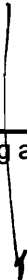



Item	Agency # (Qualif.)	Scope
1. Fabricator Certification/ Quality Control Procedures <input checked="" type="checkbox"/> Fabricator Exempt		<i>Inspect shop fabrication and quality control procedures for wood truss plant.</i>
2. Material Grading  MSE		
3. Connections  		
4. Framing and Details  		
5. Diaphragms and Shearwalls  MSE		<i>Inspect size, configuration, blocking and fastening of shearwalls and diaphragms. Verify panel grade and thickness.</i>
6. Prefabricated Wood Trusses		<i>Inspect the fabrication of wood trusses.</i>
7. Permanent Truss Bracing  MSE		
8. Other:		

Item	Agency # (Qualif.)	Scope
1. Wall Panels & Veneers  MSE		
2. Suspended Ceilings  —		
3. Access Floors  —		
4. Other:  —		



CITY OF PORTLAND  
BUILDING CODE CERTIFICATE  
389 Congress St., Room 315  
Portland, Maine 04101

ACCESSIBILITY CERTIFICATE

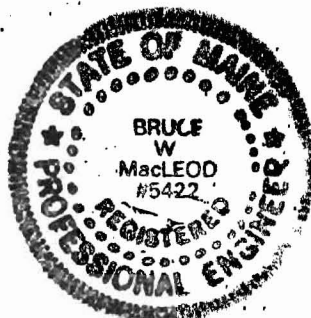
Designer: Bruce W. MacLeod, PE

Address of Project: 1080 Forest Ave

Nature of Project: New coffee shop (retail)

The technical submissions covering the proposed construction work as described above have been designed in compliance with applicable referenced standards found in the Maine Human Rights Law and Federal Americans with Disability Act.

(SEAL)



Signature: Bruce W. MacLeod

Title: Professional Engineer

Firm: MacLeod Structural Engineers, PA

Address: 404 Main St.

Gorham, Me 04038

Phone: 207-839-0980

**NOTE:** If this project is a new Multi Family Structure of 4 units or more, this project must also be designed in compliance with the Federal Fair Housing Act. On a separate submission, please explain in narrative form the method of compliance.



CITY OF PORTLAND  
BUILDING CODE CERTIFICATE  
389 Congress St., Room 315  
Portland, Maine 04101

TO: Inspector of Buildings City of Portland, Maine  
Department of Planning & Urban Development  
Division of Housing & Community Service

FROM: Bruce W. MacLeod, P.E.

RE: Certificate of Design

DATE: 8/30/06

These plans and / or specifications covering construction work on:

STARBUCKS 1080 FOREST AVE.

Have been designed and drawn up by the undersigned, a Maine registered Architect /  
Engineer according to the 2003 International Building Code and local amendments.



(SEAL)

Signature: Bruce W MacLeod

Title: Professional Engineer

Firm: MacLeod Structural Engineers, PA

Address: 404 MAIN St. Gorham, Me

As per Maine State Law:

\$50,000.00 or more in new construction, repair  
expansion, addition, or modification for  
Building or Structures, shall be prepared by a  
registered design Professional.

FROM DESIGNER: Bruce W MacLeod

DATE: 8/30/06

Job Name: Starbucks

Address of Construction: 1080 Forest Ave.

2003 International Building Code

Construction project was designed according to the building code criteria listed below:

Building Code and Year 2003 IBC Use Group Classification(s) A-2

Type of Construction V

Will the Structure have a Fire suppression system in Accordance with Section 903.3.1 of the 2003 IRC NO

Is the Structure mixed use? NO if yes, separated or non separated (see Section 302.3)

Supervisory alarm system? NO Geotechnical/Soils report required? (See Section 1802.2) NO

STRUCTURAL DESIGN CALCULATIONS

NO Submitted for all structural members (106.1, 106.1.1)

DESIGN LOADS ON CONSTRUCTION DOCUMENTS (1603)

Uniformly distributed floor live loads (7603.11, 1607)

Floor Area Use	Loads Shown
Retail	100 psf

- Live load reduction (1609.1.1, 1607.8, 1607.10)
- Roof live loads (1603.1.2, 1607.11)
- 60 Roof snow loads (7603.7.3, 1606)
- 42 Ground snow load,  $P_g$  (1608.2)
- 1.0 If  $P_g > 10$  psf, flat-roof snow load,  $P_f$  (1608.5)
- 1.0 If  $P_g > 10$  psf, snow exposure factor,  $C_e$  (Table 1608.3.1)
- 1.0 If  $P_g > 10$  psf, snow load importance factor,  $I_s$  (Table 1604.6)
- 1.0 Roof thermal factor,  $C_t$  (Table 1608.3.2)
- NA Sloped roof snowload,  $P_s$  (1608.4)

- Wind loads (1603.1.4, 1609)
- 1609.1.1 Design option utilized (1609.1.1, 1609.6)
- 100 Basic wind speed (1609.3)
- 11, 1.0 Building category and Wind Importance factor,  $I_w$  (Table 1604.6, 1609.5)
- B Wind exposure category (1609.4)
- 0.18 Internal pressure coefficient (ASCE 7)
- Component and adding pressures (1609.1.1, 1609.4.2.2)
- Main force wind pressures (7603.1.1, 1609.5.2.1)

- C Seismic design category (1616.3)
- I-K Basic seismic-force-resisting system (Table 1617.3.2)
- 7.4.5 Response modification coefficient,  $R$ , and deflection amplification factor,  $C_d$  (Table 1617.3.2)
- 1617.5 Analysis procedure (1616.6, 1617.5)
- 0.06 Design base shear (1617A, 1617.5.1)

Earthquake design data (1609.1.5, 1614-1629)

- 1617.5 Design option utilized (1614.1)
- 1 Seismic use group ("Category") (Table 1604.5, 1616.2)
- 0.10 Spectral response coefficients,  $S_{DS}$  &  $S_{D1}$  (1615.1)
- D Site class (1615.1.5)

- Flood loads (1603.1.5, 1612)
- Flood hazard area (1612.3)
- Elevation of structure
- Other loads
- Concentrated loads (1607.4)
- Partition loads (1607.5)
- Impact loads (1607.8)
- Misc. loads (Table 1607.9, 1607.8.1, 1607.7, 1607.12, 1607.13, 1610, 1611, 1604)

PLAN received 6/21/06 x 6/27/06

Applicant: Stephen Marugan

Date: 3/9/06

Address: 1080 Forest Ave

C-B-L: 146-B-14 & 15

CHECK-LIST AGAINST ZONING ORDINANCE

~~Permit #~~

Date -

Zone Location - B2: R5 in CA

Interior or corner lot - <sup>Primary</sup>

Proposed Use/Work - Drive Thru - (unNAMED)

Sewage Disposal - City

Access to named Forest Ave  
ACES toward 10 Land

Lot Street Frontage - 50' min

Front Yard - shall not exceed the average depth of lots on either side - if exceeds 10' (yes)  
14-185 (c) <sup>max</sup> NOTHING LANDSCAPING of at least 41 (3' scaled) <sup>39' AVERAGE ALLOW 37' shown</sup>

Rear Yard - 20' min (abuts residential) - 60' scaled

Side Yard - 10' (abuts residential) - 33.5' shown 36 scaled

Side yard side st - 10' min - 22' scaled

Projections - Drive Thru window

Width of Lot - None

Height - 45' max - 1 story proposed

Lot Area - 10,000 sq ft min - 17,993.5 sq ft given

Lot Coverage Impervious Surface - 80% max - 79% given  
20% = or at least 3,598.7 sq ft - quick calcs show 1,666 sq ft

Area per Family - N/A

Off-street Parking - 26 x 68 = 1768 sq ft / 150 = 11.78 or 12 parking spaces - 22 shown 21

Loading Bays -

Site Plan - Conditional use to PB's site plan # 2006-0036

Shoreland Zoning/ Stream Protection - <sup>Approved 7/11/06</sup> N/A

Flood Plains - Panel 7 Zone X

received  
Deep  
to show

in the  
text

**CITY OF PORTLAND, MAINE  
DEVELOPMENT REVIEW APPLICATION  
PLANNING DEPARTMENT PROCESSING FORM  
Zoning Copy**

2006-0036

Application I. D. Number

2/21/2006

Application Date

**Building with Drive-Thru**

Project Name/Description

**Mardigan Stephen E**

Applicant

**460 Baxter Blvd , Portland, ME 04103**

Applicant's Mailing Address

Consultant/Agent

**Applicant Ph: (207) 772-5555 Agent Fax:**

Applicant or Agent Daytime Telephone, Fax

**1080 - 1080 Forest Ave, Portland, Maine**

Address of Proposed Site

**146 B014001**

Assessor's Reference: Chart-Block-Lot

Proposed Development (check all that apply):  New Building  Building Addition  Change Of Use  Residential  Office  Retail  
 Manufacturing  Warehouse/Distribution  Parking Lot  Other (specify) \_\_\_\_\_

**1,700 s.f.**

Proposed Building square Feet or # of Units

Acreeage of Site

**B2**

Zoning

**Check Review Required:**

- |  |   |  |  |
|--|---|--|--|
| <input checked="" type="checkbox"/> Site Plan<br>(major/minor) | <input type="checkbox"/> Subdivision<br># of lots _____ | <input type="checkbox"/> PAD Review            | <input type="checkbox"/> 14-403 Streets Review   |
| <input type="checkbox"/> Flood Hazard                          | <input type="checkbox"/> Shoreland                      | <input type="checkbox"/> Historic Preservation | <input type="checkbox"/> DEP Local Certification |
| <input type="checkbox"/> Zoning Conditional<br>Use (ZBA/PB)    | <input type="checkbox"/> Zoning Variance                | <input type="checkbox"/> Other _____           |  |

Fees Paid: Site Pla \$400.00 Subdivision \_\_\_\_\_ Engineer Review \_\_\_\_\_ Date 2/22/2006

**Zoning Approval Status:**

Reviewer Marge S. - Inop.

- Approved  Approved w/Conditions  
See Attached  Denied

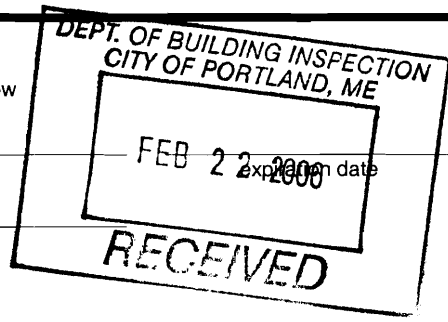
Approval Date \_\_\_\_\_ Approval Expiration \_\_\_\_\_ Extension to \_\_\_\_\_  Additional Sheets  
Attached

Condition Compliance \_\_\_\_\_ signature \_\_\_\_\_ date \_\_\_\_\_

**Performance Guarantee**  Required\*  Not Required

\* No building permit may be issued until a performance guarantee has been submitted as indicated below

- |   |                            |  |                             |
|---|----------------------------|--|-----------------------------|
| <input type="checkbox"/> Performance Guarantee Accepted     | _____ date _____           | _____ amount _____                                 |                             |
| <input type="checkbox"/> Inspection Fee Paid                | _____ date _____           | _____ amount _____                                 |                             |
| <input type="checkbox"/> Building Permit Issue              | _____ date _____           |  |                             |
| <input type="checkbox"/> Performance Guarantee Reduced      | _____ date _____           | _____ remaining balance _____                      | _____ signature _____       |
| <input type="checkbox"/> Temporary Certificate of Occupancy | _____ date _____           | <input type="checkbox"/> Conditions (See Attached) | _____ expiration date _____ |
| <input type="checkbox"/> Final Inspection                   | _____ date _____           | _____ signature _____                              |                             |
| <input type="checkbox"/> Certificate Of Occupancy           | _____ date _____           |  |                             |
| <input type="checkbox"/> Performance Guarantee Released     | _____ date _____           | _____ signature _____                              |                             |
| <input type="checkbox"/> Defect Guarantee Submitted         | _____ submitted date _____ | _____ amount _____                                 | _____ expiration date _____ |
| <input type="checkbox"/> Defect Guarantee Released          | _____ date _____           | _____ signature _____                              |                             |





CITY OF PORTLAND  
BUILDING CODE CERTIFICATE  
389 Congress St., Room 315  
Portland, Maine 04101

TO: Inspector of Buildings City of Portland, Maine  
Department of Planning & Urban Development  
Division of Housing & Community Service

FROM: Bruce W. MacLeod, P.E.

RE: Certificate of Design

DATE: 8/30/06

Revised 11/16/06

These plans and / or specifications covering construction work on:

STARBUCKS 1080 FOREST AVE.

Have been designed and drawn up by the undersigned, a Maine registered Architect / Engineer according to the 2003 International Building Code and local amendments.

(SEAL)

Signature: Bruce W MacLeod

Title: Professional Engineer

Firm: MacLeod Structural Engineers, PA

Address: 404 MAIN St. Gorham, Me

As per Maine State Law:

\$50,000.00 or more in new construction, repair expansion, addition, or modification for Building or Structures, shall be prepared by a registered design Professional.





CITY OF PORTLAND  
BUILDING CODE CERTIFICATE  
389 Congress St., Room 315  
Portland, Maine 04101

ACCESSIBILITY CERTIFICATE

Designer: Bruce W. MacLeod, PE  
Address of Project: 1080 Forest Ave  
Nature of Project: New coffee shop (retail)

The technical submissions covering the proposed construction work as described above have been designed in compliance with applicable referenced standards found in the Maine Human Rights Law and Federal Americans with Disability Act.

(SEAL)



Signature: Bruce W. MacLeod  
Title: Professional Engineer  
Firm: MacLeod Structural Engineers, PA  
Address: 404 Main St.  
Gorham, Me 04038  
Phone: 207-839-0900

NOTE: If this project is a new Multi Family Structure of 4 units or more, this project must also be designed in compliance with the Federal Fair Housing Act. On a separate submission, please explain in narrative

FROM DESIGNER: Bruce W MacLeod

DATE: 8/30/04

Job Name: Starbucks

Address of Construction: 1080 Forest Ave.

**2003 International Building Code**

Construction project was designed according to the building code criteria listed below:

Building Code and Year 2003 IBC Use Group Classification(s) A-2

Type of Construction V

Will the Structure have a Fire suppression system in Accordance with Section 903.3.1 of the 2003 IRC NO

Is the Structure mixed use? NO if yes, separated or non separated (see Section 302.3)

Supervisory alarm system? NO Geotechnical/Soils report required? (See Section 1802.2) NO

**STRUCTURAL DESIGN CALCULATIONS**

NO Submitted for all structural members (106.1, 106.1.1)

**DESIGN LOADS ON CONSTRUCTION DOCUMENTS (1603)**

Uniformly distributed floor live loads (7603.3.1, 1607)

Floor Area Use	Loads Shown
<u>Retail</u>	<u>100psf</u>
_____	_____
_____	_____
_____	_____
_____	_____

Live load reduction (1608.1.1, 1607.8, 1607.10) -

Roof live loads (1603.1.2, 1607.11) -

Roof snow loads (7603.7.3, 1608) -

Ground snow load,  $P_g$  (1608.2) 60

If  $P_g > 10$  psf, flat-roof snow load,  $P_f$  (1608.5) 42

If  $P_g > 10$  psf, snow exposure factor,  $C_e$  (Table 1608.3.1) 1.0

If  $P_g > 10$  psf, snow load importance factor,  $I_s$  (Table 1604.6) 1.0

Roof thermal factor,  $C_t$  (Table 1608.6.2) 1.0

Sloped roof snowload,  $P_s$  (1608.4) NA

Wind loads (1603.1.4, 1609)

1609.1.1 Design option utilized (1609.1.1, 1609.6)

100 Basic wind speed (1609.3)

II, 1.0 Building category and wind importance factor,  $I_w$  (Table 1604.6, 1609.5)

B Wind exposure category (1609.4)

0.18 Internal pressure coefficient (ASCE 7)

\_\_\_\_\_ Component and cladding pressures (1609.1.1, 1609.4.2.2)

\_\_\_\_\_ Main force wind pressures (7603.1.1, 1609.6.2.1)

C Seismic design category (1612.2)

I-K Basic seismic-force-resisting system (Table 1617.8.2)

1.45 Response modification coefficient,  $R$ , and deflection amplification factor,  $C_d$  (Table 1617.8.2)

1617.5 Analysis procedure (1615.2, 1617.5)

0.06 Design base shear (1617.4, 1617.5.1)

**Earthquake design data (1603.1.5, 1614-1628)**

1617.5 Design option utilized (1614.1)

I Seismic use group ("Category") (Table 1604.5, 1616.2)

0.10 Spectral response coefficients,  $S_{DS}$  &  $S_{D1}$

Flood loads (1603.1.5, 1612)

\_\_\_\_\_ Flood hazard area (1612.3)

\_\_\_\_\_ Elevation of structure

Other loads

\_\_\_\_\_ Concentrated loads (1607.4)

\_\_\_\_\_ Partition loads (1607.5)

\_\_\_\_\_ Impact loads (1607.8)

\_\_\_\_\_ Misc. loads (Table 1607.8, 1607.8.1, 1607.7, 1607.12, 1607.13, 1610, 1611, 1604)

# Statement of Special Inspections

Project: Starbucks  
Location: 1080 Forest Ave Portland, Me.  
Owner: Stephen Mordigan  
Design Professional in Responsible Charge: Bruce W. MacLeod, PE

This *Statement of Special Inspections* is submitted as a condition for permit issuance in accordance with the Special Inspection and Structural Testing requirements of the Building Code. It includes a schedule of Special Inspection services applicable to this project as well as the name of the Special Inspection Coordinator and the identity of other approved agencies to be retained for conducting these inspections and tests. This *Statement of Special Inspections* encompass the following disciplines:

- Structural       Mechanical/Electrical/Plumbing  
 Architectural       Other: \_\_\_\_\_

The Special Inspection Coordinator shall keep records of all inspections and shall furnish inspection reports to the Building Official and the Registered Design Professional in Responsible Charge. Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible Charge. The Special Inspection program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted to the Building Official and the Registered Design Professional in Responsible Charge.

A *Final Report of Special Inspections* documenting completion of all required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted prior to issuance of a Certificate of Use and Occupancy.

Job site safety and means and methods of construction are solely the responsibility of the Contractor.

Interim Report Frequency: Monthly or  per attached schedule.

Prepared by:

Bruce W. MacLeod

(type or print name)

Bruce W MacLeod

Signature

8/30/06

Date



Owner's Authorization:

Building Official's Acceptance:

Signature

Date

Signature

Date

# Quality Assurance Plan

---

## Quality Assurance for Seismic Resistance

Seismic Design Category    **C**

Quality Assurance Plan Required (Y/N)    **No**

Description of seismic force resisting system and designated seismic systems:

*Load bearing Light Framed Shear Walls - wood*

## Quality Assurance for Wind Requirements

Basic Wind Speed (3 second gust)    **100**

Wind Exposure Category                    **B**

Quality Assurance Plan Required (Y/N)    **N**

Description of wind force resisting system and designated wind resisting components:

Statement of Responsibility    **N/A**

Each contractor responsible for the construction or fabrication of a system or component designated above must submit a Statement of Responsibility.

# Qualifications of Inspectors and Testing Technicians

---

The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official. The credentials of all Inspectors and testing technicians shall be provided if requested.

## Key for Minimum Qualifications of Inspection Agents:

When the Registered Design Professional in Responsible Charge deems it appropriate that the individual performing a stipulated test or inspection have a specific certification or license as indicated below, such designation shall appear below the *Agency Number* on the Schedule.

PE/SE	Structural Engineer – a licensed SE or PE specializing in the design of building structures
PE/GE	Geotechnical Engineer – a licensed PE specializing in soil mechanics and foundations
EIT	Engineer-In-Training – a graduate engineer who has passed the Fundamentals of Engineering examination

### American Concrete Institute (ACI) Certification

ACI-CFTT	Concrete Field Testing Technician – Grade 1
ACI-CCI	Concrete Construction Inspector
ACI-LTT	Laboratory Testing Technician – Grade 1&2
ACI-STT	Strength Testing Technician

### American Welding Society (AWS) Certification

AWS-CWI	Certified Welding Inspector
AWS/AISC-SSI	Certified Structural Steel Inspector

### American Society of Non-Destructive Testing (ASNT) Certification

ASNT	Non-Destructive Testing Technician – Level II or III.
------	---

### International Code Council (ICC) Certification

ICC-SMSI	Structural Masonry Special Inspector
ICC-SWSI	Structural Steel and Welding Special Inspector
ICC-SFSI	Spray-Applied Fireproofing Special Inspector
ICC-PCSI	Prestressed Concrete Special Inspector
ICC-RCSI	Reinforced Concrete Special Inspector

### National Institute for Certification in Engineering Technologies (NICET)

NICET-CT	Concrete Technician – Levels I, II, III & IV
NICET-ST	Soils Technician - Levels I, II, III & IV
NICET-GET	Geotechnical Engineering Technician - Levels I, II, III & IV

### Exterior Design Institute (EDI) Certification

EDI-EIFS	EIFS Third Party Inspector
----------	----------------------------

### Other

---

# Schedule of Inspection and Testing Agencies

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Soils and Foundations  | <input type="checkbox"/> Spray Fire Resistant Material         |
| <input checked="" type="checkbox"/> Cast-in-Place Concrete | <input checked="" type="checkbox"/> Wood Construction          |
| <input checked="" type="checkbox"/> Precast Concrete       | <input type="checkbox"/> Exterior Insulation and Finish System |
| <input checked="" type="checkbox"/> Masonry                | <input type="checkbox"/> Mechanical & Electrical Systems       |
| <input type="checkbox"/> Structural Steel                  | <input checked="" type="checkbox"/> Architectural Systems      |
| <input type="checkbox"/> Cold-Formed Steel Framing         | <input type="checkbox"/> Special Cases                         |

Special Inspection Agencies	Firm	Address, Telephone, e-mail
1. Special Inspection Coordinator Bruce W. MacLeod	MacLeod Structural Engineers, PA	404 Main St. Gorham, Me 04038
2. Inspector "GE" Geotech Engineers	SW Cole	286 Portland Rd Gray, Me 657-2866
3. Inspector		
4. Testing Agency <del>to be identified</del> Concrete	SW Cole	286 Portland Rd Gray, Me
5. Testing Agency		
6. Other		

Note: The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

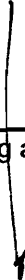
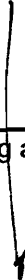
Item	Agency # (Qualif.)	Scope
1. Shallow Foundations  MSE / GE	PE/GE	<p><i>Inspect soils below footings for adequate bearing capacity and consistency with geotechnical report.</i></p> <p><i>Inspect removal of unsuitable material and preparation of subgrade prior to placement of controlled fill</i></p>
2. Controlled Structural Fill  MSE / GE	PE/GE	<p><i>Perform sieve tests (ASTM D422 &amp; D1140) and modified Proctor tests (ASTM D1557) of each source of fill material.</i></p> <p><i>Inspect placement, lift thickness and compaction of controlled fill.</i></p> <p><i>Test density of each lift of fill by nuclear methods (ASTM D2922)</i></p> <p><i>Verify extent and slope of fill placement.</i></p>
3. Deep Foundations  N/A	PE/GE	<p><i>Inspect and log pile driving operations. Record pile driving resistance and verify compliance with driving criteria.</i></p> <p><i>Inspect piles for damage from driving and plumbness.</i></p> <p><i>Verify pile size, length and accessories.</i></p> <p><i>Inspect installation of drilled pier foundations. Verify pier diameter, bell diameter, lengths, embedment into bedrock and suitability of end bearing strata.</i></p>
4. Load Testing  —		
4. Other:  —		

# Cast-in-Place Concrete

Item	Agency # (Qualif.)	Scope
1. Mix Design  TEST. AGENCY	<del>ACI-CCI</del> ICC-RCSI	Review concrete batch tickets and verify compliance with approved mix design. Verify that water added at the site does not exceed that allowed by the mix design.
2. Material Certification		
3. Reinforcement Installation  MSE	ACI-CCI ICC-RCSI	Inspect size, spacing, cover, positioning and grade of reinforcing steel. Verify that reinforcing bars are free of form oil or other deleterious materials. Inspect bar laps and mechanical splices. Verify that bars are adequately tied and supported on chairs or bolsters
4. Post-Tensioning Operations  —	ICC-PCSI	Inspect placement, stressing, grouting and protection of post-tensioning tendons. Verify that tendons are correctly positioned, supported, tied and wrapped. Record tendon elongations.
5. Welding of Reinforcing  —	AWS-CWI	Visually inspect all reinforcing steel welds. Verify weldability of reinforcing steel. Inspect preheating of steel when required.
6. Anchor Rods  MSE		Inspect size, positioning and embedment of anchor rods. Inspect concrete placement and consolidation around anchors.
7. Concrete Placement  MSE	ACI-CCI ICC-RCSI	Inspect placement of concrete. Verify that concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.
8. Sampling and Testing of Concrete  TEST. AGENCY	ACI-CFTT ACI-STT	Test concrete compressive strength (ASTM C31 & C39), slump (ASTM C143), air-content (ASTM C231 or C173) and temperature (ASTM C1064).
9. Curing and Protection  MSE / Testing Agency	ACI-CCI ICC-RCSI	Inspect curing, cold weather protection and hot weather protection procedures.
10. Other:		



# Wood Construction

Item	Agency # (Qualif.)	Scope
1. Fabricator Certification/ Quality Control Procedures <input checked="" type="checkbox"/> Fabricator Exempt		<i>Inspect shop fabrication and quality control procedures for wood truss plant.</i>
2. Material Grading  MSE / GE		
3. Connections  		
4. Framing and Details  		
5. Diaphragms and Shearwalls  MSE		<i>Inspect size, configuration, blocking and fastening of shearwalls and diaphragms. Verify panel grade and thickness.</i>
6. Prefabricated Wood Trusses		<i>Inspect the fabrication of wood trusses.</i>
7. Permanent Truss Bracing  MSE		
8. Other:		

# Architectural Systems

Item	Agency # (Qualif.)	Scope
1. Wall Panels & Veneers  MSE		
2. Suspended Ceilings  —		
3. Access Floors  —		
4. Other:  —		

Starbucks  
Portland, ME

MacLeod Structural Engineers, PA  
19.10.2006

STARBUCKS  
1080 FOREST AVE.

OUTLINE SPECIFICATIONS

## OUTLINE SPECIFICATIONS

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Document 00520	Agreement Form
Document 00700	General Conditions
Document 00800	Supplementary Conditions
Document 00910	Addenda And Modifications

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Section 01330	Submittal Procedures
Section 01400	Quality Requirements
Section 01500	Temporary Facilities and Controls
Section 01600	Product Requirements
Section 01700	Execution Requirements
Section 01730	Cutting and Patching

#### DIVISION 2 - SITE CONSTRUCTION

Section 02220	Site Demolition
Section 02230	Site Clearing
Section 02300	Earthwork
Section 02510	Water Distribution
Section 02530	Sanitary Sewerage
Section 02630	Storm Drainage
Section 02741	Hot Mix Asphalt Pavement
Section 02770	Curbs and Gutters
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#### DIVISION 3 - CONCRETE

Section 03300	Cast-In-Place Concrete
Section 03450	Plant-Precast Architectural Concrete

#### DIVISION 4 - MASONRY

Section 04800	Masonry Assemblies
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#### DIVISION 6 - WOOD AND PLASTICS

Section 06100	Rough Carpentry
Section 06175	Wood Trusses

#### DIVISION 7 - THERMAL AND MOISTURE PROTECTION

Section 07210	Building Insulation
Section 07270	Air and Moisture Barriers

Starbucks  
Portland, ME

MacLeod Structural Engineers, PA  
19.10.2006

Section 07530	Elastomeric Membrane Roofing
Section 07600	Flashing and Sheet Metal
Section 07900	Joint Sealers

**DIVISION 8 - DOORS AND WINDOWS**

Section 08110	Steel Doors and Frames
Section 08415	Aluminum Entrances and Storefronts
Section 08520	Aluminum Windows

**END OF TABLE OF CONTENTS**

DOCUMENT 00410

BID FORM

1. Submission of Bids: Submit bids in compliance with Document 00200 - Instructions to Bidders. Fill in blanks. The Owner reserves the right to reject incomplete bid forms.
  
2. Bidding Documents: This Bidding document is not part of the Contract Documents, unless specifically referenced in the Owner/Contractor Agreement.

Project Name: Starbucks

Project Owner: \_\_\_\_\_

Name of Bidder: \_\_\_\_\_

3. Base Bid: The Bidder proposes to perform all of the Work required by the Contract Documents for the amount of: (Fill in amount in words and numbers.)  
\$
  
4. Bonds: If the Bidder is required to furnish a Performance Bond and Payment Bond (AIA A312) for the entire value of the Work, add the following amount to the base bid amount:  
\$
  
5. Alternates: If an Alternate is selected by the Owner, the Bidder proposes to do the Work required by the Contract Documents by increasing or decreasing the Base Bid the following amount: (Fill in amounts in words and numbers)
  - a. Alternate No. 1 - ((Name of Alternate)): Increase/decrease (underline one) Base Bid by:  
\$
  
  - b. Alternate No. 2 - ((Name of Alternate)): Increase/decrease (underline one) Base Bid by:  
\$
  
6. Time: The Bidder proposes the following dates (Fill in):

Proposed Starting Date: \_\_\_\_\_

Proposed Date of Substantial Completion (not later than (insert date)):

\_\_\_\_\_

7. Submission of Bid Form: By submitting this Bid Form, the Bidder certifies that Bidder has visited the project site, is aware of existing conditions which affect the work, and has reviewed the Contract Documents, including the following Addenda:

(List addenda received)

8. Bid Qualifications: Submit bid qualifications and reasons for qualifications with this Bid Form at the end of the Bid Form. Include impact of bid qualifications on time, cost or quality. Bid qualifications may include: Cash flow requirements, assumptions for access to the work, assumptions for staging the work, assumptions for protecting existing and abutting work, proposed modifications to General and Supplementary Conditions, proposed modifications to drawings and specifications.

9. Signature: Signed and sealed (Enter date, Bidder's signature, title, name of firm, legal business address, phone and fax numbers, email address):

Signature: \_\_\_\_\_

Name and Title: \_\_\_\_\_

Firm: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, ZIP: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

Email: \_\_\_\_\_

10. Project Manager: Bidder's Project Manager To Be Assigned to the Project (name and brief summary of experience):
11. Subcontractors: Bidder's List of Proposed Major Subcontractors (list):
12. Bid Qualifications: List of Bid Qualifications by Bidder (If any):

END OF DOCUMENT

DOCUMENT 00520

AGREEMENT FORM

1. Owner-Contractor Agreement Form: AIA A101, Owner-Contractor Agreement Form - Stipulated Sum.
2. Owner-Contractor Agreement Form: AIA A105, Owner-Contractor Agreement Form - Small Projects and A 205 General Conditions for Small Project,
3. Owner-Contractor Agreement Form: AIA A107, Owner-Contractor Agreement Form - Stipulated Sum - For Construction Projects of Limited Scope.
4. Owner-Contractor Agreement Form: AIA A111, Owner-Contractor Agreement Form - Cost of the Work Plus a Fee With a Negotiated Guaranteed Maximum Price (GMP).
5. Owner-Contractor Agreement Form: AIA A114, Owner-Contractor Agreement Form - Cost of the Work Plus a Fee Without a Guaranteed Maximum Price (GMP.)
6. Owner-Contractor Agreement Form: AIA A171, Owner-Contractor Agreement Form - Stipulated Sum - For Furniture, Furnishings and Equipment.
7. Owner-Contractor Agreement Form: AIA A177 Abbreviated Owner-Contractor Agreement Form - Stipulated Sum - For Furniture, Furnishings and Equipment.
8. Agreement Forms: Agreement forms are available from the American Institute of Architects, Washington, D.C., 202-626-7300. Agreement Forms will be prepared and approved for use on the project by the Owner in consultation with an attorney.

END OF DOCUMENT



DOCUMENT 00700

GENERAL CONDITIONS

1. General Conditions: AIA A201, General Conditions of the Contract for Construction.
2. General Conditions: AIA A271, General Conditions of the Contract for Furniture, Furnishings and Equipment.
3. General Conditions Forms: General Conditions are available from the American Institute of Architects, Washington, D.C., 202-626-7300. General Conditions will be prepared and approved for use on the project by the Owner in consultation with an attorney.

END OF DOCUMENT

DOCUMENT 00800

SUPPLEMENTARY CONDITIONS

1. Supplementary Conditions: Supplementary Conditions will be prepared and approved for use on the project by the Owner in consultation with an attorney.

END OF DOCUMENT

DOCUMENT 00910

ADDENDA AND MODIFICATIONS

1. Date: [Date of Issue of Addenda]
2. Re: Addendum No. [1]
3. Project: \_\_\_\_\_  
\_\_\_\_\_
4. Issued: [Date on Drawings]
5. To: [Bidder]  
[Address]  
[City, State, Zip]
6. From: \_\_\_\_\_
7. This Addendum forms part of and modifies Bidding and Contract Documents for the project named above. Acknowledge receipt of this Addendum on the Bid Form.
8. Where any original item called for in the Project Manual or indicated on the Drawings is supplemented by this addendum, the supplemental requirements shall supersede the previous item.
9. Where any original item is amended, voided, or superseded hereby, the other provisions of such items not specifically amended, voided, or superseded shall remain in effect.
10. This addendum consists of this document and the following attachments:  
[List specifications, drawings and sketches issued with this addendum.]

END OF DOCUMENT

## SECTION 01100

### SUMMARY

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Project Identification: Starbucks (Portland, ME).
- B. Project Summary: One story wood framed structure with concrete frost walls, slab-on-grade floor, brick veneer & precast concrete exterior, approximately 1800s.f. Shell only, no interior fit up.
- C. Particular Project Requirements:
  - 1. Existing site conditions and restrictions: demolish existing building.
  - 2. Requirements for sequencing, scheduling and completion date: Per Owner.
- D. Permits and Fees: Apply for, obtain, and pay for permits, fees, and utility company backcharges required to perform the work. Submit copies to Engineer.
- E. Codes: Comply with applicable codes and regulations of authorities having jurisdiction. Submit copies of inspection reports, notices and similar communications to Engineer. Note: Special Inspections is required on this project. Refer to Statement of Special Inspections for Details.
- F. Dimensions: Verify dimensions indicated on drawings with field dimensions before fabrication or ordering of materials. Do not scale drawings.
- G. Coordination:
  - 1. Coordinate the work of all trades.
  - 2. Prepare coordination drawings for areas above ceilings where close tolerances are required between building elements and mechanical and electrical work.
  - 3. Verify location of utilities and existing conditions.
- H. Installation Requirements, General:
  - 1. Inspect substrates and report unsatisfactory conditions in writing.
  - 2. Do not proceed until unsatisfactory conditions have been corrected.
  - 3. Take field measurements prior to fabrication where practical. Form to required shapes and sizes with true edges, lines and angles. Provide inserts and templates as needed for work of other trades.
  - 4. Install materials in exact accordance with manufacturer's instructions and approved submittals.
  - 5. Install materials in proper relation with adjacent construction and with proper appearance.
  - 6. Restore units damaged during installation. Replace units which cannot be restored at no additional expense to the Owner.
  - 7. Refer to additional installation requirements and tolerances specified under individual specification sections.
- I. Limit of Use: Limit use of work as indicated. Keep driveways and entrances clear.
- J. Definitions:
  - 1. Provide: Furnish and install, complete with all necessary accessories, ready

- for intended use. Pay for all related costs.
2. **Approved:** Acceptance of item submitted for approval. Not a limitation or release for compliance with the Contract Documents or regulatory requirements. Refer to limitations of 'Approved' in General and Supplementary Conditions.
  3. **Match Existing:** Match existing as acceptable to the Owner.
- K. **Intent:** Drawings and specifications are intended to provide the basis for proper completion of the work suitable for the intended use of the Owner. Anything not expressly set forth but which is reasonable implied or necessary for proper performance of the project shall be included.
- L. **Writing Style:** Specifications are written in the imperative mode. Except where specifically intended otherwise, the subject of all imperative statements is the Contractor. For example, 'Provide tile' means 'Contractor shall provide tile.'

PART 2 EXECUTION - Not Applicable To This Section

END OF SECTION

## SECTION 01330

### SUBMITTAL PROCEDURES

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Types of Submittals: Provide types of submittals listed in individual sections and number of copies required below.
  - 1. Shop drawings, reviewed and annotated by the Contractor - 3 copies.
  - 2. Product data - 3 copies.
  - 3. Samples - 2, plus extra samples as required to indicate range of color, finish, and texture to be expected.
  - 4. Inspection and test reports - 3 copies.
  - 5. Warranties - 3 copies.
  - 6. Survey data - 3 copies.
  - 7. Closeout submittals - 3 copies.
  - 8. Project photographs - 12 digital images each month submitted on CD. Submit cumulative CD at each subsequent submittal. Label each image with date.
- B. Submittal Procedures: Comply with project format for submittals. Comply with submittal procedures established by Engineer including Engineer's submittal and shop drawing stamp. Provide required resubmittals if original submittals are not approved. Provide distribution of approved copies including modifications after submittals have been approved.
- C. Samples and Shop Drawings: Samples and shop drawings shall be prepared specifically for this project. Shop drawings shall include dimensions and details, including adjacent construction and related work. Note special coordination required. Note any deviations from requirements of the Contract Documents.
- D. Warranties: Provide warranties as specified; warranties shall not limit length of time for remedy of damages Owner may have by legal statute. Contractor, supplier or installer responsible for performance of warranty shall sign warranties.

#### PART 2 EXECUTION - Not Applicable To This Section

END OF SECTION

## SECTION 01400

### QUALITY REQUIREMENTS

#### PART 1 GENERAL

##### 1.1 QUALITY CONTROL

- A. **Quality Monitoring:** Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality. Perform quality control procedures and inspections during installation. Note: Special Inspections are required on this project. Refer to "Statement of Special Inspections."
- B. **Standards:** Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

##### 1.2 TOLERANCES

- A. **Tolerances:** Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate. Comply with manufacturers' tolerances.

##### 1.3 REFERENCES

- A. **Reference Standards:** For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

##### 1.4 MANUFACTURERS' FIELD SERVICES

- A. **Field Services:** When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to perform the following as applicable, and to initiate instructions when necessary.
  - 1. Observe site conditions.
  - 2. Conditions of surfaces and installation.
  - 3. Quality of workmanship.
  - 4. Start-up of equipment.
  - 5. Test, adjust and balance of equipment.

##### 1.5 MOCK-UP REQUIREMENTS

- A. **Mock-Ups:** Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes. Accepted mock-ups shall be a comparison standard for the remaining Work.
- B. **Removal of Mock-Ups:** Where mock-up has been accepted by Architect and no longer needed, remove mock-up and clear area when directed to do so.

#### PART 2 EXECUTION - Not Applicable To This Section

END OF SECTION

SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SUMMARY

- A. Temporary Services: Provide temporary services and utilities, including payment of utility costs including the following.
  - 1. Water (potable and non-potable).
  - 2. Lighting and power.
  - 3. Metering.
  - 4. Telephone.
  - 5. Toilet facilities.
  - 6. Materials storage.
  
- B. Construction Facilities: Provide construction facilities, including payment of utility costs including the following.
  - 1. Construction equipment.
  - 2. Dewatering and pumping.
  - 3. Enclosures.
  - 4. Heating.
  - 5. Lighting.
  - 6. Elevator.
  - 7. Access.
  - 8. Roads.
  
- C. Security and Protection: Provide security and protection requirements including the following.
  - 1. Fire extinguishers.
  - 2. Site enclosure fence, barricades, warning signs, and lights.
  - 3. Building enclosure and lock-up.
  - 4. Environmental protection.
  - 5. Pest control during and at the end of construction.
  - 6. Snow and ice removal if applicable.
  
- D. Personnel Support: Provide personnel support facilities including the following.
  - 1. Architect's field office with telephone, fax and data connection.
  - 2. Contractor's field office.
  - 3. Sanitary facilities.
  - 4. Drinking water.
  - 5. Project identification sign.
  - 6. Cleaning.

PART 2 EXECUTION - Not Applicable To This Section

END OF SECTION



## SECTION 01600

### PRODUCT REQUIREMENTS

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. **Manufactures:** Provide products from one manufacturer for each type or kind as applicable. Provide secondary materials as acceptable to manufacturers of primary materials.
- B. **Product Selection:** Provide products selected or equal approved by Engineer. Products submitted for substitution shall be submitted with complete documentation, and include construction costs of substitution including related work.
- C. **Substitutions:** Request for substitution must be in writing. Conditions for substitution include:
  - 1. An 'or equal' phrase in the specifications.
  - 2. Specified material cannot be coordinated with other work.
  - 3. Specified material is not acceptable to authorities having jurisdiction.
  - 4. Substantial advantage is offered to the Owner in terms of cost, time, or other valuable consideration.
- D. **Substitution Requests:** Substitutions shall be submitted prior to award of contract, unless otherwise acceptable. Approval of shop drawings, product data, or samples containing substitutions is not an approval of a substitution unless an item is clearly presented as a substitution at the time of submittal.

#### PART 2 EXECUTION - Not Applicable To This Section

END OF SECTION

## SECTION 01700

### EXECUTION REQUIREMENTS

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Substantial Completion: The following are prerequisites to substantial completion. Provide the following.
  - 1. Punch list prepared by Contractor and subcontractors as applicable.
  - 2. Supporting documentation.
  - 3. Warranties.
  - 4. Certifications.
  - 5. Occupancy permit.
  - 6. Start-up and testing of building systems.
  - 7. Change over of locks.
  - 8. Meter readings.
  - 9. Commissioning documentation.
  
- B. Final Acceptance: Provide the following prerequisites to final acceptance.
  - 1. Final payment request with supporting affidavits.
  - 2. Completed punch list.
  
- C. As-Built Drawings: Provide a marked-up set of drawings including changes, which occurred during construction.
  
- D. Project Closeout: Provide the following during project closeout.
  - 1. Submission of record documents.
  - 2. Submission of maintenance manuals.
  - 3. Training and turnover to Owner's personnel.
  - 4. Final cleaning and touch-up.
  - 5. Removal of temporary facilities.

PART 2 EXECUTION - Not Applicable To This Section

END OF SECTION

## SECTION 01730

### CUTTING AND PATCHING

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Cutting and Patching: Provide cutting and patching work to properly complete the work of the project, complying with project requirements for:
  - 1. Structural work.
  - 2. Mechanical/electrical systems.
  - 3. Visual requirements, including detailing and tolerances.
  - 4. Operational and safety limitations.
  - 5. Fire resistance ratings.
  - 6. Inspection, preparation, and performance.
  - 7. Cleaning.
  
- B. Means and Methods: Do not cut and patch in a manner that would result in a failure of the work to perform as intended, decrease energy performance, increase maintenance, decrease operational life, or decrease safety performance.

#### PART 2 EXECUTION

##### 2.1 INSTALLATION

- A. Inspection: Inspect conditions prior to work to identify scope and type of work required. Protect adjacent work. Notify Owner of work requiring interruption to building services or Owner's operations.
  
- B. Performance of Operations: Perform work with workmen skilled in the trades involved. Prepare sample area of each type of work for approval.
  
- C. Cutting: Use cutting tools, not chopping tools. Make neat holes. Minimize damage to adjacent work. Inspect for concealed utilities and structure before cutting.
  
- D. Patching: Make patches, seams, and joints durable and inconspicuous. Comply with tolerances for new work.
  
- E. Cleaning: Clean work area and areas affected by cutting and patching operations.

END OF SECTION

## SECTION 02220

### SITE DEMOLITION

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide site demolition.

##### 1.2 SUBMITTALS

- A. Schedule: Submit for approval selective demolition schedule, including schedule and methods for capping utilities to be abandoned and maintaining existing utility service.

##### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Use experienced workers.
- B. Remove and store refrigerant according to regulations of authorities having jurisdiction.

##### 1.4 PROJECT CONDITIONS

- A. Immediate areas of work will not be occupied during selective demolition. The public, including children, may occupy adjacent areas.
- B. No responsibility for buildings and structures to be demolished will be assumed by the Owner

#### PART 2 PRODUCTS

##### 2.1 DEMOLITION APPLICATIONS

- A. Site Demolition Applications:
  1. Application: Demolition of designated building structures.
  2. Application: Demolition of designated improvements including paving, curbing, site walls, and utility structures.
  3. Application: Demolition of below-grade foundations and site improvements to depth to avoid conflict with new construction or site work.
  4. Application: Protection of site work and adjacent structures.
  5. Application: Disconnection, capping, and removal of utilities.
  6. Application: Pollution control during building demolition, including noise control.
  7. Application: Removal and legal disposal of materials.

#### PART 3 EXECUTION

##### 3.1 DEMOLITION

- A. Do not damage building elements and improvements indicated to remain. Items of salvage value, 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. Locate, identify, disconnect, and seal or cap off utilities in buildings to be demolished.
- C. Provide and maintain shoring and bracing as required.
- D. No explosives are permitted.
- E. 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.
- F. Cease operations if public safety or remaining structures are endangered. Perform temporary corrective measures until operations can be continued properly.
- G. Provide adequate protection against accidental trespassing. Secure project after work hours.
- H. Restore finishes of patched areas.

### 3.2 SCHEDULE

- A. Items for Protection During Demolition and Construction:
  - 1. Designated site improvements, trees, and plantings.
  - 2. Adjacent construction.
- B. Items to be Salvaged for Delivery to Owner:
  - 1. n/a
- C. Utilities Requiring Interruption, Capping, or Removal:
  - 1. [Electric.]
  - 2. [Heat.]
  - 3. [Water.]
  - 4. [Gas.]
  - 5. [Sewerage.]

END OF SECTION

## SECTION 02230

### SITE CLEARING

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide site-clearing.

##### 1.2 SUBMITTALS

- A. Clearing Plan: Submit list of proposed operations, and identify site improvements and features to remain. Include proposed location for stockpiles.

##### 1.3 QUALITY ASSURANCE

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

#### PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. Manufacturers: n/a
- B. Site Clearing Applications:
  - 1. Tree protection, erosion control, siltation control, and dust control materials suitable for site conditions.

#### PART 3 EXECUTION

##### 3.1 SITE CLEARING OPERATIONS

- A. Protection of existing trees, vegetation, landscaping, and site improvements not scheduled for clearing which might be damaged by construction activities.
- B. Trimming of existing trees and vegetation as recommended by arborist for protection during construction activities.
- C. Clearing and grubbing of stumps and vegetation, and removal and disposal of debris, rubbish, designated trees, and site improvements.
- D. Topsoil stripping and stockpiling.
- E. Temporary erosion control, siltation control, and dust control.
- F. Temporary protection of adjacent property, structures, benchmarks, and monuments.
- G. Temporary relocation of play structures, fencing, and site improvements scheduled for reuse.
- H. Watering of trees and vegetation during construction activities.
- I. Removal and legal disposal of cleared materials.

##### 3.2 CLEARING

- A. Prevent damage to existing improvements indicated to remain, including improvements on and off site. Protect existing trees and vegetation indicated to remain. Do not stockpile materials and restrict traffic within drip line of existing trees to remain. Provide and maintain temporary guards to encircle trees or groups of trees to remain; obtain approval before beginning work.
- B. Water vegetation as required to maintain health. Cover temporarily exposed roots with wet burlap and backfill as soon as possible. Coat cut plant surfaces with approved emulsified asphalt plant coating.
- C. Repair or replace vegetation, which has been damaged, or pay damages. Remove heavy growths of grass before stripping. Stockpile satisfactory topsoil containing no large stones, foreign matter and weeds on site for reuse.
- D. Completely remove all improvements including stumps and debris except for those indicated to remain. Remove below grade improvements at least 12" below finish grade and to the extent necessary so as not to interfere with new construction. Remove abandoned mechanical and electrical work as required.
- E. Prevent erosion and siltation of streets, catch basins and piping. Control windblown dust. Remove waste materials and unsuitable soil from site and dispose of in a legal manner.

END OF SECTION

## SECTION 02300

### EARTHWORK

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide earthwork operations.

##### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Test Reports: Submit for approval test reports, list of materials and gradations proposed for use.

##### 1.3 QUALITY ASSURANCE

- A. Manufacturers: Huesker, Inc.; Presto Products Company; Tensar International Corporation.
- B. Compaction:
  - 1. Under structures, building slabs, steps, pavements, and walkways, 95 percent maximum density, ASTM D 1557.
  - 2. Under lawns or unpaved areas, 90 percent maximum density, ASTM D 1557.
- C. Grading Tolerances Outside Building Lines:
  - 1. Lawns, unpaved areas, and walks, plus or minus 1 inch.
  - 2. Pavements, plus or minus 1/2 inch.
- D. Grading Tolerance for Fill Under Building Slabs: Plus or minus 1/2 inch measured with 10-foot straightedge.

#### PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. Earthwork Applications:
  - 1. Application: Excavation, filling, compacting and grading operations both inside and outside building limits as required for below-grade improvements and to achieve grades and elevations indicated. Provide trenching and backfill for mechanical and electrical work and utilities.
  - 2. Application: Subbase materials, drainage fill, common fill, and structural fill materials for slabs, pavements, and improvements.
  - 3. Application: Suitable fill from off-site if on-site quantities are insufficient or unacceptable, and legal disposal of excess fill off-site.
- B. Subbase Material:
  - 1. Gravel or crushed stone graded for intended use as subbase for paving materials specified.
- C. Bedding Course:
  - 1. Crushed gravel or stone and natural or crushed sand; with 100 percent passing a 1-inch sieve and not more than 8% passing a No. 200 sieve placed



in a trench before laying pipe.

- D. Borrow Soil:
  - 1. Satisfactory soil imported from off-site for use as fill or backfill.
- E. Drainage Fill:
  - 1. Washed gravel or crushed stone, 1/4" to 3/4" size; ASTM C 33, Size 67.
- F. Common Fill:
  - 1. Mineral soil substantially free from organic and unsuitable materials, and free from rock or gravel larger than 2" in diameter; 80 percent passing No. 40 sieve and not more than 50 percent passing No. 200 sieve.
- G. Structural Fill:
  - 1. Gravel or sandy gravel free of organic and unsuitable materials and within the following gradation limits: 4" sieve, 100 percent finer by weight; 1" sieve, 60 to 100 percent; No. 4 sieve, 25 to 85 percent; No. 20 sieve, 10 to 60 percent; No. 50 sieve, 4 to 35 percent; No. 200 sieve, 0 to 5 percent.
- H. Impervious Fill:
  - 1. Clayey gravel and sand mixture capable of compacting to a dense state.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Excavation is unclassified and includes excavation to subgrade regardless of materials encountered. Repair excavations beyond elevations and dimensions indicated as follows:
  - 1. At Structure: Concrete or compacted structural fill.
  - 2. Elsewhere: Backfill and compact as directed.
- B. Maintain stability of excavations; coordinate shoring and bracing as required by authorities having jurisdiction. Prevent surface and subsurface water from accumulating in excavations. Stockpile satisfactory materials for reuse, allow for proper drainage and do not stockpile materials within drip line of trees to remain.
- C. Compact materials at the optimum moisture content as determined by ASTM D 1557 by aeration or wetting to the following percentages of maximum dry density:
  - 1. Structure, Pavement, Walkways: Subgrade and each fill layer to 95% of maximum dry density to suitable depth.
  - 2. Unpaved Areas: Top 6" of subgrade and each fill layer to 90% maximum dry density.
- D. Place acceptable materials in layers not more than 8" loose depth for materials compacted by heavy equipment and not more than 4" loose depth for materials compacted by hand equipment to subgrades indicated as follows:
  - 1. Structural Fill: Use under foundations, slabs on grade in layers as indicated.
  - 2. Drainage Fill: Use under designated building slabs, at foundation drainage and elsewhere as indicated.
  - 3. Common Fill: Use under unpaved areas.
  - 4. Subbase Material: Use under pavement, walks, steps, piping and conduit.
- E. Grade to within 1/2" above or below required subgrade and within a tolerance of 1/2" in 10'.
- F. Protect newly graded areas from traffic and erosion. Recompact and regrade

settled, disturbed and damaged areas as necessary to restore quality, appearance, and condition of work.

- G. Control erosion to prevent runoff into sewers or damage to sloped or surfaced areas.
- H. Control dust to prevent hazards to adjacent properties and vehicles. Immediately repair or remedy damage caused by dust including air filters in equipment and vehicles. Clean soiled surfaces.
- I. Dispose of waste and unsuitable materials off-site in a legal manner.

END OF SECTION

## SECTION 02510

### WATER DISTRIBUTION

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide underground, exterior water service piping systems.

##### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

##### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Testing: Hydrostatic tests at minimum 2 times working pressure for 2 hours.

#### PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. Manufacturers: Refer to [www.arcata.com/divs/sec/sec02510.html](http://www.arcata.com/divs/sec/sec02510.html)
- B. Pipe and Fittings:
  - 1. Ductile Iron Pipe 4 Inches and Larger: AWWA C151, Class 50 minimum.
    - a. Lining: AWWA C104, cement mortar, seal coated.
    - b. Gaskets: AWWA C111.
    - c. Ductile Iron and Cast Iron Fittings, AWWA C110 or AWWA C153, 250-psi minimum pressure rating; AWWA C104 cement mortar lining; AWWA C111 rubber gaskets.
  - 2. PVC Pipe 4 Inches and Larger: AWWA C900, Class 150.
    - a. Gaskets: ASTM F 477, elastomeric seal.
    - b. PVC Couplings and Fittings: AWWA C900 with ASTM F 477 elastomeric seal gaskets.
    - c. Ductile Iron and Cast Iron Fittings: AWWA C110, 250 psi pressure rating; AWWA C104 cement mortar lining; AWWA C111 rubber gaskets.
  - 3. Fiberglass Pressure Pipe 2 Inches and Larger: AWWA C950, Class 200, Type I, Grade as suitable with bell-and-spigot ends [with gasket or seal for gasketed joints.
  - 4. PE, ASTM Pipe: ASTM D 2239, SDR Numbers 5.3, 7, or 9; with PE compound number required to give pressure rating not less than 200 psig.
  - 5. Copper Water Tube 2 Inches and Smaller: ASTM B 88, Type K seamless, annealed temper; ANSI B16.22 wrought-copper solder-joint copper fittings.
  - 6. Copper Water Tube 2 Inches and Smaller: ASTM B 88, Type L seamless,

- annealed temper; ANSI B16.22 wrought-copper solder-joint copper fittings.
7. PVC Pipe 3 Inches and Smaller: ASTM D 1785, Schedule 40; Schedule 40 socket-type PVC fittings or elastomeric gasketed joint.
  8. Polybutylene Pipe 3 Inches and Smaller: AWWA C902, DR 17 barbed insert type brass or bronze fittings.
  9. Polybutylene Pipe 3 Inches and Smaller: ASTM D 2662, SIDR15 barbed insert type brass or bronze fittings.
  10. Polybutylene Tubing 3 Inches and Smaller: ASTM D 2666, SIDR13.5 brass or bronze fittings.
  11. Polyethylene Pipe and Tubing 3 Inches and Smaller: AWWA C901; barbed insert type copper alloy or nylon fittings.

C. Valves:

1. Nonrising stem gate valves 3 Inches and larger, AWWA C500.
2. Rising Stem Gate Valves: 3 Inches and larger, AWWA C500 or AWWA C509.
3. Nonrising Stem Gate Valves: 2 inches and smaller, MSS SP-80.
4. Valve Accessories: Cast-iron valve boxes, curb stops, and service boxes for curb stops.
5. Sleeves: Tapping sleeve and tapping valve for new connections larger than 2 inches.
6. Clamps: Service clamps and corporation stops for new connections 2 inches and smaller.

D. Anchorages:

1. Clamps, Straps, and Washers: ASTM A 506, steel.
2. Rods: ASTM A 575, steel.
3. Rod Couplings: ASTM A 197, malleable iron.
4. Bolts: ASTM A 307, steel.
5. Cast-Iron Washers: ASTM A 126, gray iron.
6. Concrete Reaction Backing: ASTM C 150, Type I Portland cement for 3000 psi, 28-day minimum compressive strength.

E. Accessory Components:

1. Couplings: ASTM A 126, gray iron sleeve assembly with followers, rubber gaskets, bolts, nuts, and enamel paint finish.
2. Valve Pits and Meter Pits: Reinforced concrete with ladder and cast-iron manhole frame and cover.
3. Water: AWWA C702 water meter.
4. Water Meter: Utility Company water meter.
5. Meter Box: Cast-iron body and cover with lettering.
6. Backflow Preventer: ASSE standard, backflow preventers with working pressure of 150 psig.
7. Reduced-Pressure Backflow Preventers: ASSE 1013 or AWWA C511 with maximum pressure loss of 12 psig.
8. Vacuum Breakers: Antisiphon-pressure-type vacuum breakers; ASSE 1020.
9. Freestanding Fire Hydrants: Dry-barrel type with one or two outlets.
10. Fire Department Connections: Free standing type with thread inlets matching local fire department hose threads.
11. Drinking Fountains, Accessible, Style F, pedestal fixture made of concrete.
12. Identification: Metallic-lined plastic underground warning tapes.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and

approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections.

- B. Clean and disinfect system. Test for proper operation. Backfill and protect work from damage.

END OF SECTION

SECTION 02530  
SANITARY SEWAGE

PART 1 GENERAL

1.1 SUMMARY

- A. Provide sanitary sewerage systems.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Manufacturers: Refer to [www.arcata.com/divs/sec/sec02530.html](http://www.arcata.com/divs/sec/sec02530.html)
- B. Pipe and Fittings:
  - 1. Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings: ASTM D 2751, for solvent-cemented or gasketed joints.
  - 2. PVC Pressure Pipe: AWWA C900, Class 150] for gasketed joints and using ASTM F 477, elastomeric seals.
  - 3. PVC Water-Service Pipe and Fittings: ASTM D 1785, Schedule 40 pipe, with plain ends for solvent-cemented joints.
  - 4. PVC Sewer Pipe and Fittings, NPS 15 and Smaller: ASTM D 3034, SDR 35, with bell-and-spigot ends for gasketed joints with ASTM F 477, elastomeric seals.
  - 5. PVC Sewer Pipe and Fittings, NPS 18 and Larger: ASTM F 679, T-1 wall thickness, with bell-and-spigot ends for gasketed joints with ASTM F 477, elastomeric seals.
  - 6. PVC Profile Gravity Sewer Pipe and Fittings: ASTM F 794 pipe, with bell-and-spigot ends; ASTM D 3034 fittings, with bell ends; and ASTM F 477,
  - 7. Sleeve Materials:
    - a. For Concrete Pipes: ASTM C 443, rubber.
    - b. For Cast-Iron Soil Pipes: ASTM C 564, rubber.
    - c. For Plastic Pipes: ASTM F 477, elastomeric seal or ASTM D 5926, PVC.
    - d. For Dissimilar Pipes: ASTM D 5926, PVC or other material compatible with pipe materials being joined.
  - 8. Couplings:
    - a. Rubber or elastomeric sleeve and stainless steel band.

- b. Couplings: Rubber or elastomeric compression gasket.
- 9. Gaskets: Compatible with pipe materials joined.
- 10. Backwater Valves:
  - a. Gray-Iron Backwater Valves.
  - b. PVC Backwater Valves:

C. Manholes:

- 1. Precast Concrete Manholes: ASTM C 478.
- 2. Manhole Steps: Ductile iron or cast aluminum.
- 3. Manhole Frames and Covers: ASTM A 536, Grade 60-40-18, heavy-duty ductile iron with lettering.

D. Cleanouts:

- 1. Cast-iron.
- 2. PVC with cast-iron adapter.

E. Catch Basins for Storm Sewerage System:

- 1. Precast Concrete Catch Basins: ASTM C 478 or ASTM C 858.
- 2. Catch Basin Steps: Ductile iron or cast aluminum.
- 3. Catch Basin Frames and Grates: ASTM A 536, Grade 60-40-18, heavy-duty ductile iron.
- 4. Curb Inlets: Precast concrete, stone, or brick conforming to utility standards.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections.
- B. Where connections are made to existing systems, rout out old drainage lines.
- C. Test for proper operation. Clean and protect work from damage.

END OF SECTION

## SECTION 02630

### STORM DRAINAGE

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide storm drainage system.

##### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

##### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

#### PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. Manufacturers: Invisible Structures, Inc.
- B. Pipe And Fittings:
  1. ABS: ASTM D 2751, with bell-and-spigot ends for gasketed joints.
  2. Corrugated PE: NPS 56 and NPS 60.
  3. PVC Pressure Pipe: AWWA C900, Class 150.
  4. PVC Sewer Pipe and Fittings, NPS 15.
- C. Accessories:
  1. Ductile-Iron Flexible Expansion Joints: AWWA C110 or AWWA C153.
  2. Ductile-Iron Expansion Joints: Three-piece assembly, AWWA C110 or AWWA C153 rated for 250-psig.
  3. Gray-Iron Backwater Valves: ASME A112.14.1.
  4. PVC Backwater Valves: Horizontal type; with PVC body, PVC removable cover, and PVC swing check valve.
  5. Gray-Iron Cleanouts: ASME A112.36.2M.
  6. Gray-Iron Area Drains: ASME A112.21.1M.
  7. Gray-Iron Trench Drains: ASME A112.21.1M.
  8. Steel Trench Drains: Factory fabricated from ASTM A 242.
  9. Encasement for Underground Metal Piping: ASTM A 674 or AWWA C105.
  10. Precast Concrete Manholes: ASTM C 478, precast, reinforced concrete, with butyl rubber sealant joints, resilient pipe connectors, FRP steps, grade rings, plant applied protective coating, manhole frames and covers.
  11. Drainage Specialties: Precast, polymer-concrete units including catch basins, oil interceptors, sediment interceptors.
  12. Precast Concrete Catch Basins: ASTM C 478.
  13. Cast-in-Place Concrete, Catch Basins: Construct of reinforced concrete; designed according to ASTM C 890.
  14. Stormwater Inlets: Include curb, gutter, frames and grates,



15. Dry Wells: ASTM C 913, precast, reinforced, perforated concrete rings with crushed stone or gravel filtering material.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections.
- B. Where connections are made to existing systems, rout out old drainage lines.
- C. Test for proper operation. Clean and protect work from damage.

END OF SECTION

## SECTION 02741

### HOT-MIX ASPHALT PAVEMENT

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide hot-mixed asphalt paving.

##### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Test Reports: Submit for approval test reports.

##### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Construction Tolerances:
  - 1. Base Course Thickness: Within 1/2 inch.
  - 2. Surface Course Thickness: Within 1/4 inch.
  - 3. Base Course Surface Smoothness: Within 1/4 inch.
  - 4. Surface Course Surface Smoothness: Within 3/16 inch. No ponding acceptable.
  - 5. Crowned Surfaces: Within 1/4 inch from template.

#### PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. Manufacturers: Refer to [www.arcata.com/divs/sec/sec02741.html](http://www.arcata.com/divs/sec/sec02741.html)
- B. Asphalt Paving Materials:
  - 1. Asphalt-Aggregate Mixture: Plant-mixed, hot-laid asphalt-aggregate mixture, ASTM D 3515, complying with local DOT and DPW regulations.
  - 2. Prime Coat: Cut-back asphalt, ASTM D 2027.
  - 3. Tack Coat: Emulsified asphalt, ASTM D 977.
- C. Accessories:
  - 1. Herbicide Treatment: Commercial chemical for weed control registered by Environmental Protection Agency and acceptable to authorities having jurisdiction.
  - 2. Marking Paint: Alkyd-resin type, lead and chromate free, ready mixed, ready-mixed, AASHTO M 248, Type I, white or yellow.
  - 3. Wheel Stops: Precast, air-entrained concrete.

#### PART 3 EXECUTION

##### 3.1 INSTALLATION

- A. Asphalt/Aggregate Mixture: Comply with local DOT or DPW Standard Specifications for Highways and Bridges. Class as required by loading and use.
- B. Remove loose material from compacted subbase. Proof roll and check for areas requiring additional compaction. Report unsatisfactory conditions in writing. Beginning of work means acceptance of subbase.
- C. Apply prime coat to prepared subbase. Apply tack coat to previous laid work and adjacent in-place concrete surfaces.
- D. Place asphalt concrete at minimum temperature of 225 degrees F in strips not less than 10' wide overlapping previous strips. Complete entire base course before beginning surface course.
- E. Construct curbs to dimensions indicated or if not indicated to standard shapes. Provide tack coat between curb and pavement.
- F. Begin rolling when pavement can withstand weight of roller. Roll while still hot to obtain maximum density and to eliminate roller marks.
- G. Provide 4' lane and striping paint in uniform, straight lines. Provide wheel stops where indicated and securely dowel into pavement. Protect work from traffic and damage.
- H. Test in-place asphalt work for thickness and smoothness. Remove and replace defective work and patch to eliminate evidence of patching

END OF SECTION

SECTION 02770  
CURBS AND GUTTERS

PART 1 GENERAL

1.1 SUMMARY

- A. Provide curbs and gutters.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Test Reports: Submit for approval test reports.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Construction Tolerance: 1/8' in 10' for grade and alignment; 1/4' in 10' for vertical or sloped face on longitudinal axis.
- C. Mock-Ups: Provide mock-up as required to demonstrate quality of workmanship.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Manufacturers: Refer to [www.arcata.com/divs/sec/sec02770.html](http://www.arcata.com/divs/sec/sec02770.html)
- B. Precast Concrete Curbs and Gutters:
  - 1. Concrete: ASTM C 150, Type I, Portland Cement; ASTM C 33, normal weight aggregates; potable water.
  - 2. Design Mix: ASTM C 94, 4000 psi, 28 day minimum compressive strength.
  - 3. Finish: Smooth form finish.
  - 4. Reinforcing Bars: Deformed steel bars, ASTM A 615, Grade 60.
  - 5. Joint Dowel Bars: Plain steel bars, ASTM A 615, Grade 60.
- C. Granite Curbs and Gutters:
  - 1. Vertical Granite Curb: Sawed top and smooth quarry split face.
  - 2. Sloped Granite Curb: Smooth quarry split face.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Provide acceptable materials and install curbing in strict compliance with local DOT and DPW Standard Specifications for Highways and Bridges.
- B. Set curbs on compacted gravel subbase with joints between curb pieces from 1/8' to 3/4' wide. Point joints with mortar and tool concave; remove surplus mortar and

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clean curbs.

END OF SECTION

## SECTION 02900

### PLANTING

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide plantings.

##### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
- C. Maintenance Data: Submit maintenance data, including maintenance schedule.
- D. Notices: Submit 48-hour written notice prior to turnover to Owner for watering and maintenance.
- E. Warranty: Warrant trees and shrubs for a period of one year after date of Substantial Completion, against defects including death and unsatisfactory growth and except for defects resulting from neglect by Owner, abuse by others, or natural phenomena. Replace unsatisfactory plant material at end of warranty period at no additional expense to the Owner. One replacement is required.

##### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Balled and Burlapped Plants and Trees: Graded to American Standard for Nursery Stock, ANSI Z60.1.
- C. Testing: Laboratory testing for suitable soil amendments and fertilizer.

#### PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. Manufacturers: Refer to [www.arcat.com/divs/sec/sec02900.html](http://www.arcat.com/divs/sec/sec02900.html)
- B. Planting Applications:
  - 1. Application: Trees, shrubs, plants, and ground cover.
  - 2. Application: Finish grading and lawns.
  - 3. Application: Topsoil and soil amendments.
- C. Plant Materials:
  - 1. Deciduous trees.
  - 2. Deciduous shrubs.
  - 3. Coniferous and broadleaf evergreen trees and shrubs.

4. Ground cover.
5. Plants.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

- A. Install materials in accordance with approved submittals. Install landscape work in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- B. Prepare topsoil by mixing fertilizer with loam. Apply fertilizer at a rate of 2 pounds of actual nitrogen per 1000 sq. ft. for plant beds and 2 pounds per inch of trunk for tree pits.
- C. Install soil mix to a depth of 18' in plant beds.
- D. For seeded lawns, apply seed at rate of 5 pounds per 1000 square feet.
- E. For lawns with sod, place sod tightly, with grain in same direction.
- F. Excavate as required for trees and shrubs.
- G. Install plant material and backfill with soil mix. Stake and guy trees. Water thoroughly. Allow for soil settlement.
- H. Provide maintenance and watering until turnover to Owners for maintenance and watering. Replace damaged materials and dead or unhealthy plants prior to turnover to Owner.

END OF SECTION

## SECTION 03300

### CAST-IN-PLACE-CONCRETE

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide cast-in-place concrete.

##### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
  - 1. Shop drawings shall be prepared and stamped by a qualified engineer licensed in the jurisdiction of the project.
- C. Mix Design: Submit for approval mix design proposed for use.

##### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Testing: Employ an independent testing agency acceptable to Owner to design concrete mixes and to perform material evaluation tests. Provide 7 and 28 day cylinder tests. Comply with ASTM C 143, C 173, C 31 and C 39.
- C. Standards:
  - 1. ACI 301, Specifications for structural Concrete for Buildings.
  - 2. ACI 318, Building Code Requirements for Reinforced Concrete, and CRSI Manual of Standard Practice.
- D. Mock-Ups: Provide mock-up as required to demonstrate quality of workmanship.
- E. Floor Flatness and Levelness Tolerances:
  - 1. Subfloors Under Materials Such as Concrete Toppings, Ceramic Tile, and Sand Bed Terrazzo: ACI 302.1R and ASTM E 1155, floor flatness (Ff) of 15, floor levelness (Fl) of 13.
  - 2. Subfloors Under Materials Such As Vinyl Tile, Epoxy Toppings, Paint, and Carpet: ACI 302.1R and ASTM E 1155, floor flatness (Ff) of 20, floor levelness (Fl) of 17.

#### PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. Manufacturers: Armorlon, Division of Reef Industries, Inc.; Ashford Formula, By Curecrete; Bomanite Corp.; Davis Colors; L. M. Scofield Company; MAPEI Corp. U.S.A.; Powers Fasteners; Symons; Universal Building Products, Inc.; Xypex Chemical Corp.



- B. Cast-In-Place Concrete Applications:
  - 1. Application: Foundations and footings.
  - 2. Application: Slabs on grade.
  - 3. Application: Exterior site concrete and pads.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Comply with ASTM C 94. Do not change mix design without approval. Calcium chloride admixtures are not permitted.
- B. Chamfer exposed edges/corners to provide straight lines.
- C. Tolerance: Plus 1/8" in 10" for grade, alignment, and straightness.
- D. Construction Joints: Use keyways, continue reinforcement through joint.
- E. Expansion Joints: For exterior work locate 30' o.c. at approved locations. Provide smooth dowels across joint which permit 1" horizontal movement and no vertical shear movement.
- F. Isolation Joints: Provide between slabs and vertical elements such as columns and structural walls.
- G. Control Joints: Provide sawn or tooled joints or removeable insert strips; depth equal to 1/4 slab thickness. Spacing as required and approved.
- H. Wall Finishes: As-cast and patched for concealed work; rubbed smooth, filled and cement paste coated for exposed work.
- I. Slab Finishes: Obtain sample approval before beginning work.
  - 1. Scratch: For surfaces to receive mortar setting beds or cementitious flooring materials.
  - 2. Trowel: Hard, smooth, uniform surface for areas to receive resilient flooring, carpet, or other thin finish material.
  - 3. Broom: After trowel finishing, roughen surface by fine brooming perpendicular to traffic direction for exposed exterior walks, steps and ramps.
  - 4. Non-Slip Aggregate: After trowel finishing, uniformly trowel 25-lbs./100 s. f. of damp non-slip aggregate into surface. Cure, then rub lightly to expose aggregate. Use for interior exposed concrete stairs and ramps.
  - 5. Exposed Aggregate: Use chemical retarder or tamp aggregate into wet concrete and expose by brushing with water. Use where indicated.
  - 6. Hardener Finish: For exposed interior concrete floors. Follow manufacturer's directions.
- J. Cure and protect work. Report defective work in writing.

END OF SECTION

## SECTION 03450

### PLANT-PRECAST ARCHITECTURAL CONCRETE

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide architectural precast concrete.

##### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
  - 1. Shop drawings shall be prepared and stamped by a qualified engineer licensed in the jurisdiction of the project.
- C. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

##### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Standards: ACI 318, Building Code Requirements for Reinforced Concrete; CRSI Manual of Standard Practice; PCI MNL 117, Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products.
- C. Testing: Independent testing laboratory.
- D. Fabrication and Erection Tolerance Limits: PCI MNL 117.
- E. Mock-Ups: Provide mock-up as required to demonstrate quality of workmanship.
  - 1. Full-size typical unit.

#### PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. Manufacturers: BASF Construction Chemicals (Schweiz) AG .
- B. Architectural Precast Concrete Applications:
  - 1. Application: Exterior wall panels.
  - 2. Surface Finish: Smooth finish.
  - 3. Cement: Standard gray cement.

#### PART 3 EXECUTION

##### 3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- B. Tolerance: 1/4' in 20' for plumb and location. 1/8" at adjacent units and reglets.
- C. Restore damaged finishes. Clean and protect work from damage.

END OF SECTION

SECTION 04800  
MASONRY ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

- A. Provide unit masonry construction.
  - 1. Face Brick.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

1.3 QUALITY ASSURANCE

- A. Fire Performance for Fire-Rated Brick and Concrete Block Assemblies: ASTM E 119.
- B. Mock-Ups: Provide mock-up as required to demonstrate quality of workmanship.
- C. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Manufacturers: BASF Construction Chemicals (Schweiz) AG; Davis Colors; Dur-O-Wal; Heckmann Building Products, Inc.; Hohmann & Barnard, Inc.; Mortar Net USA Limited; Mulia Inc.; Powers Fasteners; Trenwyth Industries; Wire-Bond.
- B. Masonry Applications:
  - 1. Application: Brick veneer on sheathing and wood studs.
- C. Face Brick:
  - 1. Size: Standard, 3-5/8 inches thick by 2-1/4 inches high by 8 inches long.
  - 2. Grade: ASTM C 216, Grade SW, Type FBS.
  - 3. Products: Academy Smooth Red as mfg. by Morin Brick Co., Auburn, Me.
  - 4. Special Shapes: As required by building configuration.
  - 5. Bond Pattern: Running bond.
- D. Mortar and Grout for Brick and Concrete Masonry Unit Assemblies:
  - 1. Mortar Mix: ASTM C 270, Type S, for reinforced masonry, masonry below grade and masonry in contact with earth and ASTM C 270, Type N, for above-grade loadbearing and nonloadbearing walls and parapet walls and for interior loadbearing and nonloadbearing partitions.

2. Mortar Materials: Portland cement, ASTM C 150, Type I or II.
  3. Mortar Materials: Masonry cement, ASTM C 91.
  4. Mortar Aggregate: Natural color, ASTM C 144.
  5. Grout Aggregate: ASTM C 404.
  6. Hydrated Lime: ASTM C 207, Type S.
  7. Color: Natural color.
  8. Integral Water Repellent: Liquid polymeric admixture.
- E. Ties and Anchors:
1. Bent Wire Ties: Galvanized steel.
  2. Rigid Anchors: Galvanized steel straps.
  3. Masonry to Steel Frame: Anchor with crimped wire anchor section for welding to steel.
  4. Adjustable Masonry Veneer Anchors: Screw-attached two-piece galvanized triangular or rectangular wire tie and metal anchor.
- F. Masonry Accessories:
1. Cavity Drainage Material
  2. Rubberized-Asphalt or EPDM Flashing with stainless steel drip edge.
  3. Stainless steel or copper-laminated flashing.
  4. Nonmetallic expansion joint strips.
  5. Preformed control joint gaskets.
  6. Bond breaker strips.
  7. Plastic tubing for weeps.
  8. Cavity vents.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Installation of Masonry Assemblies:
1. Comply with PCA Recommended Practices for Laying Concrete Block, Brick Institute of America BIA Tech Notes, and NCMA TEK Bulletins.
  2. Comply with cold weather and warm weather protection procedures as recommended in BIA Tech Notes.
  3. Provide fire-rated assemblies complying with ASTM E 119.
  4. Sawcut units when required. Maintain uniform joint width. Provide full bed, head and collar joints except at weepholes.
  5. Install lintels and accessories in masonry construction.
  6. Coordinate installation of flashings.
  7. Comply with applicable codes and regulations for spacing of ties and horizontal reinforcing.
  8. Provide expansion and control joints in accordance with BIA and NCMA recommendations.
  9. Remove and replace damaged units.
  10. Clean brick using bucket and brush method, BIA Tech Note 20.
  11. Clean concrete masonry by dry brushing, NCMA TEK No. 28.

END OF SECTION

## SECTION 06100

### ROUGH CARPENTRY

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide rough carpentry.

##### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

##### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Lumber Standards and Grade Stamps: DOC PS 20, American Softwood Lumber Standard and inspection agency grade stamps.
- C. Construction Panel Standards: DOC PS 1, U.S. Product Standard for Construction and Industrial Plywood; APA PRP-108.
- D. Wood Framing Standards: NFPA House Framing Manual.
  - 1. Exterior Wall Framing: 2 inch by 4-inch nominal (38 mm by 89 mm actual) studs, 16 inches (40 cm) on center.
- E. Preservative Treatment: AWPA C2 for lumber and AWPA C9 for plywood; waterborne pressure treatment. Provide for wood in contact with soil, concrete, masonry, roofing, flashing, dampproofing and waterproofing.

#### PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. Rough Carpentry Applications:
  - 1. Application: Framing with dimension lumber.
  - 2. Application: Framing with engineered wood products.
  - 3. Application: Rooftop equipment bases and support curbs.
  - 4. Application: Wood grounds, nailers, and blocking.
  - 5. Application: Sheathing.
  - 6. Application: Building wrap.
- B. Dimension Lumber:
  - 1. Light Framing: Stud, No. 2 grade.
  - 2. Structural Framing: No. 1 grade.
  - 3. Species: SPF
- C. Engineered Wood Products:
  - 1. Laminated-Veneer Lumber: A composite of wood veneers with grain primarily parallel to member lengths, manufactured with an exterior-type adhesive

- complying with ASTM D 2559.
2. Parallel-Strand Lumber: A composite of wood strand elements with grain primarily parallel to member lengths, manufactured with an exterior-type adhesive complying with ASTM D 2559.
  3. Composite Joists and Headers: Laminated lumber veneers; design stresses for use intended.
- D. Auxiliary Materials:
1. Building Paper: Asphalt-saturated organic felt, ASTM D 226, Type I, No. 15 felt, unperforated.
  2. Building Wrap: Air-retarder sheeting made from polyolefins; cross-laminated films, woven strands, or spun-bonded fibers; coated or uncoated; with or without perforations; ASTM E 1677, Type I.
  3. Sill Sealer Gaskets: Glass fiber strip resilient insulation.
  4. Framing Anchors and Fasteners: Non-corrosive, suitable for load and exposure. Drywall screws are not acceptable.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated,
- B. Plywood: Comply with applicable recommendations contained in APA Form No. E30K, "APA Design/Construction Guide: Residential & Commercial"
- C. Provide nailers, blocking and grounds where required. Set work plumb, level and accurately cut.
- D. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with other work.
- E. Comply with manufacturer's requirements for cutting, handling, fastening and working treated materials.
- F. Restore damaged components. Protect work from damage.

END OF SECTION

## SECTION 06175

### WOOD TRUSSES

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide prefabricated and pre-engineered wood trusses.

##### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
  - 1. Shop drawings shall be prepared and stamped by a qualified engineer licensed in the jurisdiction of the project.

##### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Standards: TPI 1, "National Design Standard for Metal Plate Connected Wood Truss Construction." and fabricate wood trusses within manufacturing tolerances in TPI 1
- C. Design Engineering: Registered engineer.

#### PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. Wood Trusses:
  - 1. Lumber Standard: PS 20 American Softwood Lumber Standard.
  - 2. Dressing: Dressed four sides.
  - 3. Species: Manufacturer's option.
  - 4. Moisture Content: Seasoned, 15 percent maximum.
  - 5. Moisture Content: Seasoned, 19 percent maximum.
  - 6. Grade for Chord Members: Select Structural.
  - 7. Grade for Chord Members: No. 1.
  - 8. Grade for Chord Members: No. 2.
  - 9. Grade for Web Members: No. 3 or Stud Grade.
  - 10. Grade for Web Members: Same as chord grade.
- B. Connectors, Fasteners, and Metal Framing Anchors:
  - 1. Nails, Wire, Brads, and Staples: FS FF-N-105.
  - 2. Power Driven Fasteners: CABO NER-272.
  - 3. Wood Screws: ASME B18.6.1
  - 4. Lag Bolts: ASME B18.2.1.



5. Bolts: ASTM A 307, Grade A; ASTM A 563 for hex nuts and, where indicated, flat washers.
6. Metal Framing Anchors: Hot-dip galvanized steel sheet, ASTM A 653, G60.
7. Truss Tie-Downs: Bent strap tie for fastening roof trusses to wall studs below; Hot-dip galvanized steel sheet, ASTM A 653, G60.
8. Connectors: Hot-dip galvanized steel sheet, ASTM A 653, G60.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Install and brace trusses according to TPI recommendations and within installation tolerances in TPI 1.
- B. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections.
- C. Install trusses plumb, square, and true to line and securely fasten to supporting construction.
- D. Restore damaged components. Clean and protect work from damage.

END OF SECTION

## SECTION 07210

### BUILDING INSULATION

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide thermal insulation and vapor retarders.

##### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Submit for approval test reports.

##### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

#### PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. Manufacturers: BASF Polyurethane Foam Enterprises, LLC; Foam Enterprises LLC; Hunter Panels; Innovative Energy Inc.; Johns Manville Building Insulations; Knauf Insulation; LP Corporation; Poly-Tech Radiant Inc.; Polyfoam Products, Inc.; Thermal Design.
- B. Board Insulation:
  - 1. Application: Foundation walls.
  - 2. Type: Extruded polystyrene, rigid.
    - a. Standard: ASTM C 578.
- C. Blanket/Batt Insulation:
  - 1. Application: Thermal insulation in studs in exterior walls.
  - 2. Application: Thermal insulation at underside of roofs, over heated spaces and soffits.
  - 3. Type: Unfaced mineral fiber.
    - a. Standard: ASTM C 665, Type I (unfaced).
  - 4. Type: Foil-faced mineral fiber.
    - a. Standard: ASTM C 665, Type III (foil-scrim-kraft vapor-retarder membrane).
- D. Vapor Retarder (Not Integral with Insulation):
  - 1. Application: Exterior walls.
  - 2. Type: Reinforced 2-ply polyethylene, 6 to 10 mils.
- E. Accessories:
  - 1. Adhesives and mechanical anchors and clips.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections. Provide full thickness in one layer over entire area, tightly fitting around penetrations.
- B. Install vapor retarder over entire area of inside face of exterior walls and elsewhere as indicated. Seal all seams and around perimeter and penetrations with duct tape to form a continuous vapor retarder free of holes.
- C. Protect installed insulation and vapor retarder.

END OF SECTION

## SECTION 07270

### AIR AND MOISTURE BARRIERS

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide air and moisture barriers.

##### 1.2 SUBMITTALS

- A. **Product Data:** Submit manufacturer's product data and installation instructions for each material and product used.
- B. **Shop Drawings:** Submit shop drawings indicating material characteristics, details of construction at foundation, walls, roof, connections, and relationship with adjacent construction.
- C. **Samples:** Submit two representative samples of each material specified.

##### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

#### PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. **Manufacturers:** Griffolyn, Division of Reef Industries, Inc.; W. R. Meadows, Inc.
- B. **Air and Moisture Barriers:**
  - 1. **Type:** Self-adhering, vapor permeable, 40 mils.
  - 2. **Transition Materials:** Silicone sheet.

#### PART 3 EXECUTION

##### 3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections. Install over entire area, tightly fitting around penetrations and at perimeters.
- B. Protect installed air and moisture barriers.

END OF SECTION

## SECTION 07530

### ELASTOMERIC MEMBRANE ROOFING

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide elastomeric membrane roofing.

##### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
- C. Warranty: Submit manufacturers standard warranty. Include labor and materials to repair or replace defective materials.
  - 1. Warranty Period: 10 years.

##### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Listing: UL Class A external fire exposure:
- C. Listing: FM Class I construction.

#### PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. Manufacturers: GAF Materials Corporation, Commercial Roofing Products Division; GenFlex Roofing Systems; Stevens Roofing Systems.
- B. EPDM Membrane Roofing:
  - 1. Type: Fully adhered.
  - 2. Membrane: EPDM, 60 mils, non-reinforced.
    - a. Standard: ASTM D 4637, Type I.
  - 3. Insulation: Polyisocyanurate board. Min. R30.
  - 4. Insulation Profile: Flat.
- C. Scuppers: Provide as shown on Plans.
- C.Crickets: Slope at twice roof slope.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Inspect substrate and report unsatisfactory conditions in writing. Beginning work means acceptance of substrate.
- B. Comply with roof system manufacturer's instructions and recommendations; clean, prime and prepare substrate.
- C. Install insulation with tightly butted joints and neatly fitted around penetrations.
- D. Begin roof installation only in presence of manufacturer's representative. Minimize seams and shingle overlaps to shed water.
- E. Where applicable, distribute ballast uniformly to 10 pounds per square foot or more as required by FM. Obtain approval of ballast weight before loading roof.
- F. Install walkway protection or pavers over an additional layer of membrane at locations indicated and where required to provide access to roof mounted equipment.
- G. Restore or replace damaged components. Protect work from damage.

END OF SECTION

## SECTION 07600

### FLASHING AND SHEET METAL

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide flashing and sheet metal.

##### 1.2 SUBMITTALS

- A. **Product Data:** Submit manufacturer's product data and installation instructions for each material and product used.
- B. **Shop Drawings:** Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
- C. **Samples:** Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

##### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

#### PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. **Manufacturers:** Beach Sheet Metal Co., Inc.; Englert, Inc.; Hohmann & Barnard, Inc.; National Sheet Metal Systems, Inc.; Nervastral Inc.; Petersen Aluminum Corp.; Sandell Manufacturing Company, Inc.; SBC Industries Flashings.
- B. **Flashing and Sheet Metal:**
  - 1. **Application:** Metal counterflashing and base flashing. 0.032 Bronze Aluminum.
  - 2. **Application:** Built-in metal valleys, gutters, and scuppers.
  - 3. **Application:** Exposed metal trim and fascia units.
  - 4. **Application:** Elastic flashing.
  - 5. **Flexible Sheet Membrane Flashing:** Nonreinforced flexible black elastic sheet, 50 to 65 mils thick, synthetic rubber.
  - 6. **Laminated Composition Sheet Flashing:** 5 ounce copper sheet laminated between 2 layers of bituminous impregnated Kraft paper or saturated fabric.
  - 7. **Elastic Expansion Joints:** Factory-fabricated metal-flanged edges to fit curbs and curb substrate.
  - 8. **Soffit Vents:** Continuous aluminum strip soffit vents
  - 9. **Ridge Vents:** Baffled ridge vent suitable for direct application of shingles.
- C. **Auxiliary Materials:**
  - 1. Solder compatible with metal.
  - 2. Bituminous isolation coating.

3. Mastic and elastomeric sealants.
4. Epoxy seam sealer.
5. Rosin-sized building paper slip sheet.
6. Polyethylene underlayment.
7. Reglets and metal accessories.
8. Gutter and conductor head guards.
9. Asphaltic roofing cement.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

- A. Follow recommendations of SMACNA Sheet Metal Manual. Allow for expansion. Isolate dissimilar materials.
- B. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- C. Restore damaged components and finishes. Clean and protect work from damage.

END OF SECTION



## SECTION 07900

### JOINT SEALERS

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide joint sealers and fillers.

##### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
  - 1. Include manufacturers full range of color and finish options if additional selection is required.

##### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Field-Constructed Mock-Ups: Each joint type.

#### PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. Manufacturers: Sandell Manufacturing Company, Inc.; Watson Bowman Acme Corp.
- B. Exterior Joints in Vertical Surfaces, Silicone:
  - 1. Materials: Multi-part nonacid-curing silicone sealant, ASTM C 920.

#### PART 3 EXECUTION

##### 3.1 INSTALLATION

- A. Examine substrate; report unsatisfactory conditions in writing. Beginning work means acceptance of substrates.
- B. Provide sealants in colors as selected from manufacturer's standards.
- C. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections. Clean and prime joints, and install bond breakers, backer rods and sealant as recommended by manufacturers.
- D. Depth shall equal width up to 1/2 inch wide; depth shall equal 1/2 width for joints over 1/2 inch wide.

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- E. Cure and protect sealants as directed by manufacturers. Replace or restore damaged sealants. Clean adjacent surfaces to remove spillage.

END OF SECTION

## SECTION 08110

### STEEL DOORS AND FRAMES

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide steel doors and frames.

##### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

##### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Standards: ANSI/SDI-100, Recommended Specifications for Standard Steel Doors and Frames.
- C. Performance Standards:
  - 1. Fire-Rated Assemblies: NFPA 80, and acceptable testing agency listing.
  - 2. Thermal-Rated Assemblies at Exterior: ASTM C 236 or ASTM C 976.

#### PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. Manufacturers: Amweld Building Products; Benchmark Products; Fleming (An ASSA ABLOY Group company); Steel Door Institute; Steelcraft, Div. of IR Security Technologies; Timely Industries; Windsor Republic Doors.
- B. Exterior Steel Doors:
  - 1. Door Type: Standard steel doors with hollow or composite construction.
  - 2. Door Thickness: 1-3/4 inches.
  - 3. Door Gauge: Exterior doors, minimum 16 gauge galvanized sheet steel.
  - 4. Door Application: Exterior doors, thermally insulated.
  - 5. Finish: Factory primed and field painted.
  - 6. Accessories:
    - a. Silencers.
- C. Exterior Steel Frames:
  - 1. Material: Galvanized sheet steel.
  - 2. Corners: Mitered or coped.
  - 3. Type: Knockdown.
  - 4. Thickness: 16 gauge (.0358 inch).
  - 5. Finish: Factory primed and field painted.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Fabricate work to be rigid, neat and free from seams, defects, dents, warp, buckle, and exposed fasteners. Install doors and frames in compliance with SDI-100, NFPA 80, and requirements of authorities having jurisdiction.
- B. Provide thermally improved doors with maximum U-value of 0.24 BTU/hr./sq. ft. degree F (ASTM C 236) for all exterior doors and elsewhere as noted.
- C. Hardware: Prepare doors and frames to receive hardware on final schedule. Provide for 3 silencers on single doorframes; 2 on double doorframes.
- D. Shop Finish: Clean, treat and prime paint all work with rust-inhibiting primer comparable with finish paint specified in Division 9 section. Provide asphalt emulsion sound deadening coating on concealed frame interiors.
- E. Touch-up damaged coatings ready to receive finish painting.

END OF SECTION

## SECTION 08415

### ALUMINUM ENTRANCES AND STOREFRONTS

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide aluminum entrances and storefront.

##### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
- C. Warranty: Submit manufacturer's standard warranty. Include labor and materials to repair or replace defective materials.
  - 1. Warranty Period: 5 years.
- D. Operation and Maintenance Data: Submit manufacturer's operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

##### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

#### PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. Manufacturers: ACI Distribution - Vitro; Dawson Doors; Pacific Aluminum; YKK AP America, Inc.
- B. Aluminum Entrances and Storefront:
  - 1. Aluminum Members: ASTM B 209, ASTM B 221, ASTM B 429.
  - 2. Steel Reinforcement: ASTM A 36, ASTM A 1008, and ASTM A 1011.
  - 3. Door Style: Medium stile and rail doors.
  - 4. Storefront Style: Aluminum framed.
  - 5. Glass and Glazing: Insulating glazing, tempered.
  - 6. Glazing Color: Clear with Low-e coating.
  - 7. Door Hanging Devices: Offset pivot sets.
  - 8. Closers: Surface mounted.
  - 9. Closer Operation: Single acting closers.
  - 10. Aluminum Finish: Clear anodized.
- C. Auxiliary Materials:
  - 1. Aluminum infill panels.
  - 2. Push/pulls, doorstops, overhead holders, and deadlocks.
  - 3. Weatherstripping and thresholds.

4. Exit devices.
5. Electric-strike release.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

- A. Take field measurements before fabrication where possible; do not delay job progress.
- B. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- C. Anchor securely in place; install plumb, level and in true alignment. Isolate dissimilar materials to prevent corrosion.
- D. Coordinate with glass and glazing work; install hardware and adjust for smooth, proper operation.
- E. Clean and protect completed system; repair damage.

END OF SECTION

SECTION 08520  
ALUMINUM WINDOWS

PART 1 GENERAL

1.1 SUMMARY

- A. Provide aluminum windows.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
- C. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
- D. Warranty: Submit manufacturer's standard warranty. Include labor and materials to repair or replace defective materials.
  - 1. Warranty Period: 5 years.
- E. Maintenance Data: Submit manufacturer's maintenance data, including maintenance schedule.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Mock-Ups: Provide mock-up as required to demonstrate quality of workmanship.
- C. Performance: Comply with AAMA/NWWDA 101/I.S.2 for grade of window required.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Manufacturers: Florida's Best Windows & Doors; Pacific Aluminum; St. Cloud Window, Inc.; Stergis Windows and Doors.
- B. Aluminum Windows:
  - 1. Construction: Thermal-break type.
  - 2. Aluminum Window Members: Aluminum extrusions.
  - 3. Anchors, Clips, and Window Accessories: Aluminum, nonmagnetic stainless steel, or galvanized steel.
  - 4. Window Operation: Horizontal sliding windows.
  - 5. Window Operation: Fixed windows.
  - 6. Grade: Commercial.
    - a. Standard: AAMA/NWWDA 101/I.S. 2, Grade 40.

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7. Glazing: Insulating glass with low-e coating.
8. Glazing Color: Clear glass.
9. Aluminum Finish: Clear anodized.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

- A. Fabricate windows to conform to AAMA standards and accept glass specified.
- B. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- C. Operation: Provide locking units with manual operation; provide pole for out of reach hardware.
- D. Restore damaged finishes and test for proper operation. Clean and protect work from damage.

END OF SECTION