ventilation screed. Color: Paint to match adjoining EIFS.
    - b. Alcoa, "Vent-a-Strip", model 70 or 79, color: white.
    - c. Amico "Vinyl Soffit Screed Ventilator", insert style AMSVI-300 or sheathing style AMSV-300-50.
    - d. Stockton Products "soffit vent/reveal screed.

### PART III - EXECUTION

#### 3.01 INSTALLATION OF METAL SUPPORT SYSTEMS

- A. Installation Standard: ASTM C 754.
- B. DO NOT BRIDGE building expansion joints with support system.
- C. Ceiling Support Systems: Secure hangers to structural support by direct connection where possible. DO NOT ANCHOR support systems to metal roof deck.
  - 1. Level main runners to tolerance of 1/4" in 12'-0" measured in any direction.
  - 2. Attach metal wall track/angle wherever system meets vertical surfaces. Mechanically join support members, butt-cut to fit wall track.
  - 3. Install auxiliary trim/framing at termination of drywall work, at light fixtures, etc., for proper support of drywall and other work.

#### 3.02 WALL/PARTITION SUPPORT SYSTEMS

- A. Install supplementary framing, blocking and bracing at terminations in work for support of fixtures, equipment, grab bars, toilet accessories, etc.
  - 1. At partitions which: Adjoin another tenant (demising wall), support soffits or decor wall fixtures, provide 22 ga. 6" studs at 24" o.c., attached to structure, Extend drywall up tight to metal deck. Provide horizontal black iron bridging at third points.
  - 2. Provide 20 ga. At 16" o.c. at partitions supporting storage ledges.
  - 3. Demising Walls: Provide security mesh behind gypsum board fastened to studs on Walgreens side. (Apply if applicable).
- B. Isolate stud system from transfer of structural loading.
  - Space control joints: 30 ft. o.c. or less at partitions.  
50 ft. o.c. or less at ceilings.
  - If top track of partition is secured to roof deck, provide "deflection track" with 2" flange and install continuous bridging within 1 ft. of track. Do not attach stud to deflection track to accommodate allowable roof deflection.
- C. Install studs and furring vertically. Space studs 24" o.c. unless noted otherwise. Space furring members at 24" o.c. unless noted otherwise. Space 16" o.c. behind fixturing.
- D. Provide Type X gypsum board at walls which: adjoin other tenants, separate General Sales from Stock.
- E. Provide water-resistant (WR) gypsum board at all plumbing walls.
- F. Erect thermal insulation vertically and hold in place with Z-furring members spaced 24" o.c.

#### 3.03 GYPSUM BOARD INSTALLATION

- A. Application and Finishing Standards: ASTM 840 and GA 216.
- B. Locate exposed end butt joints as far from center of walls and ceilings as possible. Avoid butt ends when possible.



- C. Do not install imperfect, damaged or damp boards.
- D. Locate ends/edges over supports. Do not place tapered edges against cut edges. Stagger vertical joints over different studs on opposite sides of partition.
- E. At wet areas, apply un-cut long edge of WR board at bottom of work. Seal all ends, cut edges and penetrations.
- F. Fasten all gypsum board to supports with screws.
- G. Exterior Soffits: Install exterior gypsum board perpendicular to supports, with end joints staggered over supports.

#### 3.04 DRYWALL TRIM ACCESSORIES

- A. Install metal trim as follows:
  - 1. Corner beads at external comers.
  - 2. Edge trim where gypsum board edge would be exposed or semi-exposed.
    - a. L-type where work abuts other work.
    - b. U-type at exposed edges, reveals, gasketed or sealant-filled joints.

#### 3.05 DRYWALL FINISHING

- A. Prepare work as required for decoration (textured finishes prohibited).
- B. Apply joint tape at joints except where trim accessories occur.
- C. Apply joint compounds in 3 coats and sand between last 2 coats and after last coat.
  - 1. Level 4 finish; shall be applied to all surfaces to receive paint, wall covering, mirrors or wainscoting.
  - 2. Level 3 finish; shall be applied to Toilet Room and Porter area surfaces to receive water-resistant gypsum board, ceramic tile and fiberglass polyester panels.
  - 3. Level 1 finish; may only be applied to surfaces located in ceiling plenums not exposed to view, if acceptable to local code authorities. Level 1 finish shall begin not less than 12 inches above finish.
- D. All joints to be taped, filled and sanded.

END OF SECTION

SECTION 09300 - CERAMIC TILE

PART I - GENERAL

1.01 DESCRIPTION

- A. Extent of unglazed ceramic mosaic tile and glazed tile trim is shown on drawings and schedules.

1.02 QUALITY ASSURANCE

- A. All work shall be installed in compliance with ANSI standards and the latest edition of the Tile Council of America's "Handbook for Ceramic Tile Installation".
- B. Ceramic tile materials shall comply with ANSI A 137.1 "Standard Specifications for Ceramic Tile".
- C. Install grout and tile sealer in strict conformance with manufacturer's instructions.

PART II - PRODUCTS

2.01 TILE

- A. Manufacturer: American Olean, contact: Janet Kennedy (847) 238-9780, ext. 308.
- B. Terra Granite series glazed Ceramic Floor Tile:
  - 1. Color: UP83 "Speckled Linen".
  - 2. Type: Vitreous.
  - 3. Size: Nominal 12" x 12" x 5/16" thick.
  - 4. Face: Slip-resistant with cushioned edges.
- C. Base: Glazed finish S-3689T.
  - 1. Color: UP83 "Speckled Linen".
  - 2. Type: Vitreous.
  - 3. Size: 6" x 8"
  - 4. Face: Cove base with rounded top and matching external out-comers.
- D. Bullnose: S-4489, color to match floor tile.

2.02 MORTAR

- A. Dry-Set Portland Cement Mortar: Product shall comply with ANSI A 118.1.
- B. Latex-Portland Cement Mortar: Product shall comply with ANSI 118.4.

2.03 GROUT

- A. Commercial Portland Cement Grout: Product shall comply with ANSI 118.6. Provide W.R. Bonscal Co., color: Taupe (or equal in matching color).

2.04 GROUT & TILE SEALER

- A. Furnish and install one of the following invisible penetrating sealer products: Bostik Findley water-based acrylic "Grout & Tile Sealer™", Custom Building Products water-based "SurfaceGard®". TileLab® Grout & Tile Sealer" or "TileLab® Grout Sealer".

PART III – EXECUTION

3.01 INSTALLATION

- A. Comply with applicable part of ANSI 108 for tile installation.
- B. Comply with applicable parts of TCA "Handbook for Ceramic Tile Installation".
  - 1. Floor Tile: TCA F 113-95, Dry-Set Mortar or Latex-Portland Cement Mortar.
  - 2. Wall Tile: TCA W 223-95 and W 244-95 Dry-Set Mortar or Latex Portland Cement Mortar.
- C. Extend tile work into recesses and behind fixtures. Terminate work without disrupting pattern or joint alignment.
- D. Fit tiles closely to penetrations so that collars/covers overlay tile.
- E. Jointing: Lay tile in grid pattern, with 1/4" joint.
- F. Grout tiles in conformance with ANSI A108.10.

3.02 CLEANING AND PROTECTION

- A. Clean all completed ceramic tile surfaces to be free of foreign matter.
- B. Finish installation shall be free of cracked, broken, chipped, unbonded, mis-aligned or other defective tile work.

END OF SECTION

SECTION 09510 - ACOUSTIC CEILINGS

PART I-GENERAL

1.01 DESCRIPTION

- A. The extent of acoustic panel ceilings with exposed suspension, with integrated recessed fluorescent lighting is shown on the drawings.

1.02 QUALITY ASSURANCE

- A. Fire Performance Characteristics: Provide components identical to those tested according to ASTM, UL as listed and as acceptable to authorities having jurisdiction.
  - 1. Surface Burning: ASTM E 84
    - a. Flame Spread: 25 or less.
    - b. Smoke Developed: 50 or less
  - 2. Fire-Resistance Ratings: Provide systems with ratings as required by authorities having jurisdiction.
- B. Comply with ASTM C 635, ASTM C 636 and Ceilings and Interior Systems Contractors Association (CISCA).

PART II - PRODUCTS

2.01 ACOUSTICAL CEILING UNITS

- A. General: Provide manufacturers standard units complying with FS SS-S-118 including all accessories required for applications encountered.
- B. Walgreens has established National Accounts with Armstrong for ceiling tile and grid for all stores. The regions and contacts for each are listed below.
  - 1. For Armstrong Systems: Contact the Strategic Account Group (800) 442-4212 9 select option 1).

2.02 ACOUSTIC PANELS

- A. Provide Type III, Form: 2, color: white, size: 24" x 48" x 5/8" edge: square-cut lay-in from one of the following:
  - 1. Armstrong "Fine Fissured Humiguard" # 1729
- B. Provide Type III, Form 2, color: white, size 24" x 24" x 5/8", edge; square-cut-lay-in from one of the following:
  - 1. Armstrong "Fine Fissured Huminguard" #1728.

2.03 METAL SUSPENSION SYSTEMS

- A. General: Double-web, direct hung system complying with ASTM C-635.
  - 1. Structural Classification: Intermediate duty.

2. Metal: Hot-dipped – galvanized steel 0.015" thick x 1-1/2" high x 15/16" face.
  3. Color: White
- B. Hanger Wire: Provide not less than 12 gauge galvanized carbon steel 1 ASTM A 641, soft temper.
  - C. Edge Moldings and trim: Manufacturers standard metal of types and profiles required for all applications encountered. Fabricate to fit all penetrations exactly.
  - D. Hold-Down Clips: Provide at 2 ft. o.c. on cross tees for interior panels subject to wind uplift or weighing less than 1 lb. /sq. ft.
  - E. Acceptable Manufacturers: Armstrong "Prelude XL" exposed tee, color white.
  - F. Seismic Areas: When required by authorities having jurisdiction provide "Heavy Duty" systems approved by local authorities: Armstrong "Prelude XL", Celotex "Classic Stab System" #PC 12-12-20 with stab-in cross tees.
    1. Compression Posts: USG's, Donn Corporation #VSA 12, 24 or 47 as required.
    2. Edge Molding: Manufacturers 2 inch wide unit conforming to local requirements.

### PART III - EXECUTION

#### 3.01 INSTALLATION

- A. Install systems in compliance with ASTM C 636, governing regulations and fire-resistance requirements. Support hangers only from structural members. Do not attach or suspend hangers from metal deck. Locate hangers not less than 6" from each end and spaced 4 ft. o.c. along main runner. Locate hangers at 4 ft. o. c. each direction if main runners are spaced greater than 4 ft. o.c. Level to within 1/8" in 12 ft. Limit deflection to 1/360 of span length in inches.
- B. Install hangers plumb and free from contact with objects that are not part of structural or ceiling system. Wire connections shall be capable of supporting a 100 lb. Allowable load.
- C. Provide main runners or continuous cross tees in line with the long dimension of each side of recessed lights. Provide a hanger wire at the midpoint of each cross tee located on the long dimension of a recessed light fixture. 4 ft. cross tees supporting light fixtures is prohibited. Entire suspension system shall be completely connected forming a homogeneous frame. Independent/unattached fields are prohibited.
- D. Pop rivets shall be minimized. Use only when manufacturer does not make an accessory to secure the system in the condition encountered.
- E. Provide trim and moldings as required to conceal edges of acoustic tiles.
- F. Install panels to fit accurately at borders and penetrations.
- G. Suspended ceiling system shall not be used to support ductwork, plumbing, sprinklers, insulation, etc.

#### 3.02 ADDITIONAL SEISMIC REQUIREMENTS

- A. General: Comply with requirements of authority having jurisdiction in the respective seismic zone.

- B. Individual light fixtures or other attachments to the ceiling system, with a combined weight of 56 lbs. or less shall have two 12 gauge wire hangers attached, with slack, at diagonal corners of the fixture to prevent drop out.
  - 1. Any fixture or attachment weighing greater than 56 lbs. must be independently supported from the structure.
- C. The minimum connection strength for main and cross runner intersection/splices shall be 60 lbs. in compression and tension (must allow 5 degree offset in any direction).
  - 1. Ceiling system actual weight, including grid, panel, light fixtures and air terminals to be 2.5 lbs./sq. ft. or less. All other services must be independently supported from structure.
  - 2. For ceiling weighing more than 2.5 lbs./sq. ft. consult local authorities for requirements.
  - 3. Provide vertical compression posts or struts as required by local authorities.
- D. The ceiling system cannot be used to provide lateral support for walls or partitions.
- E. Perimeter closure angles must provide a min. 7/8", support ledge. Terminal ends of grid or tile must rest on ledge with min. 3/8" clearance from wall.
  - 1. For support ledges smaller than 7/8", terminal ends of cross or main runners shall be independently supported within 8" from each wall or ceiling discontinuity. This support must prevent grid from falling. This support should not be out of plumb greater than 1 in 6. Maintain 3/8" end clearance from wall.
  - 2. All penetrations i.e., columns, sprinklers, etc. and independently supported fixtures are considered perimeter closures that must allow noted clearances.
- F. At wall closure ledges, cross and main runners must be prevented from spreading apart. Permanent attachment for grid alignment purposes is prohibited.

### 3.03 ADJUST AND CLEAN

- A. Clean exposed surfaces of panels, moldings and trim. Remove and replace work that cannot be cleaned to permanently eliminate evidence of damage.

### 3.04. ATTIC STOCK

- A. Provide two bundles (24 tiles minimum) of acoustic ceiling tiles for each type.

END OF SECTION





SECTION 09650 - RESILIENT FLOORING

PART I - GENERAL

1.01 DESCRIPTION

- A. Extent of resilient flooring is shown on drawings and schedules.

1.02 QUALITY ASSURANCE

- A. Provide resilient flooring complying with the following fire performance criteria.
  - 1. Smoke Density: Less than 450 per ASTM E 662.
  - 2. Critical Radiant Flux (CRF): Not less than 0.45 watts/sq. cm. per ASTM E 648 - Class I.
- B. Moisture vapor emission from the substrate shall not exceed 3 lbs. per 1,000 sq. ft. per 24 hour period for solid vinyl, rubber flooring and vinyl sheet flooring; or 5 lbs. Per 1,000 sq ft. per 24 hour period for vinyl composition tile. Testing shall be performed in conformance with ASTM F 1869.
- C. Relative Humidity within the substrate, measured by in-situ probes at not less than 40% of the slab depth, shall not exceed 90% for floors to receive vinyl composition tile and shall not exceed 80% for floors to receive solid vinyl or vinyl sheet flooring. Testing shall be performed in conformance with ASTM F 2170.
- D. Calcium Chloride test (ASTM F 1869) and relative Humidity test (ASTM F 2170) may be used alone or concurrently. If both tests are conducted concurrently, both must satisfy the specification requirements.
- E. Alkalinity of the substrate shall not exceed 9 on the ph scale. Test the ph of any area where concrete has been ground to ensure that alkalinity does not exceed requirements.
- F. Install resilient flooring in conformance with flooring manufacturer's instructions.
- G. Comply with ASTM F-710 "Standard Practice for Preparing Concrete to Receive Resilient Flooring".

1.03 DELIVERY STORAGE & HANDLING

- A. Protect and store finished flooring products for not less than 72 hours in the ambient conditions in which they will be installed and maintained during permanent use.

PART II - PRODUCTS

2.01 TILE FLOORING

- A. Walgreens has established National Accounts with Armstrong for selected resilient flooring. Manufacturer will be assigned a specific geographic region. Contact Walgreens project Architect for the regions of each manufacturer.
  - 1. Resilient Flooring Contacts:
    - a. Armstrong: Request Walgreens National Account pricing from local Armstrong wholesale distributor or contact Armstrong Strategic Accounts @ 800-442-4212.
- B. Vinyl Composition Tile: ASTM F 1066 (Latest Edition), size 12" x 12" x 1/8".
  - 1. Color #1:

- a. Armstrong Standard Excelon, Imperial Texture #51911, Color: “Classic White”.
- 2. Color #2: (Hallmark Field Color):
  - a. Armstrong Standard Exelon, Imperial Texture, color; #57501 “Nougat”.
- 3. Color #3: (Photo Area):
  - a. Armstrong Standard Excelon, Imperial Texture, Color: #51803 “Pearl White”.
  - b. Azrock by Tarket, Standard Grade, Cortina Colors; #V-957 “Fieldstone”.
- C. Solid Vinyl Flooring: ASTM 1700, Class 3, Type B-Embossed Surface
  - 1. Armstrong “Natural Options, Wood Collections” planks, Color: #T1024-691-medium, “Wood Oak.”, Size: 6” x 36” x 1/8”.
- D. Slip Resistant Flooring: (at ramps and as required by codes) ASTM F-1066 latest edition, 12” x 12” x 1/8”.
  - 1. Armstrong Safety Zone Excelon, Color: Weathered Alabaster #57002.
- E. Vinyl Sheet Flooring: Armstrong Type II, Grade A, ASTM F 1303-02, “Possibilities Inlaid Sheet”, pattern: Petit Point, gauge .080”, Color: #88067 “Painted Desert” (used only when required by local Health Department in select rooms).
- F. Protective Coat: “Revive Plus SC” Neutral Cleaner and “Vectra” Floor Finish by Johnson Wax Products.

## 2.02 ACCESSORIES

- A. Wall Base: Provide Armstrong base #V6160018 complying with ASTM F 1861, Style B.
  - 1. Style: Top set cove.
  - 2. Height: 6”.
  - 3. Thickness: 1/8”.
  - 4. Color: Black, matte finish.
- B. Resilient Edge Stripes: 1/8” thick, 1” wide, homogenous vinyl, tapered or bullnose edge, color to match flooring.
- C. Adhesives: Water-resistant stabilized type as recommended by flooring manufacturer or as indicated below.
  - 1. VCT: Armstrong adhesive #S-515, Tarkett adhesive #T-100-4, (clear thin set).
  - 2. Solid Vinyl Flooring – “Wood Collections” planks: Armstrong Adhesive #S-288. Tarkett “Stripwood”: Tarkett T-850 Acrylic Pressure Sensitive Adhesive. Note; in areas exposed to direct sunlight or occasional topical moisture and/or temperature extreme use Tarkett T-940 Polyurethane Adhesive (two part) solvent free.

3. Vinyl Sheet Flooring: Armstrong #S-599 full spread, #S-580 at cove base. Heat weld seams or seal with #S-761 seam adhesive.
  4. High Moisture: Use Armstrong Adhesive #S-240 in areas that are consistently wet.
  5. Scribing Felt: Armstrong adhesive #S-235.
- D. Leveling and Patching Compounds: Armstrong #S-183 Fast-Setting Cement-Based Underlayment, Armstrong #S-184 Fast Setting Cement-Based Patch Coat or portland cement based latex types as recommended by flooring manufacturer.
- E. Scribing Felts: Gray cellulosic synthetic fiber felt, Armstrong #S-153.

### PART III - EXECUTION

#### 3.01 GENERAL

- A. Inspect to ensure satisfactory substrate surfaces. Satisfactory means smooth and free from cracks, holes, ridges, coatings preventing adhesive bond, detrimental moisture vapor emissions and other defects impairing performance or appearance.

#### 3.02 INSTALLATION

- A. Scribe, cut and fit resilient flooring to permanent fixtures, built-in furniture, pipes, outlets, columns and walls.
- B. Tightly cement flooring to subbase without open cracks, voids, raising or puckering at joints or telegraphing.
- C. Avoid use of cut widths less than 1/2 tile at perimeters. Lay tile square to room axis.
- D. Lay tile in checkerboard pattern with grain reversed in adjacent tiles.
- E. Provide flash cove base (turned up vinyl sheet) if required by local Health Dept. at select areas of the store.
- F. Solid Vinyl Flooring – “Wood collections” planks: Stagger end joints a minimum of 6” apart. Do not install over expansion joints. Roll with 100-lb roller; install tile in same direction.
- G. VCT Protective Coat: General Contractor shall use floor cleaning company approved recommended by Johnson Diversey. Contact Johnson Diversey at 800-558-2332 and ask for the Walgreen’s New Store Coordinator to obtain an approved Building Service Coordinator. The cleaning contractor is responsible for providing equipment, cleaning chemicals, and labor to complete requested service. He will also agree to carry Workmen’s Compensation, public liability and property damage insurance in form and amount acceptable to The Walgreen Company.

Following tile installation (preferably within 24 to 48 hours) the floor should be swept, damp mopped with *Revive Plus SC* and allowed to thoroughly dry. Apply 4 medium coats of *Vectra* Floor Finish allowing sufficient dry time between coats (approximately 30-45 minutes between coats). Do not apply stripper or autoscrub the tile “mill” finish.

Johnson Diversey’s New Store Coordinator will secure cleaning bid from approved floor cleaning company and Federal Express bid to General Contractor to sign contract.

3.03 ACCESSORY INSTALLATION

- A. Scribing Felts: When installing thinner gauge material next to thicker materials, install thicker material first.
  - 1. Butt 12-inch wide piece of Scribing Felt against thicker material and adhere with specified adhesive.
  - 2. Use leveling or patching compound to featheredge of scribing felt to level of substrate.
  - 3. Allow patch to dry completely before installing flooring.
- B. Apply base in longest possible lengths. Miter or cope inside corners, make non penetrating "v-cut" on backside to form outside comers.
- C. Place edge strips tightly butted to flooring at locations where tile edges would otherwise be exposed.
- D. Install 6-inch vinyl base around all checkout stands in General Sales floor, Cosmetics and 1 -HR Photo.

3.04 CLEANING AND PROTECTION

- A. Remove excess adhesive and other surface blemishes.
- B. Protect flooring from construction damage as recommended by flooring manufacturer.

3.05 ATTIC STOCK

- A. Provide one box (45-tile minimum) of each type of tile flooring.

END OF SECTION

SECTION 09680 - CARPETING

PART I - GENERAL

1.01 DESCRIPTION

- A. The extent of carpet installation is shown on schedules.
- B. Carpeting will be furnished and installed by Walgreens. This section describes the quality of related work to be provided by the General Contractor.

1.02 QUALITY ASSURANCE

- A. Flame/Smoke Resistance Standards: Walgreens supplied materials comply with the following:
  - 1. Pill Test: For flammability, complies with ASTM D 2859 or DOC FF-1-70.
  - 2. Floor Radiant Test Panel: Critical Radiant Flux (CRF) not less than 0.45 watts/sq. cm. per ASTM E 648, Class I.
  - 3. Smoke Density Test: Complies with ASTM E 662, less than 450.

PART II - PRODUCTS

2.01 CARPET (provided by Walgreens)

- A. Manufacturer: Interface Carpet Tile with Super Cushion back.
  - 1. Pattern: Urban Grid.
  - 2. Color: Taupe #5423.
  - 3. Size: 18" x 18".

2.02 ADHESIVE

- A. Re: Source Grid-Set Green Glue 2000, pressure sensitive adhesive on all areas except stairs.

PART III - EXECUTION

3.01 INSTALLATION (by Walgreens)

3.02 PRE-INSTALLATION REQUIREMENTS (by General Contractor)

- A. Clear away debris and scrape up cementitious deposits from surfaces to receive carpet.
- B. Protect installed carpet from damage and soilage during remaining construction.
- C. Ensure that carpet will be without deterioration or damage at time of acceptance by Walgreens.

END OF SECTION



SECTION 09910 - PAINTING and VINYL WALL COVERING

PART I - GENERAL

1.01 DESCRIPTION

- A. Extent of painting and vinyl wall covering is shown on drawings and schedules.
- B. Work includes painting and finishing of interior and exterior surfaces as indicated.
- C. Painting of mechanical/electrical work is specified in divisions 15 and 16.
- D. Do not paint over code required labels or equipment name, rating, and performance plates.

1.02 QUALITY ASSURANCE

- A. Fire Hazard classification: Provide vinyl wall covering materials with the following classifications per ASTM E-84, Class A
  - 1. Flame spread not more than 10.
  - 2. Smoke Developed not more than 25.
- B. Install all work in accordance with manufacturers instructions.

1.03 WARRANTY

- A. Paint: Provide a seven year non-prorated material and labor warranty related to defects in material.
- B. Wall covering: Provide a one (1) year warranty against manufacturer's defects only.

PART II - PRODUCTS

2.01 PAINT

- A. Provide paint obtained through National accounts as produced by Benjamin Moore or Pittsburgh Paints (see Part III for schedule). Substitutes are subject to Walgreens approval only where Benjamin Moore or Pittsburgh Paints are unavailable.

Account Contracts are:

- 1. Benjamin Moore: John Lanzillotti or Connie Green (201) 802-6225  
Direct Line: 877-626-5676
- 2. Pittsburgh Paints: Marie Carr (866) 298-7245 Phone, (888) 434-3127 fax,  
or [www.ppgeaccount.com](http://www.ppgeaccount.com) (call toll free number above to register).

2.02 VINYL WALL COVERING

- A. Vinyl Wallcoverings (section A): Type II, Class A, complying with FS CCC-W-408. Obtain Vinyl Wallcovering through Walgreens National Account. Contact MDC Wallcoverings, Customer Service, 800-621-4006. Jan Prewitt, ext. 8338, Felicia Colucci, ext. 8389. Reference the following information when ordering:

MDC Wallcoverings Q # 40392915  
MDC Beta #6928  
20 oz Vinyl with Osnaburg backing.  
54-inch wide, 30 yard bolts



B Adhesive: (Heavy duty, clay based, mildew resistant): Roman Adhesives "Extra Strength Vinyl Adhesive Pro-732", Gibson-Homans "Dynamite Professional Wallcovering Adhesive #7233.

1. Perforated wall covering adhesive shall be Roman Decorating products # 550.

C. Primers (clear): Gibson-Homans "Dynamite #7221 acrylic primer, Roman Adhesives "Vinyl Prep", William Zinsser Co. "SHIELDZ@CLEAR".

1. Perforated wall covering primer shall be Roman Decorating product #990.

### 2.03 MISCELLANEOUS PRODUCTS

A. Corner Guards: 3-1/2" x 3-1/2" x 48" high, prefabricated 16 ga. type 430 stainless steel with rounded comers manufactured by Tubular Specialties or equal. Adhesive #3548 x by Tubular Specialties.

B. Anti-Graffiti coating: Provide "Graffiti Solution System@" manufactured by American Polymer Corp 800-676-5963. System components include GSS Barrier, GSS-10 Anti Graffiti Protectant and GSS Erasol@.

## PART III - EXECUTION

### 3.01 PREPARATION

A. Do not paint over dirt, rust, scale, grease, moisture or other conditions detrimental to formation of a durable paint film.

B. Remove hardware, accessories, plates, light fixtures and other items not to be painted or wall covered. Reinstall removed items upon completion of painting and wall covering.

C. Prime and seal surfaces to receive wall covering in accordance with manufacturer recommendations.

### 3.02 PAINT APPLICATION

A. Apply additional coats when undercoats, stains etc, show through until color and appearance are uniform.

B. Paint surfaces behind movable equipment.

C. Paint interior surfaces of ducts where visible, with flat, non-specular black paint.

D. Paint grilles and registers at ceilings and walls to match adjacent surfaces.

E. Paint exterior doors on tops, bottoms, sides same as exterior faces.

F. Completely cover surfaces to provide an opaque, smooth, uniform finish and color, free of spotting, holidays, laps, brush marks, runs, sags or other imperfections.

G. Completed Work: Refinish or repaint work not in compliance with specified requirements.

H. Paint all ferrous metal.

1. Paint exposed exterior natural gas piping.

2. Paint bollards to match highway yellow color.

3.03 VINYL WALL COVERING INSTALLATION

- A. Install seams plumb, and 6" minimum from corners. Horizontal seams are prohibited. Remove air bubbles, wrinkles, blisters and other defects.
- B. Trim selvages to assure color uniformity and pattern match.
- C. Remove excess adhesive from seams.

3.04 CLEANING AND PROTECTION

- A. Upon completion, clean paint spatters from window glass, equipment and other paint spattered surfaces.
- B. Protect work of others against damage from painting and wall covering work. Repair, repaint or replace damaged surfaces as acceptable to Walgreens.

3.05 PAINTING SCHEDULE

- A. Sales Areas (gypsum wallboard) including Glass Tower:
  - Prime Coat: Moor Craft Super Spec Latex Enamel Under Coater/Primer Sealer (#253)  
Pittsburgh Paints Speedhide Latex Primer Sealer (#6-2).
  - Finish: Two coats, Moor Craft Super Spec Vinyl Latex Flat (#275). Color: Soffit face and soffit undersides; "White Dove" Premixed color. Ceilings and Glass Tower interior; "Decorators White" Premixed color.  
Two coats Pittsburgh Paints Speedhide Interior Flat Latex (6-70 Series). Soffit face and soffit undersides tinted to Benjamin Moore's "White Dove".  
Ceilings and Glass Tower interior tinted to Benjamin Moore's "Decorator White".
- B. Stockroom, Passages, Rubbish Room and other rooms not otherwise noted (gypsum wallboard).
  - Prime Coat: Moor Craft Super Spec Latex Enamel Under Coater/Primer Sealer (#253).  
Pittsburgh Paints Speedhide Interior Latex Primer Sealer (#6-2).
  - Finish: One coat, Moor Craft Super Spec Latex Semi-Gloss Enamel (#276), color: "Bone White" Premixed Color.  
One coat Pittsburgh Paints Speedhide Interior Semi-Gloss Latex Enamel (6-500 Series), tinted to Benjamin Moore's "Bone White".
- C. Pharmacy Area (gypsum wallboard):
  - Prime Coat: Moor Craft Super Spec Latex Enamel Under Coater/Primer Sealer (#253).  
Pittsburgh Paints Speedhide Interior Latex Primer Sealer (#6-2).
  - Finish: Two coats, Regal AquaPearl (310), vinyl-acrylic latex, pearl sheen finish, color: HC-173 "Edgecomb Gray".  
Two coats Pittsburgh Paints Speedhide Interior Semi-Gloss Latex Enamel tinted to Benjamin Moore's HC- 173 "Edgecomb Gray".
- D. Interior Wood Doors, Door Frames:

Prime Coat: Moor Craft Super Spec Alkyd Enamel Undercoater & Primer Sealer (#245).  
Pittsburgh Paints Speedhide Interior Quick Drying Enamel Undercoater (#6-6).

Finish Coat: Two coats Regal Satin Impervo Enamel (#235), color; 2112-30 "Stone Brown".  
Two coats Pittsburgh paints Interior Industrial Enamel Lo-Sheen Alkyd (7-827), tinted to Benjamin Moore's 2112-30 "Stone Brown".

In areas where VOC regulations prohibit use of the above, use the following system:

Prime Coat: MoorCraft Latex Enamel Under Coater/Primer Sealer (#253)  
Pittsburgh Paints Speedhide Interior Acrylic Enamel Undercoater (6-855).

Finish: Two coats, MoorCraft Latex Semi-Gloss Enamel (#276), color; #2112 30 "Stone Brown".  
Two coats Waterborne Satin Impervo Enamel (#314), color # 2112-30 "Stone Brown".  
Two coats Pittsburgh Paint Speedhile Interior Semi-Gloss Latex Enamel (6-500 Series) tinted to Benjamin Moore's 2112-30 "Stone Brown".

E. Exterior Metal Doors and Frames:

Prime Coat: IronClad Latex Low Lustre Metal & Wood Enamel (#363).  
Pittsburgh Paints Industrial Rust Inhibitive Primer (7-858 Series).

Finish Coat: Two coats, MoorCraft Latex House & Trim Paint (#170), color # HC-77 "Alexandria Beige".  
Two coats Pittsburgh Paints Speedhide Exterior Semi-Gloss Latex (6-900 Series) tinted to B-M's HC-77 "Alexandria Beige".

F. Fire Retardant Wood (where required by code):

Prime Coat: Moor Craft Latex Enamel Under Coater/Primer Sealer (#253).  
Pittsburgh Paints Speedhide Interior Acrylic Enamel Undercoater (6-855).

Finish: Two coats, 220 Latex Fire Retardant coatingt (M59).  
Two coats Pittsburgh Paints Speedhide Interior Fire Retardant Flat Latex (#42-7).

G. Concrete Block, Concrete, Masonry (Interior):

Prime Coat: Moor Craft Latex Enamel Under Coater/Primer Sealer (#253).  
Pittsburgh Paints Speedhide Acrylic Alkali Resistant Primer (6-603, masonry, (6-7 concrete block).

Finish: Two Coats, Moor Craft Vinyl Latex Flat (#275), color "Bone White" Premixed Color.  
Two coats Pittsburgh Paints Speedhide Interior Flat Latex (6-70 Series) tinted to Benjamin Moore's "Bone White".

H. Ferrous Metal:

Interior:

Prime Coat: Iron Clad Latex Low Lustre Metal & Wood Enamel (#363).  
Pittsburgh Paints Industrial Rust Inhibitive Primer (7-858 Series)

Finish: Two Coats Moor Craft Latex Semi-Gloss Enamel (#276), Color:  
Columns "White Dove" Premixed Color.  
Two coats Pittsburgh Paints Speedhide Interior Semi Gloss Latex  
(6-500 Series), tinted to Benjamin Moore's "White Dove".

Exterior:

Prime Coat: Self priming on properly prepared surfaces.

Finish: Two coats D.T.M. acrylic semi-gloss (M29).  
Two coats Pittsburgh Paints Pitt-Tech One Pack Satin Industrial  
Enamel (90-474 Series).

I. Aluminum (awning underside):Exterior:

Prime Coat: Benjamin Moore IronClad Latex Low Lustre Metal & Wood Enamel  
(#363).  
Pittsburg Paints Pitt-Tech One Pack High  
Performance Acrylic enamel (90-712).

Finish: 2 coats Moorcraft Latex House & Trim Paint (170) Color: B-M's  
HC-81 "Manchester Tan."  
2 coats Pittsburgh Paints Pitt-Tech One Pack High  
Performance Acrylic DTM Enamel (90-400 Series).

END OF SECTION



SECTION 09985 - SPECIAL WALL SURFACES

PART I - GENERAL

1.01 DESCRIPTION

- A. The extent of Fiberglass Reinforced Panels (FRP), Corner Guards, and Column Covers is shown on schedules and drawings.

1.02 QUALITY ASSURANCE

- A. Fire Performance: Products comply with the following when tested according to ASTM E-84:
  - 1. Flame Spread: Marlite Class C "Naturetones Collection", less than 200.  
Marlite Class A "FRP", less than 25.
  - 2. Smoke Developed: Marlite Class C "Naturetones Collection", less than 50.  
  
Marlite Class A "FRP", less than 450.

PART II - PRODUCTS

2.01 FIBERGLASS REINFORCED PANELS:

- A. Marlite Brand, "FRP #P-145", Class A, color; silver, pebble finish surface (toilet rooms). For Walgreens preferred pricing, contact 330-343-6621 (Phone) 330-343-4668 (Fax).
  - 1. Alternate Manufacturer: Kemlite, Class A, Fire-X Glasboard", color; "BES-366 Silver".
- B. Marlite Brand, Class C, Plank Product Line, Naturetones Collection, Earth Hues Series, color; Coral Sand #PLK 781 -G88 (employee room).
- C. Accessories: Provide Marlite Brand, pre-finished aluminum inside corners, outside corners, edging, division strips and plank clips as required for project conditions. Color to match panels. Provide aluminum components for Plank series and PVC for P-145 series panels.
- D. Adhesive: Marlite Brand C-375 or C-551 Adhesive.
- E. Sealant: Marlite Brand MS-250 clear silicone.

2.02 COLUMN COVERS

- A. Provide 22 or 24 gauge stainless steel, type 304 or 430 finish.
- B. Acceptable Manufacturers: Retail Specialty Incorporated 14026 Simone Dr., Shelby Twp., MI 48315, 810-566-7716, Tubular Specialties, Inc., 13011 South Spring St., Los Angeles, CA 90061, 800-225-5876, or Wilkinson Company, Inc., 1530 Commerce Drive, Stow, Ohio 44224-1781, 800-686-6726.

2.03 CORNER GUARDS

- A. Provide 16 or 18 gauge stainless steel, type 304 or 430, #4 finish.
- B. Acceptable Manufacturers: Retail Specialty Incorporated 14026 Simone Dr., Shelby Twp., MI 48315, 586-566-7716, Tubular Specialties, Inc., 13011 South Spring St., Los Angeles, CA 90061, 800-225-5876 or Wilkinson Company, Inc., 1530 Commerce Drive, Stow Ohio 44224-1781, 800-686-6726.

PART III - EXECUTION

3.01 PANEL SYSTEMS

- A. Apply panels to gypsum board substrate, above base, vertically oriented with seams plumb and pattern aligned with adjoining panels.
- B. Apply panel moldings to all panel edges.
- C. Install panels allowing for expansion/contraction as required by panel manufacturer,
- D. Apply sealant to all moldings, channels and joints between the system and different materials to assure watertight installation.

3.02 COLUMN COVERS

- A. Install in one piece on round columns (two pieces acceptable at square columns), from floor to 4' - 0" A.F.F. with no sharp or jagged edges.
- B. Column covers shall be secure and tightly fit column profile. Install with concealed attachment. Install neatly tooled sealant at top and bottom edges of column covers.
- C. Seam shall be formed with tightly fitting continuous "drive cleat locks", "S-Pockets", or "riveted lap seams" (with concealed hemmed overlap). Seam shall face toward nearest merchandise gondola,

END OF SECTION



SECTION 10190 - TOILET PARTITIONS AND ACCESSORIES

PART I - GENERAL

1.01 DESCRIPTION

- A. The extent of toilet partitions and accessories is shown on drawings.
- B. Provide floor mounted, headrail braced toilets partitions and wall hung screens.
- C. Types of toilet accessories include:
  - Paper towel dispensers
  - Waste receptacles
  - Feminine napkin disposal
  - Toilet tissue dispenser (furnished and installed by Walgreens)
  - Grab bars
  - Mirrors
  - Diaper Changing Station

1.02 QUALITY ASSURANCE

- A. Coordination: Furnish inserts and blocking to support toilet partitions and accessories.
- B. All toilet accessories shall be from the same manufacturer except Walgreens furnished.
- C. Hardware and door openings shall be fabricated to comply with requirements of the Americans with Disabilities Act, and ANSI A 117-1. (Latest Edition).

PART II - PRODUCTS

2.01 TOILET PARTITIONS AND SCREENS

- A. Manufacturer: Toilet Partition: headrail braced with baked enamel finish.
- B. Acceptable Manufacturers:
  - Accurate Partitions Corp., floor Anchored/Overhead Braced series, power coated steel color #917 Adobe.
  - American Sanitary Partition Corp., headrail braced "Full Flush Type", baked enamel color; #34 San Tan..
  - AMPCO Products, Inc. Overhead braced toilet compartment, baked enamel color #958-58 Beige.
  - Flush-Metal Partition Corp., headrail braced "Flushite" series, color #35 Beige.
  - General Partitions Mfg. Corp., headrail braced "Series 40, color #SN-336 Sand.
  - Global Steel products Corp., "Floor Anchored/Overhead Braced" series, color #2115 Khaki.
  - Hadrian Manufacturing, Inc., headrail braced, floor mounted system, color #585 Sahara.
  - Knickerbocker Partition Corp., headrail braced "Metropolitan" series, color; Sand #5123.
- C. Urinal Screens: By same manufacturer and in same color as toilet partitions. Size; 18" x 42".
- D. Hardware: Manufacturers standard heavy duty, chrome plated; self-closing hinges, lever handle latch with emergency access, door pull, doorkeeper with bumpers, coat hook with bumper and stainless steel pilaster shoes.
- E. Headrail: Manufacturers standard anti-grip style.

2.02 TOILET PARTITION/SCREEN MATERIALS

- A. Sheets for baked enamel finish: ; ASTM A 591, Class C, galvanized-bonderized.
- Pilasters: 20 gauge  
Panels and screens: 20 gauge  
Doors: 22 gauge
- B. Partition Core Materials: 1" finished thickness with sound-deadening honeycomb core.
- Pilasters shall be 1-1/4" thick.
- C. Pressure laminate seamless face sheets to core material and steel edges with continuous interlocking strip. Weld edges and corners and grind smooth.

2.03 TOILET ACCESSORIES

- A. Manufacturer: Bobrick unless noted otherwise.
- Recessed roll paper towel dispenser/waste receptacle: Bradley #2277.  
Feminine napkin disposal: #B-270  
Toilet tissue dispenser: North American Paper #WA56T, double jumbo (by Walgreens).  
Grab Bars: (1) B-6806 x 36 and (1) B-6806 x 42.  
Mirror: B-165-1836.  
Employee Room surface mounted roll paper towel dispenser: B-2860
- B. Acceptable Alternate Manufacturers: Bradley Corporation.

2.04 TOILET ACCESSORY MATERIALS

- A. Stainless Steel: AISI Type 302/304, with polished no. 4 finish, 22 gauge minimum.
- B. Mirror Glass: FS DD-G-451, Type I, Class 1, Quality q2, 1/4" thick with silver coating, copper protective coating and non-metallic paint coating.

2.05 DIAPER CHANGING STATION

- A. Baby Changing Station: Provide Koala Kare Products (or equal) wall mounted horizontal design, molded FDA approved HDPE, 300 lb. capacity, molded braille instructions;
1. Hinges: reinforced, full length steel on steel.
  2. Mounting Supports: multiple 11 ga. steel.
  3. Operation: pneumatic gas spring mechanism.
  4. Color: beige.
  5. Provide and location identifying signage as required by local ordinances.
  6. Provide "Microban Technology" anti-microbial product protection

3.01 INSTALLATION

- A. Install toilet partitions and accessories plumb, level and securely anchored. Mount accessories using concealed vandal proof fasteners, at heights as shown on drawings.

3.02 ADJUST AND CLEAN

- A. Adjust hardware and accessories for proper operation.
- B. Toilet partition doors to swing open approx. 30 degrees when unlatched.
- C. Clean toilet partition surfaces and accessories. Replace all defective or damaged items.

END OF SECTION



SECTION 10522 - FIRE PROTECTION SPECIALTIES

PART I - GENERAL

1.01 DESCRIPTION

- A. Wall mounted fire extinguishers and accessories.
- B. Recessed Key Lock Boxes (provide only when required by local codes/officials).

1.02 QUALITY ASSURANCE

- A. Comply with applicable requirements of NFPA 10 and ADA Accessibility Guidelines.
- B. Provide UL listed and FM approved fire extinguishers which bear the UL listing mark for the type, rating and class of fire extinguisher indicated.
- C. Obtain products from one manufacturer.

PART II - PRODUCTS

2.01 FIRE EXTINGUISHERS

- A. Multi-Purpose Dry Chemical Type: UL rated 4A:60B:C. or as required by local authority.
- B. Finish: Manufactures standard factory applied RED.
- C. Provide not less than six (6) fire extinguishers (more if required by local authorities).
- D. Manufacturers: JL Industries Inc.  
Larsen's Manufacturing Co.  
Potter-Roemer

2.02 ACCESSORIES

- A. Mounting Brackets: manufacturers standard for the fire extinguisher furnished.
- B. Signs: provide signs identifying the locations of fire extinguishers as required by local authorities.

2.03 KEY KNOX BOX (Provide only when required by local codes/officials)

- A. Recessed Knox Box #3200-R, with UL listed alarm tamper switch, dark bronze finish.

PART III - EXECUTION

3.01 INSPECTION

- A. Verify servicing, charging and tagging of all fire extinguishers.

3.02 INSTALLATION

- A. Install fire extinguishers and identifying signs in compliance with local authorities and ADA guidelines.
- B. Provide blocking and anchoring devised capable of supporting specified fire extinguishers.

- C. Recessed Knox Box shall be installed 6'-0" above top of foundation, near main entry as directed by local fire officials.

END OF SECTION

## SECTION 12484 - FLOOR MATS AND FRAMES

### PART I - GENERAL

#### 1.01 DESCRIPTION

- A. The extent of floor mat installation (surface and recessed) is shown on Walgreens Fixture Plan.
- B. Floor mats will be furnished and installed by Walgreens. This section describes the quality of related work to be provided by the General Contractor.
- C. The General Contractor shall be responsible for installing the vestibule recess and floor drain in stores designated to receive an entry vestibule.

#### 1.02 QUALITY ASSURANCE

- A. Flame/Smoke Resistance Standards: Walgreens supplied materials comply with the following:
  - 1. Pill Test (entrance grid): For flammability, complies with ASTM D 2859, < 1 inch.
- B. Surfaces designated to receive floor mats shall be constructed in accordance with the manufacturer's instructions.

### PART II - PRODUCTS

#### 2.01 FLOOR MAT (provided by Walgreens)

- A. Manufacturer: Space-Links®, Inc.
- B. Entrance Grid: Recessed or surface mounted, with aluminum frame.
  - 1. Style: Ultra-Links Entryway Flooring System™.
  - 2. Type: Entrance grid.
  - 3. Size: 4-ft. x 4-ft.
  - 4. Thickness: 15/32 inch
  - 5. Color: Gray
- C. Carpet Tiles:
  - 1. Style: Dreadnought.
  - 2. Color: Anthracite.
  - 3. Adhesive: TacFast backing.
  - 4. Edging: Black rubber.

### PART III - EXECUTION

#### 3.01 INSTALLATION (by Walgreens)



3.02 PRE-INSTALLATION REQUIREMENTS (by General Contractor)

- A. At recessed installations, install floor drain and prepare recess in accordance with Walgreens Criteria details. Slope recess to drain located at center of recessed area.
- B. Clear away debris and scrape up cementitious; deposits from surfaces to receive floor mats.
- C. Protect installed floor mats from damage during remaining construction.
- D. Ensure that floor mat will be undamaged at time of acceptance by Walgreens.
- E. Surface mounted floor mats shall be installed on top of resilient flooring.

END OF SECTION

SECTION 15050 - BASIC MECHANICAL MATERIALS AND METHODS

PART I - GENERAL

1.01 MECHANICAL GENERAL REQUIREMENTS

- A. This section applies to all mechanical work. The contractors involved shall check all sections of the specifications in addition to the particular section covering their specific trade. Each distinct section of the specifications aimed for one trade may have detailed information with regards to other trades, therefore, it is imperative that all sections be reviewed to get a complete picture of all other trades' functions and work required.
- B. The Walgreen Co. drawings, which constitute an integral part of this contract, shall serve as the working plans. They indicate the general layout of the complete mechanical systems.
  - 1. "Field verification, of scaled dimensions on plans, is directed since actual locations, distances, and levels will be governed by actual field conditions." All measurements shall be verified at the site.
  - 2. The mechanical and electrical contractors shall check architectural, structural, plumbing, heating, ventilation, air conditioning, and electrical plans to avert possible installation conflicts. Should drastic changes from original plans be necessary to resolve such conflict, the contractor shall notify the architect and Walgreen Co. - Facilities Planning and Design Department, and secure written approval and agreement on necessary adjustment before the installation is started.
  - 3. Discrepancies shown between plans, or between plans and actual field conditions, or between plans and specifications shall promptly be brought to the attention of Walgreen Co. for a decision.
  - 4. Drawings and specifications are intended to cover the completed installation of systems to function as described. The omission of the expressed reference to any item of labor and material necessary to comply to practice codes, ordinances, etc. shall not relieve the contractor from providing such additional labor and material.
  - 5. The contract drawings serve as working drawings for the general layout of the various services. However, layout of equipment accessories, specialties, piping systems, and conduit runs are diagrammatic unless specifically dimensioned and do not necessarily indicate every required valve, fitting, transition, turning vane, junction box, pull box, conduit size, etc. It will be the contractor's responsibility to provide all systems complete and operable. The contractor to make field verification of all services, systems, etc. as part of the total work required and the cost to be included in this base bid.
- C. Accessibility: Do not locate traps, controls, unions, pull boxes, etc. in any system at a location that will be inaccessible after construction is completed. Maintain accessibility for all components in mechanical, electrical, and plumbing systems.
- D. Cutting and Patching: All cutting required shall be done by the contractor whose work is involved, without extra cost to Walgreen Co. All patching and restoration including the furnishing and installation of access panels in ceiling, walls, etc. within the building lines shall be done by the respective, responsible contractor. No cutting of concrete, or wood shall be done without prior approval and explicit directions of the architect and Walgreen Co. All duct openings in walls, floors, ceiling, and roof shall be cut and patched by the respective, responsible contractor.

- E. Relocation of Existing Ducts, Conduits, Pipes, and Utilities: The contractor, under whose jurisdiction the work may fall, shall provide labor, material, and tools required to cut, repair, protect, cap, or relocate existing pipes, conduits, or utilities interfering with or uncovered during work, per regulations of the authorities having jurisdiction.
- F. Excavation and Backfill: Excavation and removal of material, shoring, dewatering, and backfilling required for the proper laying of all pipes and conduits inside the building and premises, and outside as may be necessary, shall be done by the contractor whose work is involved, without extra cost to Walgreen Co.
- G. Vibration Eliminators: Rotating or reciprocating equipment, ducts, piping, etc. shall be isolated from the structure by means of approved vibration absorbing units as provided or recommended by the equipment manufacturer or architect.
- H. Sleeves: Each contractor shall furnish required sleeves. Sleeves shall be extended 2 inches above the floor, wall, etc. unless noted otherwise, and shall be Schedule 40 galvanized steel pipe and of the required size and location. The contractor responsible for running pipes in the sleeve shall caulk the space between pipe and sleeve with oakum and seal with mastic cement or other approved material.
- I. Electric Motors: See Section 16050, Basic Electrical Materials and Methods.
- J. Damage to Other Work: Each contractor shall be held rigidly responsible for all damages to their own or any other trades' work resulting from the execution of the involved contractor's work.
- K. Concrete Foundation: Concrete foundation for all mechanical equipment shall be provided by the general contractor, but the respective mechanical contractor shall furnish foundation bolts and all essential information and shall check the work prior to the pouring of concrete insuring acceptable results. The foundation shall be as indicated or as recommended by the equipment manufacturer.
- L. Large Equipment: All large equipment which is to be installed in the building that may be too large to enter through stairways, doorways, or shaft, shall be brought on the job and placed in the proper space before the enclosing structure is completed, unless arrangements are made with other contractors to permit access at a later date, without additional cost to Walgreen Co.
- M. Rough-in for Connection to Equipment: It shall be the responsibility of each contractor to study the architectural, structural, electrical, and mechanical drawings, conferring with the various trades involved and checking with the supplier of equipment in order to properly rough-in for all equipment.
- N. Material and Equipment: All material and equipment shall be new and of the best quality used for the purpose in good commercial practice, and shall be the standard product of reputable manufacturers. The material and equipment must meet approval of state and local codes in the area it is being used.
- O. Construction Superintendent: The term "construction superintendent" shall herein be referred to synonymously as Walgreen Co.'s construction superintendent.
- P. Performance of Work: All work outlined in the various mechanical and electrical sections shall be done by the contractor under whose jurisdiction the work may fall. See drawings and specifications.
- Q. Roof decks shall not be used to support piping, conduit, equipment, devices, etc. Bar joist panel points and beams shall be used to support loads unless otherwise directed by the structural Engineer.
- R. Electrical Wiring: See electrical specifications, Division 16.
- S. Testing: All testing results shall be in the form of written reports.

1.02 SUPPLEMENTARY CONDITIONS

- A. Refer to other requirements of mechanical and electrical work in Division 1 without exception.
- B. Permits, Inspections, and Tests: All work is to be executed in compliance with, and each contractor is to observe and abide by, all applicable laws, regulations, ordinances, and rules of the national, state, county, and local governing agencies, or any other duly constituted public authority. Each contractor will, at all times, maintain proper facilities and provide safe access for inspection to all parts of the work and to the shops wherein the work is in preparation. No work will be enclosed or covered until approved by the architect, and should any work be enclosed or covered before all necessary inspections are completed, same will be opened for examination at the contractor's expense. All fees, licenses, tests costs, etc. are contractor's responsibility.
- C. Rules, Regulations, and Codes:
  - 1. All material and equipment shall conform to the standards, where available, of the National Electrical Manufacturers Association (N.E.M.A.), National Fire Protection Association (N.F.P.A.), National Electrical Code (N.E.C.), Underwriters Laboratories (U.L.), American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), Sheet Metal and Air Conditioning Contractor's National Association (SMACNA), and American Water Works Association (AWWA).
  - 2. All work shall conform to all applicable federal, state, and local codes and utility companies' regulations.
- D. Workmanship and Installation: Walgreen Co. shall decide whether or not the finished work is satisfactory in their judgment. If any material and/or equipment has not been properly installed or finished, this contractor is obligated to replace the material and/or equipment wherever required and to reinstall the material and equipment in a manner entirely satisfactory at this contractor's expense (without additional cost to Walgreen Co.).
- E. Guarantee: Each contractor shall guarantee each complete system for a period of one (1) year from the date of acceptance of the work by Walgreen Co. to be free of defects of material and workmanship and that any faulty material or workmanship will be repaired or replaced without additional cost to Walgreen Co.
- F. Cooperation: There shall be complete cooperation with all trades in the matter of planning and execution of the work. Every reasonable effort shall be made to prevent conflict as to space requirements, dimensions, locations, leaving of opening, or other matters to obstruct or delay the work.

1.03 SUBSTITUTIONS

- A. The name of an article or its make, as given in the specifications and/or drawings, is used to establish a standard for the guidance of the contractor. He may propose substitution of other material or equipment (unless specifically stated no substitution accepted).
- B. Should the contractor propose to furnish materials and equipment other than those specified, as permitted by the "acceptable alternate" clause, he shall submit a written request for any or all substitutions to Walgreen Co. Such a request shall be accompanied with complete descriptive and technical data for all items (manufacturer, brand name, catalog number, descriptive literature, and capacity tables), stating in each case what addition to or deduction from the main bid is to be made if such alternates are accepted.

- C. Where such substitutions alter the design or space requirements indicated on the plans, the contractor shall include all items of cost for the revised design and construction including cost of all allied trades involved.

Mail to: Walgreen Co.  
Facilities Planning Design & Engineering  
MS 1620  
106 Wilmot Road  
Deerfield, IL 60015-5105

- D. Acceptance or rejection of the proposed substitutions shall be subject to approval of Walgreen Co., and if specific approval in writing is not received, it is understood that the requirements as outlined in the Walgreen Co. plans are to be met.

#### 1.04 INSTALLATION

- A. All equipment and materials shall be installed according to manufacturer's instructions unless otherwise specifically directed by the Trade Contract Documents. All piping, valves, connections, and other like items recommended by the manufacturer or required for proper operation shall be provided without additional cost to Walgreens.

END OF SECTION

## SECTION 15250 - MECHANICAL INSULATION

### PART I - GENERAL

#### 1.01 DESCRIPTION

- A. Section 01010 Summary of Work and Section 15050, Basic Mechanical Materials and Methods, shall be considered a part of these specifications.
- B. Piping insulation, jackets, and accessories.
- C. Ductwork insulation, jackets, and accessories.

### PART II - PRODUCTS

#### 2.01 PIPE INSULATION

- A. Domestic water, interior storm lines, interior condensate drain piping from HVAC roof-top units and waste water pump discharge.
  - 1. All piping (above finished floor) shall be covered with Armacell AP/Armaflex pipe insulation insulation ½” thick in accordance with ASTM C-534, grade I, type I for piping insulation, jackets, and accessories. Tubular materials and grade I, type II for sheet material.
  - 2. All joints shall be sealed with approved manufacturers adhesive.
  - 3. All lines running outdoors shall have insulation protected from weather by two (2) coats of manufacturers approved finish.
  - 4. Acceptable Alternate Manufacturer: Koolphen K CFC Free Phenolic foam, or Aerocel (by Aeroflex International Comapany) closed cell Elastomeric thermal insulation.
  - 5. Fiberglass pipe insulation, one inch thick with built-in vapor barrier may be used in lieu of the Armacell product specified on interior storm lines, interior domestic water lines, interior condensate drain piping from HVAC units and interior water waste pump discharge lines. Acceptable manufacturers are Armstrong, Cetainteed, Johns-Manville, Knauf, and Ownes-Corning.”
- B. Refrigerant Suction Lines and Cooler/Freezer Condensate Drains:
  - 1. Similar to “A” except 1” thick inside building and 2” thick on outside of building with manufacturers weather-resistant protective finish. (2” thickness shall be achieved by 2 layers of 1” insulation applied per manufacturers recommendations).
  - 2. Inside the walk-in freezer, insulate the entire condensate drain line around the wrap around type drain line heater. Inside the walk-in cooler it is not necessary to insulate the condensate drain line and trap. Outside the walk-in, insulate all of the condensate drain line.

## 2.02 DUCTWORK INSULATION

- A. All ductwork shall be insulated, including but not limited to supply, return, exhaust, relief transfer duct, etc.
- B. Ductwork Below Roof: The insulation shall consist of one layer 2" thick of Owens-Corning Type 75, .75 lbs./cu. Ft. density, with an installed R-value of 5.6 and vapor jacket. Acceptable Alternate Manufacturer: Johns-Manville. "Armstrong, Certainteed and Knauf."
- C. Ductwork Above Roof Line: Similar to "B" except 3" thick insulation with an installed R-value of 8.3 and waterproof jacket.
- D. Internally lined ductwork is "not acceptable" in any ductwork including main drops from the roof-top units.

## 2.03 INSULATION RATINGS

- A. Flame spread shall be 25 or less.
- B. Smoke developed shall be 50 or less.

## PART III - EXECUTION

### 3.01 INSTALLATION

- A. Install materials in accordance with the manufacturer's instructions.

END OF SECTION

## SECTION 15300 - FIRE SUPPRESSION

### PART I - GENERAL

#### 1.01 DESCRIPTION

- A. Division 1, General Requirements, and Section 15050, Basic Mechanical Materials and Methods, shall be considered a part of these specifications.
- B. The fire protection system work includes, but is not limited to, the following:
  - 1. Furnish and install complete, operable automatic fire protection system, with all related items. System shall be designed, fabricated and installed by a firm regularly engaged in this type of work and employing those skilled in the work involved.
  - 2. Systems shall be in accordance with the applicable standards of the National Fire Protection Association (N.F.P.A.) and requirements of any authorities having jurisdiction.
  - 3. Seismic bracing of all equipment and piping as per state and local codes.

#### 1.02 SUBMITTALS

- A. Submit for Walgreen approval, the Fire Protection Plan FP1.1 prior to submitting any fire protection permit documents required by the authorities having jurisdiction. Submit to Walgreen Co. and the Architect/Engineer of Record, complete shop drawings of the entire Fire Protection System before starting work.

### PART II - PRODUCTS

#### 2.01 GENERAL

- A. All materials and devices essential to the successful operation of the Fire Protection System shall be UL Listed with the exception of steel pipe. Steel pipe shall conform to NFPA 13 Table 6.3.1.1. Backflow preventers shall be either UL Listed or classified.

#### 2.02 FIRE DEPARTMENT CONNECTION

- A. Provide flush brass-bodied 2-way connection with hose threads, drain, brass inlet caps with chains as approved by local fire jurisdiction.

#### 2.03 AUTOMATIC SPRINKLERS

- A. Assemblies shall be as specified on Walgreen criteria drawing "Fire Protection Plan" FP1.1 or Walgreen Co. written approved equals.
- B. The manufacturer shall warrant assemblies for ten (10) years against defects in material and workmanship. Temperature rating of sprinkler shall be based on the maximum ambient temperature of the environment in which it is installed.
- C. Listed corrosion-resistant sprinklers shall be installed in locations where chemicals, moisture or other corrosive vapors sufficient to cause corrosion of such devices exist.

#### 2.04 ACCESSORIES



- A. Provide alarm bells, valves, drains, flow switches, and all other items required for a complete system.
- B. Provide permanently marked, waterproof metal or rigid plastic identification signs or placards at all valves secured with corrosion-resistant chain.

### PART III - EXECUTION

#### 3.01 INSTALLATION

- A. General: Installation of the private service main shall conform to local requirements and shall be in accordance with requirements of Section 02190, Sitework/Excavation and Section 15400, Plumbing of the specifications.
- B. Protection: Underground piping cover shall be measured from top of pipe to finished grade with due consideration given to future or final grade and nature of soil. Top of pipe shall be no less than one foot below local frost line. Minimum cover shall be 3 feet below pavements. No piping shall run under buildings except fire service main shall be permitted to enter the building adjacent to the foundation. Back filling shall be tamped in layers to prevent lateral movement or settlement and shall contain no ashes, cinders, refuse, organic, corrosive or frozen materials. In trenches cut through rock, tamped granular backfill shall be provided a minimum of 6 inches under and around piping with a minimum of 2 feet of granular cover.
- C. Contamination: All system components shall be free of rust and other contaminants and clean inside and out.
- D. System Entrance: Installation of the riser and trim for all its components shall be as compact as possible to conserve floor space.
- E. Fire Department Coordination: No exterior component of the Fire Protection System shall be located within any fenced or walled area and shall be readily visible from the parking lot. Coordinate the locations of the fire department connection and exterior alarm device with the local fire jurisdiction and Architect of Record.
- F. Piping: Design layout shall allow for suitable venting and drainage. Installation shall be coordinated with all other items in the construction and shall not obstruct lights, air outlets, dampers, valves, access doors and other items requiring access. Piping in areas having ceilings shall be concealed. Piping may be exposed elsewhere but kept high as possible with all consideration for the Walgreen Co. plan layout. Piping passing through walls, floors and other building components must be sleeved. Piping penetrating finished spaces shall be fitted with chrome split-ring escutcheons. Sleeves shall be patched and sealed as required to maintain fire ratings where applicable. Install flow switches, tamper switches, alarms and any other required electrical components within the piping system. Coordinate with Architect of Record for locations of inspector's test and main drain discharge points to ensure visibility, access and hard surface to receive and direct water to pavement for drainage.
- G. Cutting: All openings for piping should be anticipated and indicated on the approved shop drawings. Any additional cutting or openings must have the written approval of the Architect of Record.

- H. Access: Install hinged access panels for access to valves or similar operable components concealed in finished areas. Label panel door with identity of item concealed.
- I. Sprinklers: Installation and location of sprinklers shall be coordinated with all other items in the construction and shall not obstruct lights, air outlets, access doors and other items requiring access. Sprinklers at finished ceilings shall form a symmetrical pattern carefully integrated into the ceiling layout as shown on Walgreen approved drawings. Provide proper protection of automatic sprinklers. Sprinklers that have had paint applied to them, by other than the sprinkler manufacturer, or otherwise damaged shall be replaced with new listed sprinklers of the same orifice size, thermal response and water distribution. Furnish and install, in close proximity to system riser, an emergency cabinet containing a minimum of two sprinklers of all types and ratings used in the system and one head wrench for each head type. One spare Tyco Model DS-C dry pendent sprinkler and DS-B sprinkler boot within manufacturer's shipping containers shall be attached to the sprinkler riser by nylon zip ties.

### 3.02 TESTING, INSPECTION AND ACCEPTANCE

- A. Flushing: Underground, or other water supply piping, shall be completely flushed before connection is made to downstream fire protection system piping. The flushing operation shall be continued for a sufficient time to ensure thorough cleaning. Minimum rate of flow shall be not less than the hydraulically calculated water demand rate of the system, including any hose requirements, the flow necessary to provide a velocity of 10 feet per second or the maximum flow rate available to the system under fire conditions.
- B. System test: Purge system of air prior to filling with supply water. After completion of the installation, the entire system shall be tested and inspected to meet the approval of the authorities having jurisdiction. A contractor's material and test certificate should be completed in accordance with NFPA 13.
- C. Fire Department Connection: Inspect for visibility and accessibility. Firmly secure caps to resist casual vandalism. Verify that swivels have freedom of movement, hose threads are clean and in good condition and that the check valve in the connection piping is not obstructed or leaking.
- D. System drainage: Verify exterior discharge points of main drain and inspector's test station for visibility, access and hard surface for conveying discharge water to pavement for drainage.
- E. System documentation: Complete hydraulic design placard information and affix to system riser. Complete all component identification signage. Collect system documentation, including but not limited to, approved shop drawings, hydraulic calculations, material and test certificates, acceptance letters and insert all documents in holder.

END OF SECTION



SECTION 15400 - PLUMBING

PART I - GENERAL

1.01 DESCRIPTION

- A. Division 1, General Requirements, and Section 15050, Basic Mechanical Materials and Methods, shall be considered a part of these specifications.
- B. Codes, Ordinances, and Permits: All permits, connection fees, tap fees, licenses, approvals, and other arrangements including plumbing and riser diagrams, if required, shall be obtained by the plumbing contractor at his expense. Should any changes be necessary in the drawings, or specifications, to secure such approval, this contractor shall include in his bid all costs for such changes to comply with these departments, without extra costs to Walgreen Co. It will be this contractor's responsibility to provide all systems complete and operable.
- C. Scope of Work: Contractor shall furnish all materials, tools, equipment, labor, and services and pay all costs of whatever nature, as may be necessarily expended, for a proper workmanlike and fully operable installation, and completion of all plumbing and related work. The plumbing contractor shall provide the following within, beneath and up to 5 feet beyond the building(s):
  - 1. Complete system of sanitary, soil, waste, and vent piping connecting each and every plumbing fixture or other piece of equipment requiring same, with sanitary sewer including pipe, fittings, and other necessary appurtenances.
  - 2. Complete system of storm water drainage including downspouts, roof drains, pipe, fittings, and other necessary appurtenances.
  - 3. Complete systems shall be connected to adequate source of supply or disposal of the local public utility company or municipality commonly serving the area. It will be the contractor's responsibility to provide all systems complete and operable.
  - 4. Complete system of cold water supply and distributing piping of hot and cold water connecting to each and every plumbing fixture, cooling tower, evaporative condenser, or other pieces of equipment requiring same, including shut-off valves (for each piece of equipment), hangers, supports, and other necessary appurtenances.
  - 5. Cold water supplies to refrigeration and condensers.
  - 6. Funnel or other drains for air conditioning units, refrigeration, and fire protection piping.
  - 7. All floor and wall sleeves shall be provided at all wall and floor penetrations.
  - 8. All plumbing fixtures, except as hereinafter noted.
  - 9. All pipe covering.
  - 10. Water heaters/water coolers.
  - 11. Connections to the supply lines of the fixtures and outlets for equipment furnished by Walgreen Co.
  - 12. Seismic bracing of all equipment and piping as per state and local codes

1.02 SUBMITTALS

- A. This contractor shall submit product data for all plumbing fixtures, trim and accessories.

1.03 QUALITY ASSURANCE

- A. At Walgreens discretion, any store where the sewer/drainage system operation, installation or material are considered "suspect" shall be inspected, at the Landlord's/Contractor's expense, using a sewer line video camera. All necessary repairs will be made at the Landlord's/Contractor's expense.

PART II - PRODUCTS

2.01 PIPING & VALVES

- A. All sanitary sewers below floor shall be standard weight cast iron soil pipe.
- B. All waste lines within building to 5 feet outside of building shall be standard weight cast iron pipe conforming to CISI 302 or ANSI/ASTM A74. All inside downspout lines, less than 2.5 inch diameter, from roof drains to a point 6 inches above floor shall be Type "M" copper with wrought copper fittings. All fittings and couplings shall be soldered.
- C. See Section 02600 of the specifications for pipe more than 5 feet outside of the building.
- D. Sewer pipe underground more than 5 feet outside of building shall be vitrified clay pipe or locally acceptable alternate.
- E. Drain tile shall be standard form tile to conform with ASTM standards. Drain tile shall be placed with open joints and wrapped with building paper, set true to grade, and pitched to drain to sump. All tile shall be encased with a minimum of 6 inch clean gravel.
- F. All rough-in for plumbing fixtures, including all waste lines and all branch soil pipe below floor from plumbing fixtures, shall be standard weight cast iron pipe.
- G. All waste and vent piping above floor 2 inches and smaller to be Type "M" copper with wrought copper fittings. All fittings and couplings shall be soldered.
- H. Water main 2 ½ inch diameter and over in the ground shall be class 150 ductile iron water main pipe and fittings. Buried water main 2 inch diameter and under shall be "K" copper pipe and wrought copper fittings.
- I. All hot and cold water lines within the building above floor shall be copper tubing with copper fittings, type "L." All fittings and couplings shall be soldered.
- J. Where such use is acceptable to the authority having jurisdiction, all storm and sanitary lines and fittings above floor may be schedule 40 PVC DWV with solvent welded joints per ANSI/ASTM D2665 and D3311. All piping, valves, fittings and solvent shall be furnished by the same manufacturer.
- K. Isolation valves shall be *Jomar* Model T/S 100 ball type (or equal).

2.02 DRAINS

- A. Drains shall be 3 inch Josam 30003-6A, 3 inch Zurn Z-415 with type 'B' strainer, cast iron body, bottom outlet, 6 inch diameter, nickel-bronze strainer. Other acceptable alternate manufacturers - Smith and Wade.

2.03 CLEANOUTS

- A. Cleanouts appearing in finished floors to be Zurn Z-1400 which must finish flush with finished floor. Cleanouts appearing in finished wall to be Zurn Z- 1443 which must finish flush with

finished wall. Soil and waste piping run in the earth under the first floor slab shall have cleanouts of double eighth bends and finish flush with floors. All cleanouts must be in accessible location. Acceptable alternate manufacturers - Josam, Wade and Smith.

2.04 FLOOR SINK

- A. Zurn Z-1901-1, 3" Sani-Flor receptor, 12" X 12" X 8" deep, cast iron body with white acid resisting porcelain enamel interior and top, complete with aluminum anti-splash interior bottom dome strainer. Acceptable alternate manufacturers - Josam, Wade and Smith. (For use with expanded refrigeration)

2.05 PLUMBING FIXTURES

- A. Contractor shall furnish and install all plumbing fixtures.

2.06 WATER HEATING

- A. Storage Type:
  - 1. Water Heater: Provide water heater(s) as shown on plumbing drawings.
  - 2. Hot water outlets shall be provided with hot water at a temperature of 105 degrees F. unless otherwise noted.
  - 3. Flues: This contractor shall furnish and install type "B" vent flue. Flues shall be sized and run as required. Flues to be 3 feet above roof with rain cap, and Metal Fab (or approved equal) tall-cone flashing with storm collar.
  - 4. Combination temperature and pressure relief valve, ASME rated, McDonnell and Miller 202-NF 125-195 degrees or Watts 140-210 degrees, where fusible plug type is required by local code.
  - 5. Pipe relief outlets to drain.
  - 6. Thermometer on top of water heater. Range: 30 to 240 F. Only if required by code.

2.07 ELECTRIC WATER COOLER

- A. Oasis No. P8AMSL, Split-level, handicap accessible, self-contained, wall hung electric refrigerated water cooler. Acceptable alternate manufacturer - Elkay Halsey Taylor.

PART III - EXECUTION

3.01 INSTALLATION

- A. Cold Water Supply: Provide a cold water supply and meter, or meters. If water pressure exceeds 80 PSI, this contractor to furnish and install pressure reducing valve on main domestic service line set for 65 PSI.
- B. Piping in General: All pipes shall be run with proper grades to provide for easy draining. They must be thoroughly reamed and cleaned before installation. This contractor shall consult and cooperate with other piping contractors as to obtain the proper grouping of pipes and to avoid interference. Pipes run overhead shall be placed as close to the ceiling as possible to maintain proper headroom and to present a neat appearance, all consistent with the correct pitching of pipes. The plumbing contractor shall consult with the construction superintendent before installation of any pipe lines which will reduce the proper headroom in any way. Piping shall be run as shown on the drawings, but the construction superintendent reserves the right to make slight changes (without extra charge) to avoid conflict with other work. All piping to be concealed in walls.

- C. Vent Pipes: All vent pipes that pass through roof openings shall be kept at a reasonable distance from the walls to permit proper application of built up roofing and base and counter-flashings. All vent pipes shall be flashed with 3 pound sheet lead turned down into pipe.
- D. Cooler/Freezer Wastes: Condenser wastes from refrigeration equipment shall discharge into a minimum 3 inch combination funnel/floor drain connected to the sewer.
- E. Floor Drains: Furnish and install all floor drains.
- F. Cleanouts: Full sized brass screw plugs, cleanout plugs shall be furnished and installed at the foot of all soil and waste stacks, internal downspouts and at all points where necessary to permit the entire drainage system of being rodded out easily. Provide cleanouts at every turn in the waste line. No cleanouts to be located under shelving or in pharmacy.
- G. Connections to Equipment Furnished by Walgreen Co.: This contractor shall rough-in and connect all fixtures and equipment to be furnished by Walgreen Co. This shall include all hot and cold water, waste, and vent piping required to completely connect to equipment.
- H. Flues: Install per manufacturer's specifications.

3.02 TESTING

- A. Domestic Hot and Cold Water Systems: 100 PSI (minimum) air for one hour without leakage.
- B. Sewer Systems: 10 feet (minimum) hydrostatic for one hour without leakage.

END OF SECTION

SECTION 15500 - HEATING, VENTILATING, AND AIR CONDITIONING

PART I - GENERAL

1.01 DESCRIPTION

- A. Section 15050, Basic Mechanical Materials and Methods, shall be considered a part of these specifications.
- B. Codes, Ordinances, and Permits: The air conditioning and heating contractor shall promptly obtain all permits, arrange for all necessary inspection, and furnish a certificate of inspection and approval from the public authorities having jurisdiction, at this contractor's expense, before any work has been started. Should any changes be necessary in the drawings or specifications to secure such approval, this contractor shall include in the base bid all costs for such changes, to comply with these departments before any work has been started, without additional costs to Walgreen Co.
- C. Work under this section of the specifications includes the furnishing of all labor and material to provide a complete and operating heating, ventilating, and air conditioning system.
- D. All components of equipment in this section and all devices installed on these units shall be accessible for service.
- E. Seismic bracing of all equipment and piping as per state and local codes.

1.02 SUBMITTALS

- A. This contractor shall submit to Walgreen Co. product data of the packaged roof-top HVAC units before starting work.

1.03 WARRANTY

- A. All warranties shall be the length indicated and commence from the date of acceptance by Walgreen Co..
- B. One (1) year on the packaged units and electric strip heaters.
- C. Five (5) years on the compressors.
- D. Five (5) years on the condenser coils with protective coating.
- E. Ten (10) years on natural gas heat exchangers in all HVAC equipment.

PART II - PRODUCTS

2.01 ROOFTOP HEATING, VENTILATION, AND AIR CONDITIONING UNITS

- A. Units shall be packaged combination heating and cooling type, consisting of compressor section, air-cooled condenser section, cooling section, heating section, air handler section, and mixing box/filter section assembled on a common base. Provide units complete with control panel. Units shall be prepped and prewired. All compressor motors to have thermal overload, over and under voltage protection (loss-of-phase protection) on three legs (factory installed and wired). Unit shall be U.L listed and A.G.A. approved. Acceptable manufacturers: Trane.
- B. The units shall be A.G.A. approved and be a complete automatic heater. Controls furnished with the unit shall be supplied for the specific gas type and specification and in accordance with local utility regulations.



- C. The heat exchanger shall be an integral, completely welded aluminized steel unit composed of venturi-shaped, baffle-free sections welded to top and bottom header plates. Flue gases shall be power vented. Separated combustion type shall be used when indicated with integral exhaust/combustion air inlet and concentric adapter.
- D. Controls to include fan and limit controls, electronic ignition, pressure regulator, and shut-off cocks.
- E. Utilize natural gas furnaces in all locations.
- F. Unit shall be capable of fully automatic operation with ambient temperatures down to about (standard with manufacturer) 25 degree F for refrigeration cycle.
- G. Rooftop units shall have factory-installed economizers with pressure relief dampers when specified on the mechanical drawings, or as required by Code. Units with economizers shall have enthalpy based control that optimizes the use of outdoor air for free cooling. A differential enthalpy, comparative enthalpy or dry bulb control should not be used.
- H. Unit sizes 7 1/2 ton and above shall be two-stage heating (medium and high) and two-stage cooling, complete with multiple refrigeration circuits and time delay.
- I. All units shall be provided with roof curbs, at least 14" high. The roof curbs shall include a wood nailer, a galvanized sheet metal cap with space between for at least 3/8 inch thick roof flashing material. The roof curbs may be without insulation. Top of roof curb shall be installed level, shimmed from beneath so top of curb will be at least 12 inch higher than all adjacent roof surfaces. Refer to architectural drawing(s) for details, A1.4, Detail 6.
- J. *Carrier equipment shall utilize Carrier Premier Link temperature control devices when the EMS system is specified. Trane equipment shall use Trane programmable thermostat.*
- K. Provide 2 sets of throwaway type filters in accordance with manufacturer's specifications, with one set to be used at system start-up and the second set to be installed at time of final tab services.
- L. External High-low pressure cut-outs factory installed are required on all rooftop units.
- M. Provide all necessary contactors, relays, motor starters, etc. for a complete operating unit.
- N. Provide crankcase heaters for all Trane units. Provide crankcase heaters on Carrier units with a Humidimizer and on the Energy Recycler.
- O. For all projects in Puerto Rico and those projects in the 50 United States, **5 miles (or less)** from the Atlantic and Pacific Ocean or Gulf of Mexico, furnish each unit with standard aluminum fins and copper tubing condenser coil(s) along with *Carrier E-Coat or Trane Epoxy* coil treatment, with a five-year warranty.
- P. Housings shall be painted and weatherproofed with gasketed hinged access doors and factory insulated.
- Q. All units shall have belt driven evaporator fans with adjustable pitch. If not available, then direct drive will be acceptable. The manufacturers of the HVAC equipment shall furnish the proper adjustable pulleys and belts necessary to achieve the specified design conditions be they factory installed, shipped loose, provided later, or any combination thereof.
- R. A duct smoke detector (SD) shall be furnished and factory installed per in each unit having a capacity greater than 2,000 cfm on the return and/or supply as required by the governing building code and the authority having jurisdiction, unless specified differently in the contract documents by the Engineer-of-Record and/or ordered otherwise by the contractor. Provide smoke sampling tube(s) as required for proper smoke detection. Each SD shall be factory wired to stop the respective fan on detecting the presence of smoke. The SD shall not be powered from the RTU.

At the discretion of the HVAC equipment manufacturer, the manufacturer and model of SD(s) shall be as specified in the fire alarm section of these specifications or may be the GE/Telaire Series TSD. If the Telaire TSD is selected, all Walgreens RTUs shipped from that manufacturer shall be made ready for easy and proper installation of those smoke detectors in the field. Each RTU that has a smoke detector(s) shall be furnished with a remote test station of the same manufacturer and shall be compatible with the SD(s). All unit mounted SDs shall be compatible with the actual Walgreens fire alarm system installed in that store. The RTU manufacturer shall test the proper operation of the smoke detection system for each model, size and configuration and environmental condition of units they furnish. The RTU, with all components as shipped, shall be UL listed.

- S. On each RTU with a factory installed duct smoke detector, provide an accessible wiring termination board for the specified remote test/reset station specified in Section 16720 of the specifications.

## 2.02 AIR CURTAINS

- A. An air curtain shall be furnished as specified on the drawings.
- B. See drawings and schedule for quantities, size (kw capacities when applicable).
- C. Acceptable manufacturers – Berner.

## 2.03 ENTRANCE HEATERS

- A. Furnish packaged, roof curb-mounted heating and ventilating unit with downward discharge air, upward return air, filter rack with 2-inch throwaway air filters, 14” minimum high roof curb per size, capacity as indicated in the schedule on the drawings.
- B. Unit shall have a powered vent, spark ignition, and ODP motor and belt drive.
- C. Provide SD per paragraph 2.01 R.
- D. Heat exchanger shall be aluminized sheet with a 10 year warranty.
- E. Burner shall be fueled from a two-stage natural gas valve, controlled by a room temperature sensor or factory furnished thermostat located in the Sales area. When there is a vestibule, an additional factory furnished freeze protection thermostat shall be provided and located within the vestibule near the return air grille.
- F. The complete unit shall be as specified, manufactured by Greenheck, Modine, Reznor and Trane.

## 2.04 FLUES

- A. Flues from all heating equipment shall be of double wall construction with type "B" vent classification.
- B. Flues shall be sized and run as required. Flues to be 3 feet above roof with weather cap, unless otherwise noted.

## 2.05 GAS PIPING

- A. The heating contractor (unless local jurisdiction requires the plumbing contractor) shall provide a complete system of gas piping extending to all equipment requiring the same.
  - 1. Include valves, pipes, fittings, hangers, supports, gas pressure regulators, dirt legs and all other necessary appurtenances. Valves shall be at each piece of equipment.
  - 2. Rough-in and connect all fixtures and equipment furnished by Walgreen Co., include all gas piping required to completely connect the equipment.

3. All gas piping to be standard weight black steel with standard weight malleable iron fittings and run within building, generally above ceilings, out through roof.
4. Valves shall be *Jomar* Model T/S 100 ball type (or equal).
5. Test piping systems per Utility Company requirements.

2.06 CONDENSATE DRAIN

- A. This contractor shall furnish and install a condensate control device (Costgard) from each air conditioning unit. This contractor shall provide condensate drain piping when required by Note 3.3 on drawing M1.1.
- B. Condensate piping shall be supported as per manufacturers recommendations.

2.07 REFRIGERANT SYSTEM CHARGING

- A. Follow manufacturer's recommended charging procedure for both refrigerant and refrigerant oil.
- B. Replace any refrigerant or oil lost from the system during the guarantee (one year) period at no expense to Walgreen Co.

PART III - EXECUTION

3.01 INSTALLATION

- A. Install units in accordance with the manufacturer's instructions.
- B. For occupied operation, set the minimum position of the outside air intakes to the CFM shown on the equipment schedules, not less than required by the applicable code.

3.02 TESTING REFRIGERANT PIPING SYSTEM

- A. The piping shall be pressure tested and load tested twice in the presence of a Walgreen Co. representative, and then blown out with dry nitrogen.
- B. Expansion valves and compressor crankcases are not to be pressure tested.
- C. All refrigerant gas piping shall be leak tested and comply with appropriate codes. Air test at 1 1/2 times working pressure for 1 hour with no loss in pressure unless otherwise noted.

END OF SECTION

## SECTION 15650 - REFRIGERATION

### PART I - GENERAL

#### 1.01 DESCRIPTION

- A. Section 15050, Basic Mechanical Materials and Methods, shall be considered a part of these specifications.
- B. The refrigeration systems serving the various refrigerated equipment units and fixture will consist of, but not be limited to, the following:
  - 1. Motor-driven compressors of the air cooled and/or water cooled type with defroster controls, etc. serving each piece of equipment.
  - 2. Refrigerant piping to be copper type 'K' with insulation as described in Section 15250, 2.01, B.
  - 3. The electrical wiring required for the operation of the compressors, condensers, evaporators, defrosters, lighting, etc. Wiring shall be done in accordance with the wiring diagram supplied with each piece of equipment and coordinated with Walgreen Co. refrigeration contractor and manufacturer's specifications.
  - 4. Refrigeration condensate drain piping to be copper type 'L'.

### PART II - PRODUCTS (NOT USED - FURNISHED BY WALGREEN CO.)

### PART III - EXECUTION

#### 3.01 INSTALLATION

- A. The labor and material required for the installation of the refrigerant piping shall be provided by Walgreen Co. See separate "Installation and Operations Manual" for typical Walgreen Walk-in Cooler/Freezer. (<http://facilities.walgreens.com>)
- B. The labor and material required for the installation of the electrical work necessary to make this a complete installation shall be provided by the electrical contractor, including defrosting and control wiring.
- C. The labor and material required for support of the compressor and condensers located on the roof, equipment deck, etc. shall be provided by the general contractor.

END OF SECTION



## SECTION 15880 - AIR DISTRIBUTION

### PART I - GENERAL

#### 1.01 DESCRIPTION

- A. Section 15050, Basic Mechanical Materials and Methods and Section 15250, Mechanical Insulation, shall be considered a part of these specifications.
- B. All licenses, stamping, approvals, and arrangements for work shall be obtained by the sheet metal contractor, at his expense, before any work has been started. Should any changes be necessary in the drawings or specifications to insure such approval, this contractor shall include in his base bid all costs for such changes, to comply with these departments before any work has been started, without additional cost to Walgreen Co.
- C. Scope of Work: The ventilation work includes, but is not limited to, the following:
  - 1. Air conditioning outside air ducts, return air ducts, insulation, grilles, supply air unit filters, fans, motors, supply air ducts, diffusers, manual dampers and fire dampers.
  - 2. Exhaust/ventilation system fans, blowers, ducts, grilles, diffusers, dampers, etc.
  - 3. Roof curbs required for duct openings through roof.

### PART II - PRODUCTS

#### 2.01 DUCTWORK

- A. Acceptable manufacturers of round and oval spiral: Lindab, Semco, SSM Industries and United McGill.
- B. All round and oval duct and fittings shall be manufactured by a single company manufacturing these products for at least 10 years.
- C. Provide round spiral and/or oval spiral ductwork. Round spiral and oval spiral ductwork with longitudinal seams are not permitted.
- D. Rectangular ductwork, sized for an equivalent pressure drop, may only be used in lieu of round or oval, on limited basis and/or to clear structural interference.
- E. Ducts and fittings shall be constructed of galvanized steel in accordance with the Second Edition – 1995 with Addendum No 1 dated November 1, 1997 of the SMACNA HVAC Duct Construction Standards for a positive static pressure class of 2.0 in. water column.
- F. Fiber ductwork or lined ductwork is not acceptable.
- G. Ductwork shall have sealed transverse joints and meet seal class "C". Rubber seals may be used in lieu of duct sealant.
- H. Ductwork shall comply with leak class 12, not to exceed 12 cfm per 100 sf of duct surface.
- I. For rectangular duct sizes, the first number indicates the side seen. The second number indicates the side not seen.

- J. Duct sizes, indicated on the drawings, are net inside clear dimensions.
- K. Air friction pressure drop shall not exceed 0.1 in WC per 100 linear feet.
- L. Air velocity in ductwork shall not exceed 1500 feet per minute.
- M. Flexible round ductwork shall be pre-insulated type with 1.5" thick insulation. Acceptable manufacturer is Wiremold type WK or Equal by ATCO, Flexmaster, Technaflex, Thermaflex Lindab, Semco and United McGill.
- N. The drawings do not attempt to show all offsets that are necessary for the required installation. Those offsets and similar items shall be provided at no additional cost to Walgreens.
- O. Where offsets are required, the angle of the offsets shall be as small as possible.

## 2.02 GRILLES, REGISTERS, AND DIFFUSERS

- A. Supply grilles shall be Metal-Aire. Acceptable alternate manufacturers - Carnes, Krueger, Price, Titus and Tuttle & Bailey.
- B. Return grilles shall be Metal-Aire. Acceptable alternate manufacturers - Carnes, Krueger, Price, Titus and Tuttle & Bailey.
- C. Ceiling diffusers shall be Metal-Aire. Acceptable alternate manufacturers - Carnes, Krueger, Price, Titus and Tuttle & Bailey.
- D. Supply air diffuser in lay-in ceilings shall not be installed directly adjacent to lighting fixtures.

## 2.03 LOUVERS & HOODS

- A. Fresh air intake, combustion air intake, and exhaust louvers will be furnished and installed by this contractor.
- B. Ducts ending above the roof shall be terminated with Greenheck GRS gravity hood with bird screen. Acceptable alternate manufacturers - Acme, Carnes, Cook, Jenn and Penn.

## 2.04 EXHAUST AND SUPPLY FANS

- A. Exhaust and supply fans and blowers as shown on drawings and schedule shall be furnished and installed by this contractor, unless noted otherwise.

## PART III - EXECUTION

### 3.01 INSTALLATION

- A. Ductwork shall be installed in sizes and in location as indicated on plans. Where square corners are used, they shall be provided with turning vanes. Spiral ductwork joints shall have sheet metal screws in connections.

- B. The ductwork system throughout the building shall be rigidly supported and so constructed as to eliminate vibration or any objectionable noise when the ventilation machinery is in operation.
- C. Where ducts pass through walls or floor openings, they shall be kept free of direct contact of building construction by supporting each side of opening. The space between duct and opening shall be closed by means of felt gaskets caulked in place, to comply with local fire codes, ordinances, etc.
- D. Deflectors: Wherever branches are taken off, provide deflectors or splitters to regulate the airflow. On each deflector, provide a regulator to lock the deflector in a fixed position, where accessible through access panel. Where not accessible through panel, provide a key-operated Young regulator with indicator and ceiling plate.
- E. Flexible Connections: Furnish and install on the suction and discharge side of all fans and units, at least 4 inches of 10 oz. canvas or equivalent vinyl with heavy clamping bands. Canvas connection to all roof-top units shall be as close to unit as possible, just below roof curb.
- F. Fire Dampers: Provide fire dampers in duct locations where required by local authority. Ducts shall be enlarged where fire dampers are installed to maintain the same airflow through damper frame as unobstructed run of duct. Provide access to service fire dampers.
- G. Belt Guards: For each belt drive, furnish a guard consisting of an angle iron frame with 1 inch mesh heavy wire guard supported and securely bolted in place, etc. to comply to local codes.
- H. Access Panels: Provide tight sheet metal access doors (with gasket, hinges, and locks), or where access to plenum spaces or ducts is necessary. Access doors shall be of adequate size and installed per local codes.
- I. Volume Controls for Balancing: Ample provision shall be made for control and for balancing the ventilation systems by installation of dampers, regulators, and controls. Dampers shall be fabricated and installed in strict accordance with SMACNA standards and practices.
- J. Dampers for exhaust and outside air shall be equipped with motorized dampers with a maximum leakage rate of 3 cfm/ft at 1.0 w.g. when tested in accordance with AMCA Standard 500. Such dampers shall be closed when fans are off.
- K. Painting: Paint all ductwork visible through grilles, registers, and diffusers a flat black.
- L. Duct Sealant: Use RCD #6 mastic with red glasscoat (or equivalent). Install per manufacturers and UL181A & B recommendations for square and rectangular ductwork. Sealant is not required for spiral gasketed ductwork.

### 3.02 DUCTWORK CLEANING

- A. Ductwork shall be thoroughly cleaned by this contractor.
- B. Cleaning shall be done before any painting is done or acoustic ceiling installed.

END OF SECTION





SECTION 15950 – INSTRUMENTATION AND CONTROLS FOR HVAC

PART I - GENERAL

1.01 DESCRIPTION

- A. Section 15050, Basic Mechanical Materials and Methods, shall be considered a part of these specifications.
- B. The contractor under this heading shall be the heating and air conditioning contractor who shall furnish all control equipment, engineering services, job drawings, and field supervision for temperature control.
- C. This specification is intended to cover equipment for the automatic temperature control of the:
  - Heating,
  - Ventilation, and
  - Air Conditioning Systems.

1.02 GUARANTEE

- A. The control system shall be free from defects in workmanship and material under normal use and service. If within 12 months from date of acceptance by the engineer, any of the equipment herein described is proved to be defective in workmanship or material, it shall be replaced or repaired free of charge.
- B. This contractor shall, after completion of the original test of the installation and acceptance by the engineer, provide any service incidental to the proper performance of the temperature control system under guarantees outlined above for the period of one year. After completion of the installation, this contractor shall regulate and adjust all equipment provided under this contract. He shall place them in complete operating condition subject to the approval of Walgreen Co.

PART II - PRODUCTS

2.01 THERMOSTATS

- A. Programmable thermostat for *Carrier* packaged rooftop units to be *Carrier* (Energy Management System) space sensor with adjustment and remote sensor. *Trane* packaged rooftop units to utilize *Trane* programmable thermostat and remote sensor, unless noted otherwise.
- B. Temperature sensor and thermostat for Entrance heater (EH-1) roof-top unit to be as described on the drawings.
- C. The respective RTU shall be controlled initially from a temperature sensor located in the Manager's Office or later from a remote sensor in the Sales area.

2.02 FIRE PROTECTION

- A. Provide firestats and/or smoke detectors as described in Section 16720.

2.03 INDOOR RELATIVE HUMIDITY SENSOR

- A. This sensor, located in the Sales area shall control the Dehumidification by Trane.

## PART III - EXECUTION

### 3.01 INSTALLATION

- A. All dampers shall be positioned by the ventilation contractor. Ventilation contractor shall also mark positions of dampers on "as built" layouts.
- B. All control motors must be spring return and must have oil immersed gear train.
- C. All electrical wiring and mounting of temperature control devices shall be provided under the electrical contract and shall be in accordance with all existing codes. The electrical contractor shall run all wiring and conduit. This contractor shall provide wiring drawings to the electrical contractor for the installation.
- D. All temperature control devices and sensors shall be labeled with the associated RTU or exhaust fan number. (ie: RTU- 1, EH- 1, EF- 1, etc.)

### 3.02 PERFORMANCE

- A. The Energy Management System (EMS) capabilities shall include control, monitoring and alarming of HVAC and refrigeration equipment and accessories as follows:
  - 1. Control
    - a. RTU evaporator fan
    - b. RTU cool stage 1
    - c. RTU cool stage 2
    - d. RTU heat stage 1
    - e. RTU heat stage 2
    - f. Economizer position (0 – 100%)
    - g. Space relative humidity
    - h. Interlock preventing simultaneous start of rooftop units
    - i. Sequence start/stop control of RTU's
  - 2. Monitoring
    - a. HVAC
      - 1) space relative humidity
      - 2) space temperatures
      - 3) supply air temperatures
      - 4) outdoor air temperature
      - 5) temperature setpoints
      - 6) equipment status: fan, heat stage 1 & 2, cool stage 1 & 2, economizer status, outdoor air damper position
    - b. Refrigeration
      - 1) freezer temperature
      - 2) cooler temperature
    - c. Alarming (System shall be able to generate and email the following alarm messages:
      - 1) Space temperature – High
      - 2) Space temperature – Low
      - 3) Fire alarm shutdown
      - 4) Supply fan status
      - 5) Compressor lockout
      - 6) Sensor(s) failure (applies to temperature and humidity type sensors)
      - 7) Freezer temperature (High/Low)
      - 8) Freezer/cooler trouble alarm

9) Space humidity – High

d. Future Expansion

System shall have capacity for future expansion and incorporation of functions currently performed by store control system (such as interior lighting, miscellaneous power, wall and entrance heat controls, etc.)

e. Communication

1) Within Walgreens Intranet

Ethernet TCP/IP communication with EMS panels in the stores shall be performed via dedicated server(s) at Walgreens Mount Prospect facility. The server shall provide graphical views of the system, which can be accessed via a standard web browser such as *Internet Explorer* or *Netscape Navigator*.

2) Outside Walgreens Intranet

Vendors would be able to communicate with EMS panels via dedicated port (firewall) in above-mentioned server(s) or via Internet VPN (vendors shall discuss details with Walgreens IT security).

f. Support

1) Submittal documentation package including control drawings

2) Initial programming

3) Technical support during installation and startup

4) On-site commissioning

5) First year 24 hour, 7 days-a-week support via vendor monitoring center including receiving and logging calls, diagnosing and addressing problems, program scheduling, etc. Vendor shall provide Call Center support to dispatch service provider.

g. Warranty – 1 year control component warranty

B. *Carrier or Trane* Sequence of Operations: The heating and cooling setpoints shall be individually adjustable for both occupied and unoccupied periods. The thermostats shall have a minimum deadband of 2 degrees F and a maximum deadband of 5 degrees F (no mechanical heating or cooling shall operate within this deadband). Space temperature deviation above cooling setpoint or below the heating setpoint shall generate a demand signal to control the system as follows:

1. Heating: The EMS system (temperature control device) shall control the heating outputs based on the demand signal communicated from the temperature control program, taking into account both space temperature deviation (proportional error) and the duration of that temperature deviation (integral error). The outdoor air damper shall be at a minimum position during the occupied period, and shall be closed during the unoccupied period of the heating mode. Auxiliary heat shall be controlled at 2 degrees F below heating setpoint on heat pump systems.

2. Cooling: The EMS system (temperature control device) shall control the cooling outputs based on the demand signal communicated from the thermostat program, taking into account both space temperature deviation (proportional error) and the duration of that temperature deviation (integral error).

C. Heating Setback and Cooling Setup: Initiation of heating setback or cooling setup for each of 7 days shall be provided by a programmed time schedule manually entered into the thermostat. When all or a portion of a manually programmed schedule is unavailable, the thermostat shall control the unavailable program functions to occupied mode and default setpoint ranges as follows:

TABLE OF DEFAULT SETPOINT RANGES				
	Occupied		Unoccupied	
	°F	°C	°F	°C
Heating	68	20	55	13
Cooling	78	26	90	32

D. Setpoint Recovery from Unoccupied to Occupied: The thermostat shall employ Intelligent Recovery™. This shall select the optimum time to begin building warm up or cool down based on setpoints and occupied program.

1. The temperature shall ramp 5 degrees per hour for both heating and cooling on a conventional system.
2. The temperature shall ramp 3 degrees per hour for heating and 5 degrees for cooling on a heat pump system.

E. An enthalpy based changeover control shall determine the capability of the outdoor air to provide free cooling. A differential enthalpy, comparative enthalpy or dry bulb control should not be used.

F. Fan Operation:

1. HVAC unit fan operation shall be constant during the occupied period.
2. Fan operation shall be intermittent during the unoccupied period.

G. Heating and Cooling Operation Minimum On/Off Times: The thermostat shall incorporate a program to maintain minimum-stage operation times of 2 minutes “on” and 4 minutes “off” for compressor stages, and 2 minutes “on” and 2 minutes “off” for heat (gas or electric resistive).

H. Economizer Interface:

1. The economizer’s minimum position shall be controlled such that then the occupied period is in effect, the economizer will operate as described in Section E. During unoccupied periods, this contact will open defeating economizer minimum position. However, the economizer will be available for free cooling if outdoor return air conditon permits.

END OF SECTION

## SECTION 15990 - TESTING, ADJUSTING, BALANCING, AND COMMISSIONING

### PART I - GENERAL

#### 1.01 DESCRIPTION

- A. The Mechanical Contractor shall furnish the testing, adjusting, balancing, and commissioning of the HVAC system as a part of the HVAC rooftop purchase from the rooftop manufacturer. The rooftop manufacturer shall incorporate the services of a certified national TAB firm for all of the stores in their assigned territories.
- B. The TAB firm shall be responsible for scheduling the testing, adjusting, and balancing directly with the Walgreens project superintendent at least 2 weeks in advance. The TAB firm will e-mail a completion checklist (see item D below, add any other items as deemed necessary) to Walgreen's superintendent, to be filled-out by GC to assure that HVAC system shall be fully ready before TAB firm arrives at site. Walgreens will provide an updated project list and superintendent contact list with e-mail addresses and cell phone numbers to the HVAC manufacturer and TAB firm on a regular basis via e-mail. The TAB firm will request project design mechanical drawings (M1. 1, M2. 1, M2.2: CAD files via e-mail) and specifications from GC two weeks prior to site visit.
- C. The Walgreens superintendent shall notify the GC of the scheduled balancing date. The GC shall coordinate with the mechanical and electrical sub-contractors in order to have the appropriate tradesmen on site to correct any deficiencies in wiring, ductwork, or equipment start-up. See the standard format in the appendix of this section.
- D. This work shall be scheduled to be performed after the HVAC system has been started by the mechanical contractor and prior to fixture date. The following must be complete prior to the TAB firm's visit:
  - 1. All field mounted accessories must be assembled and economizer/OA dampers installed and wired. Units must be properly tagged per design drawings.
  - 2. Gas piping completed and gas turned on.
  - 3. All power wiring completed, disconnects mounted, and power turned on, fan rotation checked.
  - 4. All control wiring completed including thermostats and smoke detectors.
  - 5. All doors and windows installed and ceiling files in place.
  - 6. All duct work with balancing dampers and diffusers fully installed.
  - 7. Clean filters installed.
- E. If, for any reason, the HVAC system is not operational in time for the TAB firm to schedule the work prior to fixture date, the GC shall be responsible for any and all additional costs incurred by rescheduling the TAB firm.

#### 1.02 TESTING, ADJUSTING, BALANCING, AND COMMISSIONING

- A. The purpose of testing, adjusting, and balancing the HVAC system is to ensure optimal performance, comfort, and energy efficiency for the Owner's benefit. This service covers all heating and air-conditioning and exhaust ventilation systems.
- B. A certified report shall be submitted to the Walgreens superintendent (2 copies), the General Contractor, and the Mechanical Contractor within 2 weeks of completion.
- C. The TAB work shall be completed in accordance with the following checklist:

## GENERAL

1. Inquire about any design, equipment, and installation problems.
2. Compare installed system to design mechanical plans for the specific store.
3. Compare design system with prototype for variations, additions, deletions.
4. Document design specifications for report.
5. Ensure all fans are running for balance.
6. Measure initial building pressure.

## INSPECT THE HVAC SYSTEM

7. Inspect rooftop units and document any deficiencies.
8. Record unit nameplate data.
9. Check thermostats for proper wiring and settings.
10. Check for correct fan rotation (include condenser fans).
11. Check conditions of filters and coils.
12. Check position of outside air dampers.
13. Check gas lines and condensate lines.
14. Check belt tension and pulley alignment.
15. Check disconnects switches and covers.
16. Check any fan noise and vibration.
17. Check heating/cooling, and economizer modes of RTU's.
18. Check condensate trap (Costguard) installation
19. Check exhaust fans and distance between OA intake and exhaust
20. Check entrance heater and door air curtain (at receiving door) for proper installation
21. Check exhaust diffuser and register at the one hour photo machine for proper location.
22. Check supply diffuser locations at entrance, at windows and in-front of cooler/freezer
23. Check electric wall heaters for quantity, locations and proper operation.
24. Check ERV (in applicable areas per Walgreens criteria) installation with its ductwork and controls.
25. Check proper installation of all volume dampers

26. Check for proper installation of flexible ducts for bends, lengths and clamps.

TEST, ADJUST AND BALANCE THE HVAC SYSTEM

27. Measure and adjust diffuser supply and return airflows within 10% of the design, using balancing dampers and locking them in that position. Mark damper balance positions.

28. Adjust flows to provide design OA flow for proper pressurization.

29. Adjust RPM as necessary to achieve design.

- Check actual amps versus motor FLA for evaporator fan, compressors and condenser fans.
- Note adjustments made on pulleys.
- Measure final RPMs.
- Measure space temperatures (Checkout, 1hr photo, pharmacy, office, three spot temperatures in sales area, and SA/RA/OA temperatures. Temperature readings shall be recorded after the system has been running over 8 hours and thermostats have been properly set in.

30. Adjust damper airflows at branch take-off s first and at diffusers second.

31. Check for drafts and hot/cold spots.

32. Ensure slightly positive building pressure.

- Fine tune position of OA dampers.
- Measure final building pressure.

FINAL REVIEW

33. Prepare the final test report per forms included in the Walgreens web site.

34. Provide HVAC punch-list to Walgreen's superintendent before leaving the site; also e-mail it to Walgreen's construction manager.

35. Review report and data for completeness.

36. Discuss findings and results with Walgreen's superintendent.

- D. Air quantities shall be balanced to within +/-10% of design as a general rule. However, in some cases, the air quantities may need to be adjusted differently in order to ensure acceptable comfort levels, positive building pressure, noise consideration etc. Any excessive variation at certain diffusers (over 20%) must be reported with explanations if it cannot be balanced as required. However the total RTU supply CFM must be within +/- 10%.
- E. The TAB technician shall notify the GC and the Walgreen's project superintendents of any deficiencies needing immediate attention. The G.C. shall have the mechanical and electrical contractors available to promptly correct any such problems (i.e. replace burned out motors, failed thermostats, incorrect wiring, bad circuit breakers and starters, dirty filters, missing dampers, undersized RTU outside air intakes).



- F. In the event that the TAB firm is unable to perform a complete TAB and commissioning of the entire system due to deficiencies in the completion of items outlined above, the Walgreens superintendent may request that the TAB firm schedule a follow up visit to test, balance, and commission any equipment that could not be completed on the initial visit. The G.C. shall be responsible to issue a purchase order and reimburse the HVAC manufacturer for the additional cost incurred, including travel and applicable expenses.

1.03 **REPORTS TO BE SUBMITTED**

(Obtain the copies of the report forms from Walgreens web site)

<http://facilities.walgreens.com> (A/E Tools, under "Engineering")

**A. TAB SCHEDULING**

E-mail the TAB scheduling form to Walgreen superintendent with a copy to construction manager at Deerfield, to obtain project completion status and to schedule site visit for air balancing. The response must be requested via email with copy to project manager at Deerfield in a "YES or NO" format with explanation as necessary.

**B. HVAC PUNCH LIST**

E-mail a rough draft HVAC punch-list of the following items to Walgreen's field superintendent and Walgreen's construction project manager at Deerfield for this project.

1. Any HVAC items not completed as of air balance date.  
(RTUs, ERV, Exhaust Fans, Ductwork, Dampers, Diffusers, Insulation, Heaters)
2. Any incorrect installations that need to be addressed.
3. Any items omitted or revised from the design drawings.
4. If TAB firm needs to be rescheduled due to incompleteness of the systems.
5. Include copy of the checklist of system completion received by TAB firm
6. A field summary report outlining all appropriate observations

**C. SYSTEM STARTUP REPORT**

RTU Startup report: Provide full report for each rooftop unit along with any deficiencies that need to be corrected.

**D. CHECK LIST REPORT**

HVAC Check-list report: Provide full report for all items listed in three pages of the check-list included in the output forms on Walgreen's web site.

**E. AIR BALANCE REPORT**

1. Provide air balance report for each diffuser and RTU/Exh fan to include design/actual CFM, along with store plan with diffuser and RTU locations and tag matching with CFM summary.
2. Use forms in the attached report forms for air balance report.

3. Provide exhaust CFM report along with exhaust fan locations on above plan.
4. Provide balance & pressurization schedule for the store.
5. Space temperatures, SA/RA/OA temperatures.

F. EQUIPMENT DATA

1. Provide RTU nameplate data listing make, model #, serial #, nominal tons, number of compressors, HP and model # of each compressor along with make, evaporator fan motor data, condenser fan motor data, final RPM of evaporative fan, pulley and belt sizes, filter sizes etc.
2. Exhaust fan make, model #, motor data, CFM.

G. HVAC PLAN SHOWING DIFFUSER/RTU/EXH FANS

CAD plan received from design engineer showing RTU, diffusers and exhaust fans along with tags as described above in item #F.

H. PHOTOGRAPHS

Include digital pictures of RTUs, ERV, and any other items that would help in understanding the items reported as deficient in the inspection report as per item # D.

I. ADDITIONAL INFORMATION (if any)

Include any additional information not listed above that might be useful for the specific store in understanding above report.

END OF SECTION



SECTION 16050 - BASIC ELECTRICAL MATERIALS AND METHODS

PART I - GENERAL

1.01 ELECTRICAL GENERAL REQUIREMENTS

- A. This section applies to all electrical work. The contractors involved shall check all sections of the specifications in addition to the particular section covering their specific trade. Each distinct section of the specifications aimed for one trade may have detailed information with regards to other trades, therefore, it is imperative that all sections be reviewed to get a complete picture of all other trades' functions and work required.
- B. The Walgreen Co. drawings, which constitute an integral part of this contract, shall serve as the working plans. They indicate the general layout of the complete electrical system.
1. "Field verification, of scaled dimensions on plans, is directed since actual locations, distances and levels will be governed by actual field conditions." All measurements shall be verified at the site.
  2. The mechanical and electrical contractors shall check architectural, structural, plumbing, heating, ventilation, and air conditioning plans to avert possible installation conflicts. Should drastic changes from original plans be necessary to resolve such conflict, the contractor shall notify the architect and Walgreen Co. - Facilities Planning and Design Department, and secure written approval and agreement on necessary adjustment before the installation is started.
  3. Discrepancies shown between plans, or between plans and actual field conditions, or between plans and specifications shall promptly be brought to the attention of Walgreen Co. for a decision.
  4. Drawings and specifications are intended to cover the completed installation of systems to function as described. The omission of the expressed reference to any item of labor and material necessary to comply to practice codes, ordinances, etc shall not relieve the contractor from providing such additional labor and material.
  5. The contract drawings serve as working drawings for the general layout of the various services. However, layout of equipment accessories, specialties, piping systems, and conduit runs are diagrammatic unless specifically dimensioned and do not necessarily indicate every required valve, fitting, transition, turning vane, junction box, pull box, conduit size, etc. It will be the contractor's responsibility to provide all systems complete and operable. The contractor to make field verification of all services, systems, etc. as part of the total work required and the cost to be included in his base bid.
- C. Accessibility: Do not locate traps, controls, unions, pull boxes, etc. in any system at a location that will be inaccessible after construction is completed. Maintains accessibility for all components in mechanical, electrical, and plumbing systems.
- D. Cutting and Patching: All cutting required shall be done by the contractor whose work is involved, without extra cost to Walgreen Co. All patching and restoration including the furnishing and installation of access panels in ceiling, walls, etc. within the building lines shall be done by the respective, responsible contractor. No cutting of structural steel, concrete, or wood shall be done without prior approval and explicit directions of the architect and Walgreen Co. All duct openings in walls, floors, ceiling, and roof shall be cut and patched by the respective, responsible contractor.

- E. Relocation of Existing Duct, Conduits, Pipes and Utilities: The contractor, under whose jurisdiction the work may fall, shall provide labor, material, and tools required to cut, repair, protect, cap, or relocate existing pipes, conduits, or utilities interfering with or uncovered during work, per regulations of the authorities having jurisdiction.
- F. Excavation and Backfill: Excavation and removal of material, shoring, and backfilling required for the proper laying of all pipes and conduits inside the building and premises, and outside as may be necessary, shall be done by the contractor whose work is involved, without extra cost to Walgreen Co.
- G. Vibration Eliminators: Rotating or reciprocating equipment, ducts, piping, etc. shall be isolated from the structure by means of approved vibration absorbing units as provided or recommended by the equipment manufacturer or architect.
- H. Sleeves: Each contractor shall furnish required sleeves. Sleeves shall be extended 2" above the floor, wall, etc. unless noted otherwise and shall be galvanized steel pipe and of the required size. The contractor responsible for running pipes in the sleeve shall caulk the space between pipe and sleeve with oakum and seal with mastic cement or other approved material.
- I. Electric Motors: Each contractor shall provide all electric motors for their respective work. Verify building voltage prior to ordering motors. Motors shall be N.E.M.A. standard design for quiet operation and of ample size to operate at their proper load and full speed continuously without causing undue noise or vibration. All motors to be drip proof construction and have ball bearings. Provide all belted motors with guide rails, adjusting screws, anchor bolts, and cast iron bed plates. Furnish standard size V belts and pulleys. Provide full voltage magnetic starters for all three-phase motor-driven equipment. (General Electric CR7006 or Allen-Bradley Bul. 709.)
- J. Electrical Wiring: The electrical contractor shall furnish all wiring required for the operation of motors and controls.
- K. Damage to Other Work: Each contractor will be held rigidly responsible for all damages to their own or any other trades' work resulting from the execution of the involved contractor's work.
- L. Large Equipment: All large equipment which is to be installed in the building that may be too large to enter through stairways, doorways, or shaft shall be brought on the job and placed in the proper space before the enclosing structure is completed, unless arrangements are made with other contractors to permit access at a later date, without additional cost to Walgreen Co.
- M. Rough-in for Connection to Equipment: It shall be the responsibility of each contractor to study the architectural, structural, electrical, and mechanical drawings, conferring with the various trades involved and checking with the supplier of equipment in order to properly rough-in for all equipment.
- N. Material and Equipment: All material and equipment shall be new and of the best quality used for the purpose in good commercial practice, and shall be the standard product of reputable manufacturers. The material and equipment must meet approval of state and local codes in the area it is being used.
- O. Construction Superintendent: The term "construction superintendent" shall herein be referred to synonymously as Walgreen Co.'s construction superintendent.
- P. Performance of Work: All work outlined in the various mechanical and electrical sections shall be done by the contractor under whose jurisdiction the work may fall. See drawings and specifications.
- Q. Roof decks shall not be used to support piping, conduit, equipment (except roof mounted) devices, etc.

1.02 SUPPLEMENTARY CONDITIONS

- A. Refer to other requirements of mechanical and electrical work in Division 1 without exception.
- B. Visit to Site: Each contractor is directed to visit the site to verify dimensions and existing conditions of mechanical, electrical, and plumbing systems, and will thoroughly acquire information regarding grades, space conditions, limitations, and peculiarities of Construction required for the building and site and will give due consideration to same in preparation of proposal. No exceptions will be considered after award of a contract, nor will the contractor be entitled to any extra compensation for their failure to verify conditions at the site.
- C. Permits, Inspections, and Tests: All work is to be executed in compliance with, and each contractor is to observe and abide by, all applicable laws, regulations, ordinances, and rules of the national, state, county, and local governing agencies, or any other duly constituted public authority. Each contractor will, at all times, maintain proper facilities and provide safe access for inspection to all parts of the work and to the shops wherein the work is in preparation. No work will be enclosed or covered until approved by the architect, and should any work be enclosed or covered before all necessary inspections are completed, same will be opened for examination at the contractor's expense. All fees, licenses, tests, costs, etc. are contractor's responsibility.
- D. Rules, Regulations, and Codes:
  - 1. All material and equipment shall conform to the standards, where available, or the National Electrical Manufacturers Association (N.E.M.A.), National Fire Protection Association (N.F.P.A.), National Electrical Code (N.E.C.), and Underwriters Laboratories (U.L.).
  - 2. All work shall conform to all applicable federal, state, and local codes and utility companies' regulations.
- E. Workmanship and Installation: Walgreen Co. shall decide whether or not the finished work is satisfactory in their judgment. If any material and/or equipment has not been properly installed or finished, this contractor is obligated to replace the material or equipment wherever required and to reinstall the material or equipment in a manner entirely satisfactory at this contractor's expense (without additional cost to Walgreen Co.).
- F. Guarantee: Each contractor shall guarantee each complete system for a period of one (1) year from the date of acceptance of the work by Walgreen Co. to be free of defects of material and workmanship and that any faulty material or workmanship will be repaired or replaced without additional cost to Walgreen Co.
- G. Cooperation: There shall be complete cooperation with all trades in the matter of planning and execution of the work. Every reasonable effort shall be made to prevent conflict as to space requirements, dimensions, locations, leaving of opening, or other matters to obstruct or delay the work,

1.03 SUBSTITUTIONS

- A. Material Substitution: The name of an article or its make, as given in the specifications and drawings, is used to establish a standard for the guidance of the contractor. He may propose substitution of other material or equipment (unless specifically stated no substitution accepted).
- B. Should the contractor propose to furnish materials and equipment other than those specified, as permitted by the "acceptable alternate" clause, he shall submit a written request for any or all substitutions to Walgreen Co. Such a request shall be accompanied with complete descriptive and technical data for all items (manufacturer, brand name, catalog number, descriptive literature, and capacity tables), stating in each case what addition to or deduction from the main bid is to be made if such alternates are accepted.

- C. Where such substitutions alter the design or space requirements indicated on the plans, the contractor shall include all items of cost for the revised design and construction including cost of all allied trades involved.

Mail to: Walgreen Co.  
Facilities Planning Design & Engineering  
MS 1620  
106 Wilmot Road  
Deerfield, IL 60015

- D. Acceptance or rejection of the proposed substitutions shall be subject to the approval of Walgreen Co., and if specific approval in writing is not received, it is understood that the requirements as outlined in the Walgreen Co. plans are to be met.

END OF SECTION

SECTION 16400 - SERVICE AND DISTRIBUTION

PART I - GENERAL

1.01 DESCRIPTION

- A. Division 1, General Requirements and Section 16050, Basic Electrical Materials and Methods, shall be considered a part of these specifications.
- B. Codes, Ordinances, and Permits: All permits, licenses, stamping, approvals, and other arrangements for work shall be obtained by the electrical contractor. All expenses shall be included in the base bid. All electrical work shall be executed in strict accordance to the National Electrical Manufacturers Association (N.E.M.A.), National Board of Fire Underwriters (N.B.F.U.), National Electrical Code (N.E.C.), Underwriters Laboratories (U.L.), all electrical ordinances of the city, county, and state, and all others applicable to all codes and are of the minimum requirements. Any conflict between drawings, local power company, codes, etc., shall be brought to the attention of Walgreen Co. by this contractor at the time the bids are submitted.
- C. Scope of Work: The work covered by this specification shall include furnishing all labor, tools, material, equipment and services to construct and install the complete electrical system as shown on the accompanying plans and as specified herein. This work includes, but is not limited to, the following:
  - 1. Service entrance equipment bus to be standard aluminum alloy, including main distribution equipment, metering, secondary distribution equipment. Transformers with aluminum windings are acceptable. All wiring to be copper, Aluminum wiring, etc. is not approved, unless noted otherwise. The electrical utility company metering shall include a demand meter available for billing purposes.
  - 2. Complete distribution system bus of standard aluminum alloy for lighting and power, including the necessary transformers, distribution panel boards, disconnect switches, control switches, and receptacles, All wiring to be copper (feeders, branch circuits, etc.)
  - 3. Empty raceways as required.
  - 4. Receiving, handling, setting, and connecting motors and controls.
  - 5. Furnish and install a complete emergency lighting and/or exit lighting system if required by local codes.
  - 6. Furnish and install all conduit and wiring for temperature control system. Wiring to be copper.
  - 7. Complete copper distribution system for power, including the necessary transformers, feeders, distribution panelboards, branch circuits, lighting fixtures, control switches, and receptacles.

1.02 SUBMITTALS

- A. This contractor shall submit to Walgreen Co. product data for Power distribution equipment before starting work.

PART II - PRODUCTS

2.01 MAIN DISTRIBUTION PANELBOARDS

- A. Panelboards shall be manufactured by General Electric Co. Siemens OR Square D.



- B. Panelboards shall be molded case main circuit breaker type with factory installed service entrance type UL label. **Bus in all panelboards shall be standard aluminum alloy.** Panelboards and device contained therein shall have **fully rated** interrupting rating as shown on the drawings but **in no case less than 65,000 amperes rms.** Panelboard shall be labeled with UL short circuit withstand rating. Panelboards shall be assembled complete with bolt-on circuit breakers and spares. Circuit breakers shall be with thermal and magnetic trip elements and shall be quick-make, quick-break and trip indicating. Circuit breaker type, ampere rating and interrupting rating at common application voltages shall be marked on the circuit breaker in a manner that will be durable and visible after installation.
- C. Equipment shall be enclosed in cabinets with proper gutter supports and hinged doors. Provide a laminated bakelite nameplate on the front of each panel and one at each branch circuit device.
- D. Panelboard enclosures shall be marked per NEC 1999, Art. 110-22 to indicate the downstream lighting panelboards fed from MDP have been applied with a series combination interrupting rating. The following typically readily visible label shall be permanently installed by the manufacturer on panel MDP enclosure:

**"CAUTION"**  
**SERIES RATED SYSTEM**  
To Maintain UL Series Combination Interrupting Rating  
of Downstream Panelboards Replace Only with  
**Siemens 200 A Type FXD6 Circuit Breakers.**

- E. The following safety sign shall be provided on Panel MDP enclosure:

**"CAUTION"**  
**Only Qualified Technician Shall reclose Circuit Breaker**

- F. Panelboard shall be equipped with an integral transient voltage surge suppressor (TVSS). The TVSS shall be factory installed as close as possible to the neutral bus. The TVSS shall satisfy the following minimum requirements:
1. Surge current per mode: 60 KA
  2. Seven modes of protection
  3. Status LED's
  4. Audible alarm
  5. Dry contact for remote monitoring
  6. 5 year warranty

The following TVSS shall be utilized by the current vendors:

General Electric: TME120Y065PP (120/208) V,3 ph, 4W)

Siemens: XF120 (120/208 V, 3ph, 4 w)

Square D: FC21MA10 (120/208 V, 3ph, 4 w), FC31MA10 (120/240 V, 3 ph, 4 w).

2.02 PANELBOARDS

- A. Panelboards shall be manufactured by General Electric Co., Siemens or Square D.
- B. Panelboards shall be main lug only, assembled complete with circuit breakers and spares. **Bus in all panelboards shall be standard aluminum alloy.** Circuit breakers shall be rated at 10,000 amperes rms for 120/240 volt system. Panelboards shall also have additional series combination interrupting rating equal to the rating of the main distribution panel MDP by utilizing **UL tested and certified** circuit breaker combinations. Each lighting panelboard shall be marked per NEC 1999, Art. 110-22 and 240-86 to indicate that the series combination interrupting rating is applied. It shall also indicate **additional UL series combination interrupting rating** of the panelboard and type and size of replacement upstream and branch devices. The following typical readily visible label shall be permanently installed by the manufacturer on panel dead front:

**"CAUTION"**

**SERIES RATED SYSTEM**

To Maintain UL Series Combination Interrupting Rating  
of Downstream Panelboards Replace Only with

**Siemens Type Circuit Breakers.**

Short Circuit Rating: **65,000 Amperes RMS Symmetrical**  
Feeder Breaker in MDP: **Siemens 200 A Type**

- C. Circuit breakers shall be with thermal/magnetic trip, quick-make/quick-break and trip-free handles. For circuits that are not to be turned off, use handle lock-on. Breakers for either 120/240 or 120/208 volt shall be similar to Siemens, bolted in type as furnished in lighting panels. Panels shall have a minimum of 20% spare circuit breakers. Circuit breaker type, ampere rating and interrupting rating at common application voltages shall be marked on the circuit breaker in a manner that will be durable and visible after installation.
- D. Provide a laminate bakelite nameplate on the front of each panel.

2.03 DISCONNECT SWITCHES

- A. Disconnect switches shall be of positive action, quick-make/quick-break type with interlocking cover that prevents opening door when the external operating handle is in the "on" position. Switches outside the building shall be NEMA type 3R raintight enclosures. 240 volt switches shall be general duty, for voltages above 240 V switches shall be heavy duty.

2.04 OUTLET BOXES

- A. All pull boxes and junction boxes shall be standard galvanized steel type.

2.05 RACEWAYS

- A. Conduit, unless otherwise noted, shall be either rigid electrical metallic tubing (EMT) or rigid steel. All appropriate requirements for raceways of the authority having jurisdiction must be met.
- B. EMT to be used above grade, where permitted by code, except for service and in moist areas. EMT shall be thoroughly protected from corrosion by electro-galvanizing, hot dipped galvanizing, or an appropriate plating.
- C. Rigid steel conduit shall be used below subbase material (and above vapor barrier when required) of ground bearing floor slabs, where subject to damage, in moist or outdoor areas, and for underground installations- except where another type of raceway is specified. Rigid steel conduit, conduit bends, elbows, couplings, and nipples shall be hot-dipped galvanized. All conduit joints shall be cut square, threaded, reamed smooth, and drawn up tight. Bends or offsets shall be made

with standard conduit elbows, field bends made with an approved bender or hickey, or hub type conduit fittings. Number of bends per run shall conform to National Electrical Code limitations.

- D. Plastic conduit (PVC) and fittings are acceptable only below subbase material of ground bearing floor slabs and direct earth burial. Type PVC conduit must be UL listed for application and acceptable to the authority having jurisdiction. Minimum cover shall be as required by the NEC.
- E. Hot-dipped flexible steel conduit shall be used for connections to vibrating or motorized equipment. In areas where such connections will be exposed to oil, grease, water, or weather, flexible liquid-tight conduit shall be used.
- F. Conduit shall be sized as indicated on drawings, or required by the National Electrical Code for number and size of conductors installed. Minimum conduit size shall be 3/4 inch. Conduit shall be installed concealed in walls, piers, and above ceilings wherever possible, except as otherwise indicated. Install conduit exposed in stock areas, bailer rooms, or similar spaces. Conduit shall be separated at least 12 inches from parallel runs of steam or hot water piping.
- G. BX, nonmetallic cable (NMC/ROMEX) or pre-wired flexible conduit systems are not acceptable.
  - 1. Steel MC cable allowed above slab, color coded type W, when acceptable to the local code authority. Contact AFC @ (630) 968-8914 for more information
  - 2. MC cable shall be properly secured and supported at intervals not exceeding 6 feet, per NEC article 330.

## 2.06 CONDUCTORS

- A. All wire and cable for feeder and branch circuits shall conform to the requirements of the current edition of the National Electrical Code.
- B. All conductors shall be soft drawn copper and unless otherwise noted on the drawings, branch circuit conductors shall be type "THHN" and/or "THWN" insulated.

## 2.07 WIRING DEVICES

- A. Wiring devices shall include all general purpose receptacles and wall switches with high impact nylon cover plates, ivory in color. Receptacles (with high impact nylon cover plates) circuited from Panel LP-CR shall be brown in color.
- B. Light switches shall be ivory in color. Hubbell (A.C. rated) 1200 or 1220 series. Acceptable Alternate Manufacturers: Pass and Seymour (P&S), General Electric Co. (G.E. Co.) or Leviton.
- C. General purpose receptacles shall be ivory in color. Acceptable Manufacturers: Hubbell, Pass and Seymour (P&S), General Electric Co. (G.E. Co.) or Leviton.
- D. Transient voltage surge suppressor receptacles, brown in color, shall be as manufactured by Pass and Seymour (P&S). (No substitutions.)

## PART III - EXECUTION

### 3.01 INSTALLATION

- A. Temporary Light and Power: Electrical contractor shall furnish all labor and material required to provide temporary light and power. The general contractor shall pay all charges for electric current used for temporary lighting and power.
- B. Electrical Service: Electrical service and meters shall be installed and shall conform to the requirements of serving utility and codes. The type and voltage must be checked with serving

utility and any conflict between drawings and utility shall be immediately brought to the attention of Walgreen Co.

- C. Main Distribution Panelboards, Panelboards, and Cabinets: Electrical contractor shall furnish and install the main distribution boards, power and lighting panelboards, and cabinets.
- D. Disconnect and Safety Switches: Electrical contractor shall furnish and install fusible and/or non-fusible safety switches.
- E. Electric Heaters: Electrical contractor shall furnish and install all electric-type heaters.
- F. The electrical contractor shall install all starters, switches, and electrical equipment furnished under other contracts and shall furnish and install all disconnect switches and electrical that is required for the completion of the job.
- G. Conduit shall be installed concealed wherever possible, except where indicated otherwise indicated. Install the conduit exposed in stock areas, baler rooms, or similar spaces. Conduit shall be separated by at least 12 inches from parallel runs of steam or hot water piping.
- H. Conduits shall be continuous from outlet to outlet, from outlets to cabinets, pull, or junction boxes, and shall be secured to all boxes with locknuts and bushings (insulating type) in such a manner that each system shall be electrically continuous throughout. Conduit ends shall be capped to prevent entrance of foreign materials during construction. Conduits shall be securely and rigidly supported.
- I. Furnish and install pull boxes and junction boxes where necessary in the raceway system to facilitate conductor installation (allow for pulling tension and other National Electrical Code criteria).
- J. Receptacle Circuits:
  - 1. No wire smaller than # 12 shall be used for any branch circuit supplying convenience outlets. Branch circuit wiring shall be sized to limit the voltage drop to National Electrical Code requirements. All wire to be copper.
  - 2. Receptacle circuits shall be circuit breaker controlled.
  - 3. Receptacle for specific areas shall be of the size and type required.
- K. Lighting Circuits:
  - 1. No wire smaller than # 12 shall be used for any lighting branch circuit.
  - 2. Branch circuit wiring shall be sized to limit the voltage drop to National Electrical Code requirements.
  - 3. No 120 volt lighting shall exceed 1600 watts. No 277 volt lighting circuit shall exceed 3600 watts.
- L. Panel 'LP-CR' Feeder and branch circuit conductors must be run separate from other panel conductors. **DO NOT** run through a common raceway or trough.
- M. Lighting Controls: Certain circuits in lighting panels LP-1, LP-SP and LP-2 shall be remotely controlled to control individual lighting circuits. Power wiring between relays and circuit breakers shall be furnished by the manufacturer. Refer to lighting control system drawings E2.1A E2.1B, and E2.1C.
- N. Critical Loads: Provide lock-on hardware for all Critical loads (such as: cooler/freezer equipment, computers, cash registers, etc.).

- O. Temperature Control Wiring: All conduit and control wiring for mechanical equipment, unit heaters, circulating pumps, air conditioning equipment, and ventilation fans shall be installed by the electrical contractor, as directed and supervised by the temperature control contractor.
- P. Equipment Connections: All equipment provided under this section of the specifications or other sections of these specifications requiring electrical service, including all equipment furnished and installed by Walgreen Co. shall be completely wired and connected under this section.
- Q. Labeling: All circuits shall be labeled. Panel schedules shall be typed and securely mounted on the inside of the electrical panel box doors.
- R. Balancing: Contractor shall phase balance all panelboards such that loads on each phase are within 10% of each other.

3.02 TESTING

- A. After wires are in place and connected to devices and equipment, the system shall be tested for shorts and grounds. All hot wires, if shorted or grounded, shall be removed and replaced if trouble is within circuit.
- B. Any wiring device or apparatus furnished under this contract, if grounded or shorted shall be removed and the trouble rectified by replacing all defective parts of materials as directed.

END OF SECTION

SECTION 16500 - LIGHTING

PART I - GENERAL

1.01 DESCRIPTION

- A. Section 01010 Summary of work and Section 16050, Basic Electrical Materials and Methods, shall be considered part of these specifications.
- B. The electrical contractor shall furnish and install a complete lighting system consisting of, but not limited to, fixtures complete with ballasts, lamps, sockets, auxiliaries, and electrical wiring.
- C. The electrical contractor shall furnish all labor and materials required to install all lighting fixtures including those furnished by others.
- D. Fixture Labels: U.L. listed and labels I.B.E.W.-A.F. of L.
- E. No substitution of light fixtures will be accepted.
- F. Outdoor Lighting - Building and Parking Areas: Provide 5.0 maintained average foot candle level with an average to minimum uniformity ratio of 3:1. Submit computer calculations showing conformance (point-by-point, 10 feet on center) for both new and existing buildings. Refer to photometric plan provided in civil drawings.

1.02 SUBMITTALS

- A. This contractor shall submit to Walgreen Co. product data for all light fixtures before starting work.

1.03 GUARANTEE

- A. Provide a one (1) year guarantee against mechanical defects in manufacture.

PART II - PRODUCTS

2.01 LIGHT FIXTURES

- A. Light fixtures shall be as listed on the lighting fixture schedule.
- B. Lamps shall be as listed on the lighting fixture schedule.

PART III - EXECUTION

3.01 INSTALLATION

- A. Install lighting fixtures and accessories in accordance with the manufacturers' instructions. See section 09510, Part III, paragraph 3.02.B.
- B. Exit Lights and Emergency Lighting System: Furnish and install a complete emergency lighting and/or exit lighting system. System and provisions shall comply with local requirements and codes.
- C. Exterior Signs:
  - 1. Exterior signs shall be furnished and installed by Walgreen Co. sign contractor, who shall make final connections to same.

2. The electrical contractor shall provide outlets from Walgreen Co. sign panel, "LP-SP," to the exterior face of the building or canopy for exterior signage.

D. Pylon Sign: The electrical contractor shall furnish and install electrical requirements to the base of pylon sign from Walgreen Co. sign panel, "LP-SP," for lighting required, and from separate panel for pylon reader board.

### 3.02 TESTING

A. Any lighting fixture furnished under this contract, if grounded or shorted, shall be removed and the trouble rectified by replacing all defective parts of materials as directed. The system shall be tested for shorts and grounds. All hot wires, if shorted or grounded, shall be removed and replaced if trouble is within circuit.

END OF SECTION

SECTION 16600 - SPECIAL SYSTEMS

PART I - GENERAL

1.01 DESCRIPTION

- A. Division 1, General Requirements, and Section 16050, Basic Electrical Materials and Methods, shall be considered a part of these specifications.
- B. Furnish and install, complete with all related items, the preparation rough-in wiring and partial installation for the following special systems:
  - 1. Ethernet
  - 2. Satellite
  - 3. Burglar alarm
  - 4. Closed circuit television (CCTV)
  - 5. Telephone
  - 6. Sound
- C. All work shall be done under the supervision of an accredited installation company in the low voltage systems specified.
- D. This contractor shall furnish all labor, materials, tools, and the necessary appurtenances to install the special system.
- E. For plenum ceiling installations, all appropriate requirements for raceways and cable of the authority having jurisdiction shall be met.
- F. Install the aforementioned special systems consisting of conduits, boxes, wiring, and equipment.
- G. Except where a conduit only system is specified, the system shall be completely wired (in conduit except where otherwise shown or specified) and operating, any items required to achieve this shall be provided whether or not they are specifically mentioned herein. Wiring shall be in accordance with the manufacturer's recommendations and/or wiring diagrams approved by Walgreen Co.
- H. Wherever conduit is required or used, it shall be concealed and outlets shall be flush except as otherwise directed. "Conduit only" system(s) shall have nylon fish wire for future installation of wiring.
- I. Tests where required shall be made in cooperation with the representatives of Walgreen Co. as directed. The contractor shall provide all labor and materials required for such tests.
- J. All wiring within pieces of equipment shall be point-to-point with appropriate terminal connections for every wire and component termination.

PART II - PRODUCTS (NOT USED)

PART III - EXECUTION

3.01 ETHERNET SYSTEM INSTALLATION

- A. Ethernet cables are furnished and installed by Walgreen Co. Contractor. For precautions, wiring methods, procedures, and pertinent information refer to the drawings. "The comlink" is a specialty cable referenced within the Ethernet system plans and details.



3.02 SATELLITE ANTENNA SYSTEM INSTALLATION

- A. The satellite antenna system, including all cables, interfacilities link (IFL), and other related cables to be furnished by Walgreens Co. and installed by the electric contractor.
- B. Final connections to all equipment shall be the responsibility of Walgreen Co.
- C. A.C. power and cable rough-in provisions shall be the responsibility of this contractor.

3.03 BURGLAR ALARM SYSTEM INSTALLATION

- A. Furnish and install cables to the Walgreen-furnished burglar alarm system.
- B. Final connections of the equipment and devices shall be the responsibility of Walgreen Co.
- C. For specifications of cable, refer to the criteria drawings. Cables shall be furnished as a landlord responsibility.

3.04 COVERT CLOSED CIRCUIT TV (CCTV) SYSTEM INSTALLATION

- A. Walgreens Contractor to furnish and install cable and connectors. For specification of cable, refer to the criteria drawings.
- B. Walgreens Contractor shall provide all final connections under the direction of Walgreen Co.

3.05 TELEPHONE SYSTEM INSTALLATION

- A. The furnishing and installing of telephone equipment and instruments shall be the responsibility of Walgreen Co.
- B. All public phones shall be provided with conduit and wiring from telephone equipment location to the telephone outlet.
- C. Provide 200 watt outlet (fed from panel LP-CR) located at the telephone equipment location.
- D. Coordinate with the local telephone company on installation, details, schedule, etc.
- E. Provide the conduit from the telephone equipment location to the property line for the utility company's incoming service lines.
- F. Walgreens Contractor shall furnish and install all telephone wiring. Provide a three (3) pair telephone cable from the telephone equipment location to each telephone outlet. For specification of telephone cable, refer to the criteria drawings.

3.06 SOUND SYSTEM INSTALLATION

- A. Sound system (music and paging) equipment shall be furnished by Walgreens and installed by Walgreens contractor.
- B. Walgreens contractor shall furnish and install all sound system wiring. For specification of sound system wiring, refer to the criteria drawings.
- C. For designs involving plenum ceilings, conduit and back boxes are required.

END OF SECTION

SECTION 16720 - FIRE ALARM SYSTEM

PART I - GENERAL

1.01 STANDARDS

- A. Furnish and install complete, electrically supervised, closed circuit fire alarm system when required by the local authority having jurisdiction.
- B. The fire alarm system shall conform to the requirements in this specification, Section 16A, Electrical General Conditions, and comply with the latest adopted edition of the following:
  - 1. NFPA 72 (Chapters 1-7 as applicable)
  - 2. NFPA 90A
  - 2. Local building & fire codes (as applicable)
  - 3. The International Building Code
- C. All equipment comprising the fire alarm system shall be listed, labeled, or approved by Underwriters Laboratories, Inc. for use as fire alarm equipment.

1.02 DESCRIPTION OF WORK

- A. Provide a complete, supervised fire alarm system including conduit, wire, boxes, control panel, smoke detectors, pull stations, audio/visual signal devices, lock boxes, and sprinkler waterflow and supervisory switches. The sprinkler switches shall be provided under Section 15, Work (See letter H - under 2.01 Fire Alarm Devices), and connected to the fire alarm system by the fire alarm supplier.
- B. Walgreens' preferred fire alarm vendors are ADT Security Services, Inc. @ (800) 640-9390 and F.E. Moran @ (586) 228-5788. (See drawing E1.6 for fire alarm vendor territories). It is mandatory that they monitor the fire alarm system when required by the local code authority. They will provide a full turnkey price on the fire alarm system. They will require the 8 ½ x 11 layout shown on the E1. 6 be faxed to them (ADT @ (630) 455-0139 and F. E. Moran @ (586) 228-5758), please include your company letterhead, contact person, store number, city and state for each new location. The fire alarm vendor needs at least five days to provide fire alarm price. Their Fire Supervisors will contact the local authority having jurisdiction to determine the exact minimum requirements. All materials and labor required to meet local fire safety regulations, codes, adopted ordinances, and local requirements of the local authority having jurisdiction. Whether enumerated herein, shown on plans, or not, shall be furnished.
- C. The complete fire alarm system, including installation, is the responsibility of the Contractor. Contractor to consult with local Fire Officials in order to determine the complete system.
- D. Duct smoke detectors (SD) are furnished and factory installed with some HVAC units. Refer to section 15500 of the specifications and drawings for details.
- E. The Fire Alarm Contractor shall provide power wiring (24 volt) to all smoke detectors. The Fire Alarm Contractor shall also provide an operational remote test/reset station for all duct smoke detectors. Where an approved fire alarm system is installed in the building, all duct smoke detectors shall be connected to the fire alarm system as required by NFPA. The Fire Alarm Contractor shall wire and arrange the HVAC units to shutdown on an alarm output from the fire alarm panel, when required by code.
- F. The Fire Alarm Contractor may use the SDs that were factory installed on the HVAC units. The Fire Alarm Contractor shall supplement those factory installed smoke detectors as necessary to provide a complete operating fire alarm system that fully complies with applicable codes, ordinances, the local fire department, local inspectors and other authorities having jurisdiction.

- G. If approved by the local authority having jurisdiction, the fire alarm system supplier may eliminate conduit and run approved type open wiring above suspended ceilings and within exposed barjoists. Where wiring is required down exposed walls in warehouse or stock areas, wiring is to be installed in EMT to the height of 15 feet above floor level. All wiring supports and installation shall conform to the National Electrical Code.
- H. If Walgreens' preferred vendors (ADT Services, Inc. Or F. E. Moran) do not install the fire alarm system, they must be contacted at least eight (8) weeks prior to final inspection to contract the commencement of the fire alarm monitoring. **There is a program and testing fee associated with this service, to ADT Security and F. E. Moran based upon the amount of lead time given.** If ADT or F. E. Moran do not perform the installation of the fire alarm system, the following items are required by the Fire Alarm supplier:
1. Reprogram contract must be signed and returned a minimum of 60 days before scheduling on site.
  2. The entire fire alarm installed completely, includes wiring to fire panel, wiring the phone jacks to panel and a full acceptance test by the fire contractor.
  3. Phone lines must be active to the site before scheduling ADT to commence fire alarm monitoring.
  4. Fire Alarm supplier is required to meet fire alarm vendor (ADT or F. E. Moran) on site with copies of permit, approved drawings with riser diagram, battery calculations, voltage drops, wire legend and any other requirements the Authority having Jurisdiction requires. A Certificate of Completion (use NFPA 72 form) form filled out before ADT or F. E. Moran reprograms the fire control for monitoring.
  5. Fire Alarm supplier is responsible for Final Fire Inspection, after ADT or F. E. Moran is monitoring the location. **There is no re-program and test fee for the fire alarm system if ADT or F. E. Moran does the turnkey system.**
- I. The electrical contractor shall provide power to and the shut down associated with duct detectors (see 2.01 - letter G).

### 1.03 QUALITY ASSURANCE

- A. Provide products which have been tested, listed, and labeled by Underwriters Laboratories, Inc., which comply with NEMA standards, and are approved by Factory Mutual Research.

## PART II - PRODUCTS

### 2.01 FIRE ALARM DEVICES

- A. A fire alarm control panel shall be Silent Knight, SK-5208, Fire Lite MS-9200UDSL, Fire Lite MS-UD, Fire Lite MS-10UD, including dual battery harness, dual phone line switches, and two 8-foot telephone cords, Telephone jacks (if required) shall be RJ31X, ground GND. Telephone lines (2) are supplied by the Walgreens. The fire alarm control shall include battery backup, BP-BPI7-12-T2, BP-BP7-12-T2, BP-BP26-12-T2; Fire Lite BB- 17, Fire Lite BB55 (if required); Silent Knight model 5217, zone expander module, Silent Knight model 5495, Fire Lite FCPS24F, (if required), and direct connect module, Silent Knight model 5235 (if required).
- B. Fire alarm annunciator shall be Remote keypad/Annunciator, Silent Knight model 5235, Fire Lite LCD80F, or LED-10 (if required)..
- C. Manual pull station shall be Fire Lite, model BG12LX, BG12 (f required).
- D. Fire alarm indicating devices shall be horn/strobe, Wheelock AS Series, MT Series, and RSS Series (if required).

- E. Smoke detectors shall be Sentrol SE-429CT, Sentrol SE-449CT, Fire Lite SD355. Included shall be one (1) End of Line power supervision relay, Silent Knight model EOL-1224RLY for each zone of smoke detectors (if required).
- F. Heat detectors shall be Edwards ED-280B-PL, or Fire Lite H355 (if required).
- G. Duct smoke detector, supplied and installed by the mechanical contractor, shall be System Sensor model DH100ACDLP. Included with each detector shall be one (1) Remote Indicator/Test Switch, System Sensor model RTS451, one (1) set of sampling tubes, System Sensor models ST5 or ST10. Included shall be one (1) End of Line power supervision relay, Silent Knight model 160150, for each zone of detectors. Acceptable alternate manufacturer: GE/Telaire Series TSD. A remote disconnect switch (AC-RP44) shall be installed in the electrical room for the duct smoke detectors. This switch will only disconnect monitoring of the alarm/supervisory signal to the Fire Alarm Control Panel, and will not affect the function of the duct smoke detector. Instructions shall be mounted on the front of the surface mount box.
- H. The fire-suppression system contractor shall provide waterflow and valve tamper switches.
- I. Recessed Knox Box #3200-R, with UL listed alarm tamper switch, dark bronze finish. Recessed Knox Box shall be installed 6'-0" above top of foundation, near main entry as directed by local fire officials.

### PART III - EXECUTION

#### 3.01 INSTALLATION

- A. The fire alarm control panel shall be mounted where shown on drawings. A dedicated 120 VAC, 20 ampere circuit, termination to the Fire alarm control panel shall be provided by the electrical contractor. Coordinate connection to the telephone lines (2) provided by owner. The remote keypad/annunciator shall be mounted where required by local code and/or authority having jurisdiction.
- B. The fire alarm system shall be installed under the supervision of the systems' supplier. Prior to final inspection, the supervisor shall test all operating features and consequently make all necessary adjustments and corrections to the equipment comprising the fire alarm system provided as work under this section.
- C. Install complete wiring system as required for the fire alarm system. Conceal wiring except in stockrooms and areas where other conduit and piping are exposed.
- D. Code all conductors appropriately and permanently, by number and/or color, for the purpose of identification and servicing of the fire alarm system within the control panel, and at each point of termination outside the control panel.
- E. Local fire authorities may require the addition and relocation of certain devices. Contractor to review all device locations with the proper authorities prior to installation. The location of strobes may require the coordination of the fixture plan, so they are visible as per the local authorities.

END OF SECTION

