Community Development
PROJECT MANAGEMENT

2025
Project Specifications

www.millelacsband.com

Mille Lacs Band of Ojibwe
Community Development
43408 Oodena Drive
Onamia, MN 56359

This Specification book supersedes previous additions.
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Community Development
Housing Initiative 2016

BIDDING REQUIREMENTS
AND
CONTRACT FORMS

SECTION I – INSTRUCTION TO BIDDERS

Bidding Requirements and Contract Forms

1. QUALIFIED BIDDERS

a. To be a qualified bidder, contractors must meet the following criteria:
   i. Contractor must possess a valid Minnesota State Contractors License, unless not specifically required for the project on the RFP.
   ii. Contractor must be licensed with the Mille Lacs Band of Ojibwe Corporate Commission Business Regulation Offices, or have a pending application.
   iii. Contractor must partake in any pre-bid meetings required on the bid posting.

*Any contractor not meeting these criteria will be considered not eligible to bid on the project, and the bid will be rejected.

2. QUALIFIED BIDS

a. To submit a qualified bid, contractors must meet the following criteria:
   i. Contractor must be a qualified bidder.
   ii. Bids must be sealed and submitted as indicated in Request for Proposal.
   iii. Bids must be clearly marked for project being bid.
   iv. Bids must arrive to the location specified on the RFP by the date and time announced or they will be rejected.
   v. Bids must have all required submittals, including:
      a. MLB Bid Form (must be signed by bidder)
      b. MLB Bid Breakdown Spreadsheet (payment application spreadsheet)
      c. MLB Vendor's License – copy of current license or copy of application of the same
      d. Current Insurance Certificate (Builder's risk required on all projects)
      e. Letter from Bond Surety, if required
      f. A Copy of the MN State Contractors License, if required
      g. Sub-contractor list
         i. include name
         ii. phone number
         iii. contract value
   vi. Bids must meet any other criteria listed on the bid posting.

*Any bids not meeting these criteria will be considered a non-qualified bid and will be rejected.

3. PRE-BID INFORMATION

a. To receive information for the project being posted for bid, refer to the bid posting for the Project Coordinator's contact numbers and pre-bid meetings scheduled.
b. Specification books and plans are available on CD format see bid posting.

4. PRODUCT SUBSTITUTION REQUIRMENTS

a. Any Contractor wishing to submit product data for substitution must submit product data at least five days prior to the bid deadline date to be considered. Any approved product substitutions shall be made available to all bidders through a pre-bid addendum identifying any such approved products.
b. Product substitutions will not be considered after the bid date.

5. BID AWARD

a. Bidder will be notified by if they are to be awarded a contract. This award letter is not a notice to proceed with any work. Unless the project is for an emergency service, contractor should not, under any circumstances, perform work without a fully executed contract.

END OF SECTION

FY 2025 CONSTRUCTION BID FORM
REQUIRED FOR ALL BIDS

FIRM NAME: _____

JOB/PROJECT: **THIS IS A SAMPLE BID FORM: PROJECT SPECIFIC BID FORM IS INCLUDED IN THE RFP**

LUMP SUM PRICE:
(LUMP SUM PRICE INCLUDING ALL LABOR AND MATERIALS)

_____ **$**_____
(Written Value) (Dollar Amount)

ALTERNATE #1 (IF APPLICABLE):

_____ **$**_____
(Written Value) (Dollar Amount)

ALTERNATE #2 (IF APPLICABLE):

_____ **$**_____
(Written Value) (Dollar Amount)

Acknowledgement of Addendum(s): 1) _____ date 2) _____date 3) _____date

BID GUARANTEE PERIOD:
I agree to hold this bid open for a period of **90 days** after the bid opening. If this bid is accepted I agree to execute a Contract and/or a Purchase Order with the Mille Lacs Band of Ojibwe along with furnishing all required bonding (if required) and insurances.

TERO COMPLIANCE:
I understand that this company, its subcontractors and all employees performing work on this project will be expected to comply with all Mille Lacs Band TERO Compliance Regulations. Upon being informed that I will be awarded a contract for this project, I will submit all required TERO Compliance Plans directly to the MLB TERO Office for review and approval.

Acknowledgement of TERO Compliance: _____

ATTACHMENTS REQUIRED: Failure to provide any of these attachments will result in bid disqualification.

- MLB BID FORM (MUST BE SIGNED)
- MLBO VENDOR LICENSE
- COPY OF CURRENT INSURANCES
- LETTER FROM BONDING SURETY (If required)
- COPY OF MINNESOTA CONTRACTORS LICENSE, if required
- SUB-CONTRACTOR LISTS (Include values)

NAME: _____**TITLE:**_____

SIGNATURE: _____**DATE:**_____

FIRM NAME: _____**TELEPHONE:**_____

ADDRESS: _____

Application for Payment

Mille Lacs Band Of Ojibwe
Community Development Department
43408 Oodena Drive
Onamia, MN 56359

CONTRACTOR: _____
STREET ADDRESS _____
CITY, STATE AND ZIP _____

PROJECT: _____
ADDRESS: _____

_____

OBLIGATION: _____
ACCOUNT: _____

MONTHLY BILLING FOR: _____
APPLICATION DATE: _____

SUMMARY OF PAYMENT APPLICATION

Original Contract Value		
Change Order Value		$0.00
Total Contract Value	$	-
Retainage Value (10%)	$	-
Total Paid to Date		
Current Payment Due--->		(Amount from Page 2)
Balance to Finish	$	-

CHANGE ORDER SUMMARY		
Description of Change Order	Value	Approved

Contractor Signature Date

Project Coordinator/ Manager Signature Date

Compliance & Residential Projects Manager Date

Notary Signature Date
Required for request over $50,000.00

Director Signature Date

MILLE LACS BAND OF OJIBWE MONTHLY BILLING FORM

(Insert Date)

Contractor: **Address:**

	Base Value	Subcontractor Labor	Material Supplier	Total % Complete	Total Billed To Date	% Complete This Month	Billing This Month
1. Bonding				0.00%	$0.00	0.00%	$0.00
2. Builder's Risk Insurance				0.00%	$0.00	0.00%	$0.00
3. Permits				0.00%	$0.00	0.00%	$0.00
4. Utilities and Facilities				0.00%	$0.00	0.00%	$0.00
5. Dumpsters				0.00%	$0.00	0.00%	$0.00
6. Excavation and Site Clearing				0.00%	$0.00	0.00%	$0.00
7. Footings and Foundations				0.00%	$0.00	0.00%	$0.00
8. Interior Concrete				0.00%	$0.00	0.00%	$0.00
9. Exterior Concrete				0.00%	$0.00	0.00%	$0.00
10. Rough Carpentry				0.00%	$0.00	0.00%	$0.00
11. Roofing				0.00%	$0.00	0.00%	$0.00
12. Window Installation				0.00%	$0.00	0.00%	$0.00
13. Siding Installation				0.00%	$0.00	0.00%	$0.00
14. Plumbing Rough-in				0.00%	$0.00	0.00%	$0.00
15. HVAC Rough-in				0.00%	$0.00	0.00%	$0.00
16. Electrical Rough-in				0.00%	$0.00	0.00%	$0.00
17. Insulation				0.00%	$0.00	0.00%	$0.00
18. Drywall				0.00%	$0.00	0.00%	$0.00
19. Painting				0.00%	$0.00	0.00%	$0.00
20. Interior Finish Carpentry				0.00%	$0.00	0.00%	$0.00
21. Cabinetry				0.00%	$0.00	0.00%	$0.00
22. Flooring - Vinyl				0.00%	$0.00	0.00%	$0.00
23. Flooring - Carpet				0.00%	$0.00	0.00%	$0.00
24. Ceramic Tile				0.00%	$0.00	0.00%	$0.00
25. Bath Accessories				0.00%	$0.00	0.00%	$0.00
26. Closet Shelving				0.00%	$0.00	0.00%	$0.00
27. Appliances				0.00%	$0.00	0.00%	$0.00
28. Plumbing Finish				0.00%	$0.00	0.00%	$0.00
29. HVAC Finish				0.00%	$0.00	0.00%	$0.00
30. Electrical Finish				0.00%	$0.00	0.00%	$0.00
31. Well and Septic Installation				0.00%	$0.00	0.00%	$0.00
32. Builder's Overhead				0.00%	$0.00	0.00%	$0.00
33. Builder's Profit				0.00%	$0.00	0.00%	$0.00
34				0.00%	$0.00	0.00%	$0.00
35				0.00%	$0.00	0.00%	$0.00
36. Retainage - Final Bill	$0.00						$0.00

Original Contract Amount -->	$0.00	Billed to Date -->	$0.00	Bill This Month -->	$0.00

Change Order #1			100.00%	$0.00	0.00%	$0.00
Change Order #2			100.00%	$0.00	0.00%	$0.00
Change Order #3			100.00%	$0.00	0.00%	$0.00
Change Order #4			100.00%	$0.00	0.00%	$0.00
Change Order #5			100.00%	$0.00	0.00%	$0.00
Total Change Orders -->	$0.00			Total Change Orders This Month -->		$0.00

Percent Billed --> 0.00%

	Total Monthly Billing -->	$0.00
	Monthly Retainage (10%) -->	$0.00
	Pay this amount -->	$0.00

Final Billing (Retainage)	
Pay this amount -->	$0.00

Contractor Signature

Project Coordinator/ Manager Signature *Date*

Compliance & Residential Projects Manager *Date*

FORMS FOR FEDERALLY FUNDED PROJECTS:
US Department of Housing and Urban Development (HUD)

When bidding on a HUD Project, which is identified on the Bid Posting or Request for Proposal the Instruction to Bidders for Contract Public and Indian Housing Programs is required to be used form HUD-5369 and all associated certification. These are available at the MLBO Community Development Offices.

END OF SECTION

SECTION III – PERFORMANCE AND PAYMENT BONDS

Bidding Requirements and Contract Forms

1. MLBSA Section 17 Procurement Statue Ordinance 03-06 states the following:

Section 17. Bonding

A. In construction contracts that are federally funded or deemed commercial, bonding is required. These types of contracts shall demand a performance bond not less than twenty (20%) percent of the total contract price, but not to exceed $500,000.00. A performance bond requirement is to ensure that, if a contractor defaults, the Band may request that the surety pay the expense incurred to complete the construction contract.

B. In addition, all construction contracts identified as federally funded or commercial shall be covered by a payment bond equal to one payment installment or cover subcontractors/suppliers as determined by the Contracting Officer or his agents. The payment bond must contain language stating that if the contractor fails to make a payment to its subcontractors/suppliers, the surety will make the necessary payment.

C. For all Band funded residential construction projects, a performance bond is required for contracts in excess of $50,000.00. The performance bond shall be at a minimum twenty (20%) percent of the contract price, but not in excess of $500,000.00.

D. Bonding may also be required for other projects, as determined by CMD Project Management staff. If so, the RFP will note the requirement.

END OF SECTION

CHAPTER 5

Tribal Employment Rights

Historical and Statutory Notes

The title of Ordinance 15-14 is:

"An ordinance amending Section 3(a) in Title 6 of the Mille Lacs Band Statutes Annotated; amending Sections 2, 4, 6 and 10 in Title 18 of the Mille Lacs Band Statutes Annotated; amending Chapter 5 of Title 18 in the Mille Lacs Band Statutes Annotated; and repealing any inconsistent Indian Preference language in any other Band law or policy, including any Corporate Commission policy, in order to create consistency in Band law and policy."

The preamble of Ordinance 15-14 provides:

"It is enacted by the Band Assembly of the Mille Lacs Band of Ojibwe for the purpose of amending Section 3(a) in Title 6 of the Mille Lacs Band Statutes Annotated; Sections 2, 4, 6 and 10 in Title* in the Mille Lacs Band Statutes Annotated; amending Chapter 5 of Title 18 of the Mille Lacs Band Statutes Annotated (the Band's Indian Employment Rights Ordinance or 'TERO'); and repealing any inconsistent Indian Preference language in Band law or policy, including any Corporate Commission policy, in order to create consistency in Band law and policy."

*So in original. Probably should be Title 18.

SUBCHAPTER I

GENERAL PROVISIONS

Section

§ 401. Policy and Findings

A. It is the policy of the Mille Lacs Band of Ojibwe (the Band) to provide a preference in employment and contracting to members of the Band and other federally recognized Indian tribes.

1. This policy applies to employment and contracting by the Band's government (including all branches, departments and agencies thereof), by all Band-owned entities while they are engaged in commercial or economic activities on behalf of the Band within the Band's Reservation and by all persons and entities doing business with the Band (including subcontractors of persons or entities contracting with the Band) within the Band's Reservation.

2. This policy: (A) is intended to further the Band's overriding interests in self-government, self-sufficiency and economic development; (B) is directed to the participation of the governed in the Band's governing bodies and in its commercial and economic activities; (C) is intended to make the Band's government and its commercial and economic activities more responsive to the needs of its constituents; and (D) is intended to provide for the economic security and employment of members of the Band and of other federally recognized Indian tribes and to overcome the effects of past discrimination against such persons.

3. Economic insecurity and unemployment are serious impediments to the health, morale, and welfare of the Band. Employment and contracting opportunities with the Band's government and with Band-owned entities and other persons and entities doing business with the Band within the Band's Reservation are important resources for members of the Band and of other federally recognized Indian tribes, who have historically suffered from discrimination in employment and contracting opportunities. As a result, Indian people living on or near the Band's Reservation have unique and special employment

rights under federal law, and the Band is obligated to implement those rights.

(b) Subject to the policy described in paragraph (a) of this section, all employees subject to the Mille Lacs Band of Ojibwe's jurisdiction are entitled to a workplace environment that prohibits employment discrimination, protects employees' wages, and promotes health and safety.

(c) The provisions of this Chapter are critically important to the health and welfare of members of the Band and of other federally recognized Indian tribes, especially those residing on or near the Band's Reservation. Unemployment and underemployment within the boundaries of the Band's Reservation are consistently many times higher than the national and state average. This pervasive unemployment and underemployment has directly contributed to serious social problems and a lower quality of life for members of the Band and of other federally recognized Indian tribes residing on or near the Band's Reservation and impeded the self-governance objectives of the Band.

(d) The Band declares that the public good and the welfare of the Band require the enactment of this Chapter, which is enacted pursuant to the Band's inherent sovereign and political powers, in order to increase employment of and the number of businesses owned by members of the Band and of other federally recognized Indian tribes, especially within the Band's Reservation, and to protect the workforce rights of Indian and non-Indian employees within the jurisdiction of the Band.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 401.

§ 402. Purpose

This Chapter is adopted by the Mille Lacs Band of Ojibwe (the Band), under its inherent sovereign and political powers, for the following purposes:

(a) To promulgate Band laws and rules governing employment relations and contracting preference within the Band's jurisdiction;

(b) To establish the Band's Tribal Employment Rights Office (TERO) in order to enforce the Band's laws governing employment and contracting preference, and to protect the rights of all members of the Band, members of other federally recognized Indian tribes, and all other employees within the Band's jurisdiction;

(c) To increase the employment of members of the Band and of other federally recognized Indian tribes;

(d) To eradicate employment discrimination, protect employees' wages, and protect employees' health and safety within the Band's jurisdiction;

(e) To provide a fair, enforceable, and effective system of preferences in contracting and/or sub-contracting as it relates to the provision of supplies, services, labor and materials to the Band's government and to Band-owned entities and other persons or entities doing business with the Band (including subcontractors of persons or entities contracting with the Band) within the Band's Reservation; and

(f) To supersede all other provisions of Band law that are inconsistent with the provisions of this Chapter.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 402.

§ 403. Severability

If any provision of this Chapter, or the application thereof to any person, business, corporation, government (including any agency or political subdivision thereof), or circumstance, is held invalid, the invalidity shall not affect any other provision or application of this Chapter that can be given effect without the invalid provision or application, and to this end the provisions of this Chapter are declared severable.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 403.

§ 404. Definitions

(a) "Adverse Action" means an action taken to try to keep an individual from opposing a discriminatory practice or from participating in an employment discrimination proceeding. Adverse actions include termination, refusal to hire, denial of promotion, threats, unjustified negative evaluations, unjustified negative references, increased surveillance or any other action, such as assault or unfounded civil or criminal charge, that are likely to deter reasonable people from pursuing their rights.

(b) "Band" means the Mille Lacs Band of Ojibwe, a federally recognized Indian tribe, and includes the Band's government (including all branches, departments and agencies thereof) and all Band-owned entities while they are engaged in

commercial or economic activities on behalf of the Band within the Band's Reservation.

(c) "Board" means the Administration Policy Board established in 4 MLBSA § 8.

(d) "Chief Executive" means the Chief Executive of the Band.

(e) A "Conflict of Interest" occurs when a Board member is in a position to influence a decision that may result in a personal gain for that member or for a member of his or her Immediate Family.

(f) "Core Crew" means regular, permanent employees in supervisory or other key positions where an employer would face serious financial loss if the positions were filled by persons who had not previously worked for that employer.

(g) "Covered Employer" means the Band and any entity, company, contractor, sub-contractor, corporation or other business doing business with the Band (including subcontractors of persons or entities contracting with the Band) within the Band's Reservation that employs for wages or other remuneration two (2) or more employees.

(h) "Days" means calendar days, including holidays and weekends, unless otherwise indicated.

(i) "Director" means the director of the Band's Tribal Employment Rights Office.

(j) "Disability" means, with respect to an individual:

a. a physical or mental impairment that substantially limits one or more major life activities of such individual;

b. a record of such an impairment; or

c. being regarded as having such an impairment.

An impairment does not have to be permanent to rise to the level of a disability. Temporary impairments that take significantly longer than normal to heal, long-term impairments, or potentially long-term impairments of indefinite duration may be disabilities if they are severe.

(k) "EEOC" means the federal Equal Employment Opportunity Commission.

(l) "Immediate Family" includes a person's spouse, a person's biological or adopted child, a member of a person's household, and a person's mother, father, sister, and brother.

(m)"Indian" means a member of a federally recognized Indian tribe.

(n) "Indian Certified Entity" means an entity, certified by the Board, in which fifty-one percent (51%) or more of the ownership interests are held by one or more Indians and in which daily management and control is provided by one of more Indians.

(o) "Reservation" means all lands within the exterior boundaries of the Mille Lacs Indian Reservation as established by the Treaty of 1855, 10 Stat. 1165, all lands held in trust by the United States for the benefit of the Minnesota Chippewa Tribe, the Band or individual members of the Band, which are subject to the jurisdiction of the Band, and all lands owned by the Band which are located within one of the districts designated in 2 MLBSA § 11.

(p) "TERO" means the Band's Tribal Employment Rights Office established by this Chapter.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 404.

SUBCHAPTER II

Administration; Mille Lacs Band of Ojibwe Tribal Employment Rights Office

Section

§ 405. Recusal of Board Members

(a) Recusal of Board Members. In exercising its powers to administer this Chapter, as set forth in section 406 of this Chapter, the Board shall comply with the following provisions governing the recusal of its members.

(1) Except as provided in paragraph (2), no member of the Board shall participate in any action or decision by the Board directly involving himself or herself, a member of his or her Immediate Family, or any

person, business or other entity of which he or she or a member of his or her Immediate Family is an employee, in which he or she or a member of his or her Immediate Family has a substantial ownership interest, or with which he or she or a member of his or her Immediate Family have a substantial contractual relationship.

(2) Nothing in this section shall preclude a Board member from participating in any action or decision by the Board which:

i. Affects a general class of persons, regardless of whether the Board member or a member of his or her Immediate Family is a member of the affected class; or

ii. Affects the Band, a Band entity, or a person or entity in a contractual relationship with the Band or a Band entity.

(3) A Board member may voluntarily recuse himself or herself and decline to participate in any action or decision by the Board when the Board member, in his or her discretion, believes:

i. That he or she cannot act fairly or without bias; or

ii. That there would be an appearance that he or she could not act fairly or without bias.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 405.

§ 406. Powers of the Board to Administer this Chapter

The Board has the full power, jurisdiction and authority:

(a) To take all actions necessary and appropriate to implement the provisions of this Chapter;

(b) To approve or reject any and all rules, regulations and/or guidelines formulated by the Director to carry out the provisions of this Chapter and to approve or reject the amendment or rescission of any such rules, regulations or guidelines, *provided that*, except when an emergency exists, the Board shall provide the public an opportunity to comment at a meeting of the Board before approving any such rules, regulations or guidelines or the amendment or rescission thereof;

(c) To conduct hearings in accordance with such rules of practice and procedure as may be adopted by the Board after providing the public an opportunity to comment on them at a meeting of the Board; and

(d) To order any relief or sanctions authorized by this Chapter, and to petition the Mille Lacs Band Court of Central Jurisdiction for such orders to enforce the decisions of the Board and any sanctions imposed by the Board, if necessary.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 406.

§ 407. Tribal Employment Rights Office; Director

There is hereby created a Tribal Employment Rights Office within the Executive Branch of Band government. The Director of the TERO shall be an employee of the Executive Branch under the direct supervision of the Commissioner of Administration and shall have the powers and duties prescribed in section 408 of this Chapter.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 407.

§ 408. Powers and Duties of TERO Director

The Director shall have the following powers and duties:

(a) To formulate, amend and rescind regulations, rules and guidelines necessary to carry out the provisions of this Chapter, subject to the approval of the Board;

(b) To implement and enforce the provisions of this Chapter, as well as any properly adopted regulations, rules, guidelines and orders;

(c) To hire staff, expend designated funds from an approved budget, and obtain and expend funding from federal, state, and other sources;

(d) To maintain a list of : (1) current Covered Employers, (2) current employer permits and work permits issued, and (3) current Indian Certified Entities;

(e) To maintain a record of all contracting projects subject to this Chapter and the TERO fees assessed for each project;

(f) To process applications for certification of Indian Certified Entities by the Board;

(g) To grant TERO permits and collect TERO fees as authorized by this Chapter;

(h) To establish training and workforce development programs, in conjunction with the Mille Lacs Band Department of Labor, for Band members and other Indians to assist them in obtaining and retaining employment;

(i) To process applications for and maintain a list of Band members and other Indians living on or near the Reservation who are available for employment and to assist such persons with job placement; and

(j) To contract with federal and/or state entities for the provision of additional job procurement services and funding consistent with the purposes of this Chapter.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 408.

§ 409. Intergovernmental Relationships

The TERO, acting through the Director, is authorized, with the written concurrence of the Commissioner of Administration, to enter into cooperative relationships with federal employment rights agencies, such as the EEOC and the Office of Federal Contract Compliance Programs (OFCCP), and with state employment rights agencies, such as the Human Rights Commission, in order to eliminate discrimination against Indians on and off the Reservation, as well as to develop training programs for Indians. The Director may also, with the written concurrence of the Commissioner of Administration, enter into cooperative relationships with federal agencies, including but not limited to the Bureau of Indian Affairs, the Department of Labor, the Federal Highway Administration, and the Internal Revenue Service, in order to implement any federal employment or other workforce rights, authorities, or requirements as such agency may lawfully delegate to the Band.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 409.

SUBCHAPTER III

Indian Preference in Employment and Contracting

Section

§ 410. Indian Preference in Employment

(a) All Covered Employers shall give preference to Indians living on or near the Reservation in the hiring, promotion, training, and all other aspects of employment within the boundaries of the Reservation, provided that these individuals have the necessary qualifications. The priority for Indian Preference is as follows:

a. Mille Lacs Band Member
b. Member of another federally recognized Indian Tribe
c. All Others

(b) Every Covered Employer shall encourage Indians to seek promotional opportunities. For every opening in a supervisory position, the employer shall inform Indian workers about the position and encourage them to apply.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 410.

§ 411.Covered Employer's Responsibilities

1. Advertising of positions. Covered Employers shall notify the TERO of openings in employment positions subject to this Chapter and provide job descriptions for such openings at or before the time at which they advertise the openings. Job descriptions shall not be written in a way to unnecessarily exclude Band members or other Indians from employment.

2. All Covered Employers shall define in writing the necessary qualifications for each employment position in their work force that is subject to this Chapter, which shall be provided to the Director and applicants upon request.

3. All Covered Employers shall comply with this Chapter, all rules and regulations relating to it, and all guidelines and orders of the Director.

4. The requirements in this Chapter shall not apply to any direct employment by the Federal or a State government or their agencies or subdivisions. However, such requirements shall apply to all contractors or grantees of such governments and to all commercial enterprises operated by such governments when they are doing business with the Band within the Reservation.

5. Covered Employers shall include and specify an Indian employment preference policy statement in all job announcements and advertisements and all employer policies that are subject to this Chapter.

6. Covered Employers shall post in a conspicuous place on their premises for their employees and applicants an Indian preference policy notice prepared or approved by the TERO.

7. Covered Employers, except for construction contractors, shall advertise and announce all openings in employment positions subject to this Chapter on the Mille Lacs Band website. Construction contractors, prior to starting work within the Reservation, shall provide a TERO Compliance Plan for the project to the TERO Director.

8. Covered Employers shall use non-discriminatory job qualifications and selection criteria in filling employment positions subject to the requirements of this Chapter. No Covered Employer shall use any job qualification criteria that serve as barriers to Indian preference in employment, unless the Covered Employer can demonstrate that such criteria or requirements are required by business necessity.

9. Regardless of the qualifications of any non-Indian applicant, any Indian who demonstrates the necessary qualifications for an employment position subject to this Chapter:

    a. Shall be selected by Covered Employers in the case of hiring, promotion, transfer, upgrading, recall and other employment opportunities with respect to such position; and

    b. Shall be retained by Covered Employers in the case of a reduction-in-force affecting a certain class of positions until all non-Indians employed in that class of positions are laid-off.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 411.

§ 412. Core Crew

A. Covered Employers, may, if necessary, designate a core crew, which is exempt from the Indian preference requirements of this Chapter.

B. If a core crew is necessary, such core crew shall not exceed twenty-five percent (25%) of the total employees of the project/jobsite except as otherwise provided in paragraph (c) of this section.

C. The Director may, at his or her discretion, grant a Covered Employer a larger core crew designation upon a satisfactory demonstration by the Covered Employer that a larger core crew is necessary due to unique or specialized positions that are essential for the operation of the business. A Covered Employer may appeal the decision of the Director to the Board.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 412.

§ 413. Indian Preference in Contracting

(a) To the extent provided in section 415 of this Chapter, all Covered Employers shall give preference in contracting and subcontracting to Indian Certified Entities.

2. If one or more qualified Indian Certified Entities submit a bid that is within ten (10%) percent of the lowest competitive bid, the Covered Employer shall give one of the qualified Indian Certified Entities submitting such a bid the opportunity to negotiate an acceptable bid.

3. In accordance with sections 406 and 408 of this Chapter, the Director shall formulate and the Board shall approve regulations providing guidance on implementing the requirements of this section and for implementing Indian contracting preference when the awarding entity uses a method other than competition to select a contractor.

4. Whenever feasible, the Covered Employer shall submit to the Director, at least thirty (30) days in advance of the deadline for the submission of bids for a contract or subcontract, a list of all related contracts and subcontracts contemplated by the Covered Employer in order to enable the Director to give Indian Certified Entities the opportunity to prepare bids for such related contracts and subcontracts.

5. Any Covered Employer or Indian Certified Entity entering into a contract under the Indian preference provisions of this Chapter consents to the jurisdiction of the Band's Court of Central Jurisdiction for purposes of resolving any dispute arising under such contract, *provided* that nothing in this paragraph shall waive the sovereign immunity of the Band.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 413.

§ 414. Indian Certified Entities

The Board shall establish a system for certifying firms as Indian Certified Entities. This system shall include detailed provisions to ensure that entities that are <u>not</u> truly 51% or more owned by Indians, or in which daily management and control is <u>not</u> provided by Indians, are <u>not</u> granted Indian preference certification.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 414.

§415. Applicability of Indian Preference in Contracting

A. Except as otherwise provided in this section, the Indian preference in contracting required under section 413 of this Chapter shall apply only to contracts and subcontracts to be performed on the Reservation and shall not apply to the delivery of goods from a location outside the Reservation.

B. Notwithstanding any other provision in this Chapter, the Indian preference in contracting required under section 413 of this Chapter shall not apply to any contracts or subcontracts where the Board determines that application of that preference is specifically prohibited by Federal law.

C. The Indian preference in contracting required under section 413 of this Chapter shall not apply to contracts awarded by the Federal or a State government or their agencies or subdivisions. However, the Indian preference in contracting required under section 413 of this Chapter shall apply to all subcontracts awarded by a Federal or State contractor or grantee that is a Covered Entity, whether or not the prime contract was subject to that preference, except when the Board determines that application of that preference to that entity is specifically prohibited by Federal law.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 415.

§415A. Other Preferences to be Consistent

Any provision for Indian Preference in employment or contracting contained in any Band policy, including any policy of the Corporate Commission, must be consistent with the Indian Preference in 18 MLBSA sections 410 and 413, which provide first priority to Mille Lacs Band Members, second priority to members of another federally recognized Indian Tribe, and third priority to all others.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title IV, § 2.

SUBCHAPTER IV

Fees

Section

§ 416. Fees

Except as otherwise provided in section 417 of this Chapter, and except as prohibited by Federal law, the following fees are assessed on Covered Employers (other than the Band) for the privilege of doing business with the Band within the Reservation and to raise revenue for the operation of the TERO office and the enforcement of this Chapter.

(a) Every Covered Employer other than the Band that enters into a contract with the Band totaling $25,000.00 or more shall pay a one-time project fee of one half percent (0.5%) of the total amount of the contract. The Covered Employer shall pay the full amount of the fee before commencing work on the Reservation under the contract, *provided* that the Director may, for good cause shown by the Covered Employer, authorize the fee to be paid in installments over the life of the contract, and *provided further* that if the total amount of the contract is subsequently increased, the Covered Employer shall pay the additional amount due (0.5% of the increased amount of the contract) at the time of the increase. In all cases, the full amount shall be paid by the contractor upon the last pay application. A Covered Employer other than the Band that enters into a contract with the Band for less than $25,000.00 shall pay the 0.5% fee on the total amount of the contract if the contract is amended or enlarged to $25,000.00 or more within one (1) year after it was entered into. The fee imposed by this paragraph does not apply to a Covered Employer that enters into a subcontract made under a contract with the Band where the fee has been paid on the total amount of such contract.

(b) All Covered Employers other than the Band shall, as a condition of doing business on the Reservation under a contract with the Band, consent to the Band entity awarding the contract paying the fee imposed under paragraph (a) of this section directly to the TERO prior to the commencement of work under the contract and subtracting the amount of the fee from the payments due to the Covered Employer under the contract. Prior to making the payment, the Band entity awarding the contract shall provide the contractor with a form prepared by the TERO, in which the contractor grants its consent to the payment of the TERO fee based on the amount it is entitled to receive from the Band entity. A contractor shall not be permitted to commence work on the Reservation until it has executed this form, *provided* that this provision shall not apply if the imposition of the fee with respect to the contractor is prohibited by Federal law.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 416.

§ 417. Exempt Employers and Entities

The fees imposed in Section 416 of this Chapter shall not be collected where applicable provisions of a Federal contract or grant prohibit the collection of such fees.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 417.

§ 418. Fee Collection and Expenditure

(a) The TERO fees shall be collected by the Director pursuant to TERO regulations. The fees shall be paid over to the Band's Office of Management and Budget (OMB) and shall be credited to the TERO account. These funds shall be expended solely by the TERO, pursuant to a duly approved budget in order to carry out the purposes of this Chapter.

(b) The TERO Office, in conjunction with the Band's Department of Labor, shall prepare a quarterly report as to all employment and training expenditures. The report shall be made available to the Legislative Branch and Executive Branch each calendar quarter.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 418.

SUBCHAPTER V

Compliance Plan, Notice and Contracts

Section

§ 420. Compliance Plan

(a) All Covered Employers other than the Band shall, no less than ten (10) business days prior to commencing business on the Reservation, prepare and submit to the Director for his or her approval a plan setting out how the employer will comply with the requirements of this Chapter and its implementing regulations regarding Indian employment and Indian contracting preference. A Band-owned entity shall, no less than ten (10) business days prior to entering into a contract with a non-Band contractor to be performed on the Reservation, prepare and submit to the Director for his or her approval a plan setting out how the Band-owned entity will comply with the requirements of this Chapter and its implementing regulations regarding Indian employment and Indian contracting preference in connection with such contract. A Covered Employer already doing business on the Reservation on the effective date of this Chapter that has not prepared a Compliance Plan that has been approved by the Director under this section shall come into

compliance with the requirements of this section within thirty (30) business days of the effective date of this Chapter.

(b) The payroll records of all Covered Employers other than the Band shall be submitted to the Director within thirty (30) days of his or her request. Any Covered Employer required to submit a certified payroll pursuant to federal law under the Davis-Bacon Act shall submit a copy of this certified payroll record to the Director.

(c) All Covered Employers other than the Band are required to report relevant changes regarding their employees and employment positions to the Director when they submit the payroll records to the Director under paragraph (b) of this section, including but not limited to new positions, terminations, layoffs, promotions, and retirements.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 420.

§ 421. Notice to Proposed Contractors and Subcontractors

(a) Any Covered Employer, when issuing a notice of a proposed contract to be awarded by it, shall include provisions in the notice that inform a prospective contractor about the requirements established by this Chapter.

(b) Any Covered Employer, when issuing a notice of a proposed subcontract to be awarded by it, shall include provisions in the notice that inform any prospective subcontractor about the requirements established by this Chapter.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 421.

§ 422. Contract Language Imposing TERO Requirements

Any Covered Employer, when awarding a contract or subcontract, shall include provisions that impose the requirements of this Chapter on the contractor or subcontractor, such that the legal document will fully bind the party to comply with the requirements of this Chapter.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 422.

§ 423. Model Language

In order to implement the requirements of sections 421 and 422 of this Chapter, the Director shall provide to the Covered Employer:

(1) Model language that shall be included in the notice to prospective contractors and subcontractors, informing them of the requirements established by this Chapter; and

(2) Model language to be included in each contract and subcontract, imposing the requirements set out in this Chapter as terms of the contract.

§ 424. TERO Approval of Notices of Contracts and Contracts Awarded by Covered Employers

Each Covered Employer, prior to issuing notice of a contract to prospective contractors or subcontractors and prior to awarding a contract or subcontract, shall submit the proposed notice, contract or subcontract to the Director for approval.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 424.

SUBCHAPTER VI

Prohibition of Employment Discrimination

Section

§ 425. Prohibited Discrimination

Except as necessary to comply with the Indian employment preferences in Subchapter III of this Chapter, it shall be unlawful for a Covered Employer to do any of the following acts wholly or partially based on the actual or perceived race, color, religion, national origin, sex, age, sexual orientation or political affiliation of any individual, unless such characteristic is a bona fide occupational qualification:

1. fail or refuse to hire, or discharge, any individual, or otherwise discriminate against any individual, with respect to his or her compensation, terms and conditions, or privileges of employment, including promotion;

2. discriminate in recruiting individuals for employment, or

3. limit, segregate, or classify employees in any way that would tend to deprive them of employment opportunities.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 425.

§ 426. Religious Accommodation

It shall be an unlawful discriminatory practice for a Covered Employer to refuse to make a reasonable accommodation for an employee's religious or spiritual observance, unless doing so would cause undue hardship to the employer. A reasonable religious accommodation is any adjustment to the work environment that will allow the employee to practice his or her religion, such as flexible scheduling, voluntary substitutions or swaps, job reassignments and lateral transfers if approved by the authorized supervisor in accordance with the Band's Personnel Policy Manual. An accommodation would cause an employer undue hardship when it would require more than ordinary administrative costs, diminish efficiency in other jobs, infringe on other employees' job rights or benefits, impair workplace safety, cause co-workers to carry the accommodated employee's share of potentially hazardous or burdensome work, or conflict with another applicable law or regulation.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 426.

§ 427. Discrimination based on Disability

(a) It shall be unlawful for a Covered Employer to discriminate in any aspect of employment against a qualified individual with a disability because of that disability. However, it is not unlawful for a Covered Employer to use employment qualification standards, tests or selection criteria that are job-related and consistent with business necessity that make an individual with a disability ineligible for an employment position where the individual could not perform the job even with reasonable accommodation. Nothing in this section shall prohibit a Covered Employer from refusing to hire an individual with a disability for or from discharging such an individual from an employment position if the individual, because of the disability, is unable to perform the duties of the position, would perform the duties in a manner that would endanger the health and safety of the individual or others, or is unable to be at or go to or from the place at which the position is located.

(b) Subject to the provisions of paragraph (c) of this section, a reasonable accommodation for an individual's disability may include but is not limited to making facilities readily accessible to and usable by disabled persons, job restructuring, modifying work schedules, reassignment to a vacant position,

acquisition or modification of equipment or devices, and the provision of aides on a temporary or periodic basis.

(c) An accommodation is not required if it would impose an undue hardship on the employer's operation. In determining whether an undue hardship exists, employers may consider:

A. the overall size of the business or organization with respect to number of employees and the number and type of facilities;

B. the type of the operation, including the composition and structure of the work force, and the number of employees at the location where the employment would occur;

C. the nature and cost of the accommodation;

D. the reasonable ability to finance the accommodation at each site of business; and

E. documented good faith efforts to explore less restrictive or less expensive alternatives, including consultation with the disabled person or with knowledgeable disabled persons or organizations.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 427.

§ 428. Discrimination based on Pregnancy

A Covered Employer shall treat women affected by pregnancy, childbirth, or related medical conditions the same for all employment-related purposes, including receipt of benefits under fringe benefit programs, as other persons not so affected, but similar in their ability or inability to work. This requirement shall include, but is not limited to, the requirement that a Covered Employer must treat an employee temporarily unable to perform the functions of her job because of a pregnancy-related condition in the same manner as it treats other temporarily disabled employees.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 428.

§ 429. Harassment

(a) It shall be unlawful employment discrimination for a Covered Employer to subject an employee or applicant to unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature, as well as unwelcome comments, jokes, acts, and other verbal or physical conduct related

to race, color, national origin, religion, sex, age, sexual orientation or disability when:

a. Submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment;

b. Submission to or rejection of such conduct by an individual is used as the basis for employment decisions affecting such individual; or

c. Such conduct has the purpose or effect of substantially interfering with an individual's work performance or creating an intimidating, hostile or offensive working environment.

(b) A Covered Employer is responsible for acts of workplace harassment by its employees when the employer, its agents, or its supervisory employees knew of the conduct. A Covered Employer may rebut apparent liability for such acts by showing that it took immediate and appropriate corrective action upon learning of the harassment.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 429.

§ 430. Retaliation

A Covered Employer may not retaliate against an individual for bringing a good-faith claim against the employer for a violation of this Chapter or because the individual opposed a practice he or she believed to violate this Chapter or participated in an enforcement proceeding pursuant to Subchapter IX of this Chapter. The firing, demoting, harassing or taking of any other adverse action against an individual shall constitute retaliation within the meaning of this section. Any retaliation in violation of this section is itself a violation of this Chapter and is subject to enforcement proceedings pursuant to Subchapter IX of this Chapter.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 430.

SUBCHAPTER VII

Employee Wage and Hour

Section

435. Private Right of Action
436. Statute of Limitations
437. Guidance
438. Fringe Benefits

§ 431. Minimum Wage

Any employee who is employed by a Covered Employer shall be paid an hourly wage of not less than $7.50 per hour or the current United States Federal Government's minimum wage requirement, whichever is higher.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 431.

§ 432. Prevailing Wage

All Covered Employers are required to compensate construction laborers according to the prevailing wage set by the U.S. Department of Labor according to the Davis-Bacon Act for the county in which the work shall commence, unless the Board implements Band prevailing wage rates by rule, regulation or guideline, in which case the Band prevailing wage determination shall apply.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 432.

§ 433. Maximum Hours

No Covered Employer shall employ any of its employees for a work week longer than forty (40) hours unless such employee receives compensation for the additional hours at a rate not less than one and one-half times the regular rate at which the employee is compensated.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 433.

§ 434. Exemptions

The provisions of this Subchapter shall not apply with respect to any employee employed in a bona fide executive, administrative, or professional capacity, or any other exemption category in the Federal Fair Labor Standards Act (FLSA) of 1938, 29 U.S.C.A. § 213, including all future amendments thereto, or in regulations implementing that Act as promulgated by the U.S. Department of Labor.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 434.

§ 435. Private Right of Action

Any individual aggrieved under this Subchapter may seek retroactive payment of unpaid minimum wages or unpaid overtime compensation against a Covered Employer pursuant to the enforcement provisions set out in Subchapter IX of this Chapter.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 435.

§ 436. Statute of Limitations

Any action to secure unpaid wages or unpaid overtime compensation must be commenced within one (1) year after the date on which such wages or overtime compensation should have been included in an employee's paycheck, regardless of the date of actual discovery.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 436.

§ 437. Guidance

For the purposes of interpreting this Subchapter only, the Board and the Band's Court of Central Jurisdiction may look to the Fair Labor Standards Act of 1938, Title 29 of the United States Code, sections 201-219, its implementing regulations, and related case law for persuasive guidance, *provided* that nothing in this section shall be construed as an adoption by the Band of that Act or its implementing regulations.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 437.

§ 438. Fringe Benefits

A Covered Employee must give an employee engaged in construction the option of electing to receive any amount to which he or she is entitled as prevailing wage fringe benefits as a

part of his or her hourly pay unless it is determined that the application of this provision is specifically prohibited by Federal law. The prevailing wage fringe benefits to which the employee is entitled shall include, but not be limited to, the fringe benefit determination made by the U.S. Secretary of Labor pursuant to the Federal Davis Bacon Act or by the Board pursuant to this Chapter. Every Covered Employer engaged in projects subject to the Federal Davis-Bacon Act shall offer this option to each employee at the time he or she is first employed.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 438.

SUBCHAPTER VIII

Occupational Safety and Health of Employees

Section

§ 439. Duties of Employers and Employees

(a) Each Covered Employer shall:

(1) Furnish employees with a place and condition of employment that is free from recognized hazards that may cause or are likely to cause death or serious physical harm to the employees; and

(2) Comply with all occupational safety and health rules promulgated or adopted by the Band pursuant to this Subchapter.

(b) Each employee of a Covered Employer shall comply with all occupational safety and health rules promulgated or adopted pursuant to this Subchapter that are applicable to the actions and conduct of the employee.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 439.

§ 440. Adoption of Rules of Federal Occupational Safety and Health Administration

The rules and regulations of the Federal Occupational Safety and Health Administration

("OSHA") of the U.S. Department of Labor, including all future rules or amendments to existing rules, promulgated pursuant to the authority granted to OSHA by the Occupational Safety and Health Act of 1975, (29 U.S.C. sections 651-678) are hereby adopted by the Band and apply to all Covered Employers.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 440.

§ 441. Enforcement

(a) The Director is authorized to enforce the rules adopted in Section 440 of this Chapter pursuant to the enforcement provisions set out in Subchapter IX of this Chapter, to the extent his or her authority has not been preempted by Federal law.

(b) For any employer over whom the Director's authority to enforce the requirements of this Subchapter has been preempted by Federal law and for employers within the Reservation who are not subject to the jurisdiction of the Band, the Director shall work cooperatively with Federal and State officials responsible for enforcing occupational safety and health requirements applicable to such employers to ensure maximum enforcement.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 441.

SUBCHAPTER IX

Enforcement

Section

§ 442. Applicability

The provisions set out in this Subchapter shall be used to enforce the requirements set out in this Chapter, unless a specific enforcement provision is contained in a particular Subchapter, in which case the latter provision shall take priority.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 442.

§ 443. Investigations

(a) On his or her own initiative or on the basis of a complaint filed pursuant to section 444 or any other provision of this Chapter, the Director or any field compliance officer designated by the Director may make such public or private investigations within the Reservation as the Director deems necessary to:

a. ensure compliance with a provision in this Chapter;

b. determine whether any Covered Employer has violated any provision of this Chapter or its implementing regulations; or

c. aid in prescribing rules, regulations or policies hereunder.

(b) Separate from acting on any complaint filed, the Director shall conduct regular compliance reviews to ensure that all Covered Employers are complying with the requirements of this Chapter.

(c) The Director or any field compliance officer designated by the Director may enter the place of business or employment of any Covered Employer for the purpose of an investigation or compliance review, at said place of business or employment, in a manner consistent with good safety practices and with the orderly operation of the business activity. The Director or officer may:

a. interview any employee or agent of the Covered Employer ;

b. review and copy any documents; and

c. carry out any other activity the TERO Director or officer deems necessary to accomplish the investigation or compliance review, provided that, the Director or officer shall comply with the requirements of paragraph (e) of this section when reviewing or copying any confidential documents.

(d) For the purpose of investigations, compliance reviews, or hearings, which, in the opinion of the Director or the Board, are necessary and proper for the enforcement of this Chapter, the Director or the chairperson of the Board may administer oaths or affirmations, subpoena witnesses, take evidence, and require the production of

books, papers, contracts, agreements, or other documents, records or information that the Director or the Board deems relevant to the inquiry.

(e) Any State or Federal tax records, trade secrets, or privileged or confidential commercial, financial, or employment information subpoenaed or otherwise obtained pursuant to the provisions of this Chapter or used at a compliance hearing or subsequent appeal to the Band's Court of Central Jurisdiction: (1) shall be regarded as confidential records of the Board or the Court; (2) shall not be opened to public inspection; (3) shall be used only by the Director, the Board, or parties to a compliance hearing or subsequent appeal to the court; and (4) shall be used in a manner that, to the maximum extent possible consistent with the requirement of fairness to the parties, protects the confidentiality of the documents.

a. Any person, including but not limited to any employee or official of the Band, who willfully discloses such confidential records, except as expressly authorized by this Chapter or Court order, may be subject to a civil fine not to exceed $500.00.

(f) Documents obtained from a Covered Employer under this section shall be returned to the employer at the conclusion of any investigation, compliance review, or hearing, including the end of any available appeal period.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 443.

§ 444. Complaints

Any individual, group of individuals, business or organization that believes any Covered Employer other than the Band, or the Director or other TERO staff, has violated any requirement imposed by this Chapter or any regulation issued pursuant to it, may file a complaint with the Director or, if the complaint is against the Director or other TERO staff, with the chairperson of the Board. The complaint shall be in writing and shall provide such information as is necessary to enable the Director or an independent party appointed by the Board to carry out an investigation. Within fifteen (15) days after receipt of the complaint, and on a regular basis thereafter, the Director or the independent party appointed by the Board shall provide the complaining party with a written report on the status of the complaint. The Director or the independent party appointed by the Board shall, within thirty (30) days of the date on which a complaint is filed, complete an investigation of the complaint. Upon request, the Board may grant the Director or the independent party appointed by the Board an extension of no more than thirty (30) days to complete the investigation. If upon investigation the Director or the independent party appointed by the Board has reason to believe a violation has occurred, he or she shall proceed pursuant to the provisions of this Chapter.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 444.

§ 445. Complaints against the Band

Any individual who believes the Band, including any office, division, branch, subsidiary entity or commercial enterprise of the Band other than the Director or other TERO staff, has violated any requirement imposed by this Chapter or any regulation issued pursuant to it may file a complaint with the Director, but only after the individual has either:

(1) Filed a complaint with, and exhausted the administrative remedies provided by the involved office, division, branch, subsidiary entity, or commercial enterprise of the Band, or

(2) Filed a complaint with the involved office, division, branch, subsidiary entity, or commercial enterprise of the Band and sixty (60) days have passed since filing and no meaningful action has been taken on the complaint by that office, division, subsidiary entity, or commercial enterprise.

Upon receiving a complaint that meets the requirements of this section, the Director shall proceed in the same manner as he would on a complaint filed pursuant to section 444 of this Chapter, except that the Director and the Board shall take into consideration any written decision concerning the complaint issued by the office, division, branch, subsidiary, entity or commercial enterprise of the Band that is the subject of the complaint.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 445.

§ 446. Resolution of Violations

- If, after conducting an investigation or compliance review, the Director has reasonable cause to believe a violation of this Chapter or any regulation issued pursuant to it has occurred (including a failure by a party to comply with a subpoena or other request during an investigation), the Director shall notify the Covered Employer or Covered Entity in writing, delivered by registered mail, specifying the alleged violations.

- The Director shall make a good faith effort to achieve an informal settlement of the alleged violation by meeting with the Covered Employer and taking other appropriate action.

- If the Director is unable to achieve an informal settlement, he shall issue a formal notice of non-compliance, which shall advise the Covered Employer of its right to

request a hearing. The formal notice shall set out the nature of the alleged violation and the steps that must be taken to come into compliance. It shall provide the Covered Employer with a reasonable time, which shall not be less than ten (10) days from the date of service of such notice, to comply. If the Director has reason to believe that irreparable harm will occur during that period, the Director may require that compliance occur in less than ten (10) days.

- If the Covered Employer disputes the violation, as provided for in the formal notice, the Covered Employer may request a hearing before the Board, which shall be held no sooner than five (5) days and no later than thirty (30) days after the date for compliance set forth in the formal notice. The Director or the Covered Employer may ask the Board to hold the hearing sooner. The Board shall grant such a request only upon a showing that an expedited hearing is necessary to avoid irreparable harm.

- If a Covered Employer fails or refuses to comply and does not request a hearing, the Director shall request the chairperson of the Board to convene a session of the Board for the purpose of imposing sanctions on the Covered Employer. This session shall take place as soon as necessary to avoid irreparable harm.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 446.

§ 447.Hearing Procedures

A. Any hearing held pursuant to this Chapter shall be conducted by the Board. The hearing shall be governed by rules of practice and procedure that are adopted by the Board. The Director and the Covered Employer shall have the right to call and cross examine witnesses, as well as present physical evidence. The Board may consider any evidence that it deems relevant to the hearing. The Board shall not be bound by technical rules of evidence in the conduct of hearings under this Chapter, and the presence of informality in any proceeding, as in the manner of taking testimony, shall not invalidate any order, decision, rule or regulation made, approved, or confirmed by the Board. The Director shall have the burden of proving that the Covered Employer violated this Chapter by a preponderance of the evidence. An audio recording shall be made of each hearing. No stenographic record of the proceedings and testimony shall be required except upon arrangement by, and at the cost of, the Covered Employer.

B. The Director shall prosecute the alleged violation on behalf of the TERO. During the hearing and at all stages of the enforcement process provided for in this Chapter, the Director may be represented by the Band Solicitor General's Office. If the Covered Employer is an office or subsidiary of the Band Government and the Band Solicitor

General's Office determines it would create a conflict to represent the Director, the Solicitor General may obtain outside legal counsel for the Director.

C. The Board shall sit as an impartial judicial body. The Board shall establish procedures and safeguards to ensure that the rights of all parties are protected and that there is no improper contact or communication between the Board and the Director during the hearing phase of the enforcement process.

D. If the Board requires legal assistance during the hearing process, or at any other phase of the enforcement process, and it would be a conflict of interest for the Band Solicitor General's Office to provide such representation, the Solicitor General shall attempt to retain outside legal counsel.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 447.

§ 448. Sanctions

A. If, after a hearing, the Board determines that the alleged violation of this Chapter or a regulation issued pursuant to it has occurred, and that the party charged has no adequate defense in law or fact, or if a party was issued a formal notice of non-compliance and failed to request a hearing, the Board may:

   a. Deny such party the ability to commence business on lands owned by or for the benefit of the Band or its members on the Reservation (provided that the party is not an office, division, branch, subsidiary, entity or commercial enterprise of the Band);

   b. Suspend such party's business activity on lands owned by or for the benefit of the Band or its members on the Reservation (provided that the party is not an office, division, branch, subsidiary, entity or commercial enterprise of the Band);

   c. Terminate such party's business activity on lands owned by or for the benefit of the Band or its members on the Reservation (provided that the party is not an office, division, branch, subsidiary, entity or commercial enterprise of the Band);

   d. Deny the ability of such party to conduct any further business with the Band or on lands owned by or on behalf of the Band or its members on the Reservation (provided that the party is not an office, division, branch, subsidiary, entity or commercial enterprise of the Band);

e. Impose a civil fine of up to $500.00 per violation per day following the date for compliance;

f. Order such party to make payment of back pay or other damages to any aggrieved party;

g. Order such party to dismiss any employees hired in violation of the Band's employment rights requirements;

h. Reimburse any party who improperly paid a TERO fee or overpaid said fee, but no interest shall be paid in such cases; and/or

i. Order the party to take such other action as is necessary to ensure compliance with this Chapter or to remedy any harm caused by a violation of this Chapter, consistent with the requirements of the laws of the Band and the Indian Civil Rights Act, 25 U.S.C. 1301, *et seq.*

B. The Board's decision shall be in writing and shall be served on the charged party by registered mail or in person by an employee of the TERO no later than thirty (30) days after the close of the hearing. The decision shall contain findings of fact sufficient to support the Board's ordered relief, or lack thereof. Upon a showing by the Director or the charged party that further delay will cause irreparable harm, the Board shall issue its decision within ten (10) days after the close of the hearing. If the party fails to comply with the Board's decision within ten (10) days, the Director may file for an injunction in the Band's Court of Central Jurisdiction. The Court shall grant such injunctive relief as is necessary to prevent irreparable harm pending an appeal or expiration of the time for the party to file an appeal.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 448.

§ 449. Appeals

1. An appeal to the Band's Court of Central Jurisdiction may be taken from any formal order of the Board by any party adversely affected thereby, including a

complainant. To take such an appeal, a party must file a notice of appeal in the Band's Court of Central Jurisdiction and serve a copy of the notice of appeal on the Director and any other party to the proceeding no later than twenty (20) days after the party receives a copy of the Board's decision.

2. The notice of appeal shall:

    a. Set forth the order from which the appeal is taken;

    b. Specify the grounds upon which reversal or modification of the order is sought;

    c. Be signed by the appellant or his legal representative; and

    d. Comply with any other requirements for actions filed in the Band's Court of Central Jurisdiction, as established by that court.

3. Except as provided elsewhere in this Chapter, the order of the Board shall be stayed pending the determination of the Court. The Director may petition and, for good cause shown, the Court may order the party filing the appeal to post a bond sufficient to cover the monetary damages that the Board assessed against the party or to assure the party's compliance with other sanctions or remedial actions imposed by the Board's order in the event that order is upheld by the Court.

4. The Court shall review the decision of the Board de novo.

5. If a party has failed to come into compliance with (1) a decision of the Board from which no appeal has been taken, or (2) a decision of the Court, within 20 days after receipt of notice of such decision, the Director shall petition the Court and the Court shall grant such orders as are necessary and appropriate to enforce the orders of the Board or Court.

6. If the order of the Board is reversed or modified, the Court shall specifically direct the Board as to further action the Board shall take in the matter, including making and entering any order or orders in connection therewith, and the limitations, or conditions to be contained therein.

Historical and Statutory Notes

Source: Band Ordinance 15-14, Title III, Exhibit A, § 449.

§ 450. Monitoring

If, when carrying out inspections at work sites or otherwise carrying out their responsibilities under this Chapter, the Director or TERO compliance officers have reason to believe that a requirement of a Tribal, Federal, state or local law, act or regulation, other than the ones included in this Chapter, may have been violated by a party, the Director and TERO compliance officers are authorized to document such possible violation(s), to report said violation(s) to the appropriate enforcement agency, and, to the extent that resources permit and the Director determines it to be appropriate, assist that agency in its attempt to investigate and cure the possible violation.

MILLE LACS BAND OF OJIBWE
Tribal Employment Rights Office
43408 Oodena Drive
Onamia, MN 56359
Email: tero.director@icloud.com
Office Phone: 320-532-4778 - Cell Phone: 320-630-2617

TERO COMPLIANCE PLAN AND CONDITIONS FOR CONTRACTORS

PLAN SHOULD BE SUBMITTED 10 BUSINESS DAYS PRIOR TO EXPECTED START DATE OF PROJECT

Name of project: _____

Location of project: _____

Scope of work: _____

Expected start date of project: _____

Estimated completion date of project: _____

Company name and business address: _____

_____

Name of company owner: _____

Company's designated Project Manager: _____

Phone: _____ **Fax:** _____ **Email:** _____

MLB/MLCV/GCML/GCH designated Project Manager: _____

Phone: _____ **Fax:** _____ **Email:** _____

CHECK ONE: **General Contractor:** _____ **Sub-Contractor:** _____

Total Contract Value: _____ **TERO Fee (0.5%):** _____
(General Contractor Only) (General Contractor Only)

Total number of employees for this project (including core crew and crew with TERO): _____

CORE CREW DESIGNATION

No more than 25% of the total crew may be designated as Core Crew. Definition of Core Crew: "A member of the employer/contractor/subcontractor's crew who is a regular, permanent employee and is also in a supervisory or other key position such that the employer would face a serious financial loss if that task were assigned to a person unknown to the employer. The fact that the employee had worked for the employer on previous projects shall not qualify that employee as a regular, permanent employee."

CORE CREW NAME	JOB CLASSIFICATION	American Indian (TERO): Yes / No

NON-CORE CREW EMPLOYEE ROSTER

List ALL workers that will be on-site for this project

NON-CORE CREW NAME	JOB CLASSIFICATION	American Indian (TERO): Yes / No

***** Any employer NOT submitting an acceptable Compliance Plan may be denied the right to commence or continue doing work on lands under the jurisdiction of the Non-Removable Mille Lacs Band of Ojibwe Indians. I understand Mille Lacs Band Indian Employment Rights (Mille Lacs Band Statute; Title 15, Chapter 4) and will uphold my duty as an employer to be in TERO compliance. I will notify the TERO office at least 10 business days before starting this project and will re-submit another TERO Compliance Plan for approval if any changes are needed to my TERO Compliance Plan. *****

Contractor Signature | **TERO Director Signature**

Date | **Date**

_____ Approved _____ Denied

CONSTRUCTION CONTRACT between MILLE LACS BAND of OJIBWE (OWNER)
And (CONTRACTOR)

The Project # is:

CONTRACT entered into as of the day of in the year .

BETWEEN the Owner:
Mille Lacs Band of Ojibwe
43408 Oodena Drive
Onamia, MN. 56359

and the Contractor

OMB APPROVAL
Date:
Signature:
Vendor #
Oblg #
Account #
Contract Sum: $_____

OSG APPROVAL
Date:
Signature

ADMINISTRATION POLICY BOARD
Date:
Signature

BAND ASSEMBLY APPROVAL
Date:
Signature

THIS CONTRACT AND ALL OF ITS TERMS AND CONDITIONS ARE TO BE GOVERNED UNDER THE LAWS OF THE MILLE LACS BAND OF OJIBWE INDIANS.

Section 1
NOTICE.
Inclusion of address, phone, fax and email are mandatory

(A) The Owner's representative is:
[Name] -Contracting Officer
[Address]
[Phone]
[Fax]

Contracting Officer's designee:
[Name] -- C.O. Designee (Project Coordinator or Manager)
[Address]
[Phone]
[Fax]

The Contractor's representative(s) is (are):
[Name]
[Address]
[Phone]
[Fax]
[Email]

The Contractor's representative(s) is (are):
[Name]
[Address]
[Phone]
[Fax]
[Email]

(B) All notices are to be sent to the stated representatives, unless a change in the information above is required. If a change in the above referenced information is required, then a notice of a change of representatives must be provided in writing within five (5) working days, including any change of address, phone, fax or email.

(C) Notices to either party shall be given by addressing the communications to the stated representative. Any notice given is effective upon receipt by U.S. Mail, postage prepaid, or upon personal delivery with acknowledgement of receipt.
Notice may also be given through electronic format, by fax or email, using the attached coversheet entitled Legal Notice.

Section 2
WORK/WORK STATEMENT/SCOPE

(A) Objectives: to precisely identify desired end objectives of the project and associated requirements.

(B) Definitions: For purposes of this contract, the term "Project" will be synonymous with the word "Work." Work shall be defined as the tasks completed in order to achieve the final creation or renovation of the desired structure.

(C) Please attach a **Schedule of Values** that outlines the project first in general terms and dates, and then provides a detailed breakdown of each construction phase, the materials needed for each phase, the cost of those materials and the estimated completion date for each. Schedules of values, which should be considered an itemized list of supplies, labor and completion phases should provide the Contracting Officer with a clear understanding of the anticipated percentage of completion for each phase and its cost. Schedules of Values need to be attached to this document upon completion of the Work.

See Work Project No. and project address

(C) Responsibility: identify all Mille Lacs Band and Contractor participation or cooperation that is needed for the success of the project, as well as the nature and extent of all task responsibilities. All tasks requiring Mille Lacs Band support (e.g. Band-furnished equipment, facilities, materials or other government assistance) should be stated specifically.

(D) Milestones/Schedule of Values: generate a schedule for the sequence of tasks to be performed by a contractor and a similar schedule for related responsibilities of the Owner.

Section 3
CONTRACT SUM

The Contract Sum is , subject to adjustments as determined by the Owner or Contract Officer.

Section 4
DATE OF COMMENCEMENT AND CONTRACT TIME

The date of commencement of the Work is the date the Mille Lacs Band Office of Management and Budget (OMB) issues the 1st payment after receipt of Contractor's 1st Application for Payment. The Contract Time shall be measured from the date of commencement.

Section 5
PAYMENTS
Progress Payments
(A) **All pay applications for payment are subject to the Office of Management and Budget (OMB) processing schedule. Once an application for payment is received, and Certificates for Payment issued by the Owner, along with the approval of the Commissioner of Community Development, or his/her designee, the Owner shall make payment within thirty (30) days as provided below.**

Project Manager shall choose one of the following payment schedules marked in subsection (B), all other provisions of this section shall still apply.

( ) (B) Payment schedule based on a **Schedule of Values** that will be determined by the attachment of an Application and Certificate of Payment as well as a Continuation Sheet. Each of these documents will be considered part of the overall contract as approved by the Contracting Officer or his/her designee.

( ) (B) (2) this *option is available only for road construction contracts.* Unit price work. Work to be paid for on the basis of unit prices in an attached sheet. Unit price work will be subject to an attached set of conditions.

Substantial Completion
(C) The Contractor shall achieve Substantial Completion of the Work not later than .
(Insert expected date of final completion. Attach copy of document indicating formal approval/ratification date or specifically cite completion date).

(D) The Substantial Completion date of the Work is the date when construction is sufficiently complete so that the Owner can occupy or utilize the building for its intended purpose. Only two (2) extensions may be given for substantial completion of a project.

(E) The Work is not substantially completed if it fails to conform to approved Drawings and Specifications, any Change Order, or if construction defects remain that prevent occupancy or utilization of the building.

Liquidated Damages
(F) Liquidated Damages. Should the Contractor fail to substantially complete the Work within the time allowed in this Contract, the Contractor shall pay the owner as liquidated damages no more than $_____ per day for each consecutive calendar day that Substantial Completion remains unmet, but not to exceed $_____ per week. Liquidated damages shall be assessed according to a graduated scale listed as follows:

Contract Type	Contract Price	Liquidated Damages
Renovation only	$0.00 -- $50,000.00	$100.00 per day completion unmet
	$50,001.00 – higher	$200.00 per day completion unmet
Residential (full construction)	$0.00 – 150,000.00	$300.00 per day completion unmet
	$150,001.00 – higher	$400.00 per day completion unmet
Commercial (full construction)	$0.00 --	$400.00 per day completion unmet

If the Contractor and Owner have mutually agreed to a signed Change Order and/or Addendum granting an extension of time to reach Substantial Completion, then the liquidated damages shall be calculated from the date agreed to in the Addendum and/or Change Order. In no way shall the costs for liquidated damages be construed as a penalty. Owner and Contractor agree that the sum is a reasonable and proper measure of the damages that cannot be calculated with any degree of certainty, which the Owner will sustain if the Contractor fails to substantially complete the Work according to the Schedule of Values and/or Substantial Completion deadlines in this Contract.

(G) In the event that the contractor fails to cure defects in performance as provided in section 8 of this Contract, the Owner shall have the right, but not the obligation, to complete the punch list items. Final Payment in the amount of ($) shall be made when punch list items are done and keys are exchanged. Final Payment (RETAINAGE) shall be paid within thirty (30) days of i) completion of the punch list items in a good and workmanlike manner and (ii) submission of all closeout documentation to the Owner.

(H) Lien Waivers.

(1) For each Application for Payment, the Contractor shall provide lien waivers for the General Contractor, Subcontractors, Sub-subcontractors, and suppliers for Work performed since the previous payment application was submitted to the Owner before the Contractor has the right to receive any payment on its current Application for Payment. All lien waivers shall be provided in the form attached as Exhibit A.

(2) In the event Contractor fails to pay any Subcontractors, Owner shall have the right, but not the obligation, to pay the Subcontractor directly upon receipt of a lien waiver from the Subcontractor, and subtract the amount paid from the Contract Sum.

i. Any payments made by Owner pursuant to this paragraph will be subject to a reasonable administration fee which will be deducted from the Contract Sum. Contractor shall be notified by a written statement when an administration fee is deducted from the Contract Sum.

(I) Changes.

(1) The Band's Contracting Officer may at any time, in writing, make reasonable and /or necessary changes within the general scope of the contract.

(2) If any change is requested by the Contractor that causes an increase or decrease in the cost of, or the time required for performance of any part of the Work under the contract, the Contract Officer is authorized to make an equitable adjustment of a maximum of five percent (5%) in the contract sum. An equitable adjustment will be a fair adjustment made within a reasonable time. Adjustment of a contract in excess of five percent (5%) of the Contract sum must be approved by the Band Assembly for contracts over $100,000.00. The Contracting Officer may also make an equitable adjustment in the schedule of values. Failure of the parties to agree to any adjustment shall be covered under the Disputes Clause as a claim. However, nothing in this section or the Disputes Clause shall excuse the Contractor from proceeding on the work.

(3) Change order mark-up limit of 10% on all labor and materials.

(4) No payments will be made for additional work performed under the terms of this contract without written approval from the Owner prior to work being performed.

Section 6

TERMINATION BY OWNER FOR CONVENIENCE

(A) The Owner may at any time and for any reason terminate this Contract for convenience. A termination notice citing this section will be delivered in writing to the Contractor's representative and will set forth a date upon which the termination will be effective.

(B) Upon receipt of this notice from the Owner, the Contractor shall immediately cease to incur any costs that may be chargeable to the Owner under this Contract.

(C) In a termination for convenience, the contractor shall also prepare to discontinue performance of the Work in the manner set out below.

1. The Contractor agrees that upon receipt of notice from the Owner it shall:
   i. cease any and all Work under the Contract in the manner directed by the Owner in the notice;
   ii. take whatever action(s) necessary, or which may be directed by the Owner, for the protection and preservation of the Work;
   iii. terminate all existing subcontracts and purchase orders except for work directed in the notice to be performed prior to the effective date of termination;
   iv. enter into no further subcontracts and purchase orders; and
   v. assign subcontracts and purchase orders to the Owner as directed.

(D) Following a termination for convenience, the Owner shall be responsible only for payment for services rendered before the effective date of termination. The Owner agrees that it will pay the Contractor within thirty (30) calendar days from the Contractor's submission of a final Application for Payment to the OMB, if the application is approved by the Owner.

(E) Under no circumstance shall the Owner be charged equipment rental in excess of seventy-five percent (75%) of the value of that item (or for any item with a value of $500 or less) acquired by the Contractor to the date of termination. The Owner will not pay termination charges for any subcontracts, and the Owner shall not be liable for any lost profits or consequential damages.

i) From this amount shall be subtracted the aggregate of all previous payments made by the Owner and other credits due to the Owner. The Owner shall be immediately refunded any amount by which payments to the Contractor exceed the amount of payment to which the Contractor is entitled.

(F) To the extent that the Owner elects to accept legal assignment of subcontracts and purchase orders (including rental agreements), the Contractor shall execute, deliver and take all steps necessary to effect the legal assignment of such subcontracts, purchase orders and agreements prior to receiving the payments referred to in this Section.

Section 7
TERMINATION BY OWNER FOR CAUSE

(A) The Owner may terminate this contract for cause upon default by the Contractor. Any notice of default will be delivered to the Contractor, and the Contractor's Surety, in writing. The Owner's right to terminate a contract may be exercised if the Contractor does not cure such default within ten (10) business days after receipt of notice from the Contracting Officer specifying default. More time to cure may be provided if deemed reasonable by Owner.

(B) The Contract may be terminated for cause if the Contractor shall be deemed in default. The Contractor shall be deemed in default if the Contractor:

1. Persistently or repeatedly fails or refuses to supply enough properly skilled workers or proper materials;
2. Fails to make payment to Subcontractors for materials or labor in accordance with respective agreements between the Contractor and Subcontractors;
3. Persistently disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction over the Work;
4. Fails to deliver the supplies or perform the services within the time specified in the contract or any agreed upon extension;
5. Fails to make progress, so as to endanger performance of the contract;
6. Fails to maintain the appropriate insurance under § 13 and § 15 of this Contract;
7. Fails to perform any of the other provisions of the contract; or
8. Violates the requirements contained in the Mille Lacs Band of Ojibwe Commercial Practices Act, Chapter 5 regarding TERO Compliance. See 18 MLBSA § 401-428; or
9. Is otherwise in material breach of a provision of this Contract.

(C) Any complaint received by the Administration Policy Board regarding a contractor's failure to comply with TERO rules, will be investigated immediately. If the complaint is determined to be worthy of further consideration, the Administration Policy Board shall notify the parties of an appointed time and day for a hearing and settlement discussions. At this time, the Band may terminate the contract for convenience immediately. If settlement is not achieved, the Administration Policy Board may render its own decision based on the evidence and testimony presented. Any decision of the Administration Policy Board under this statute may be appealed to the Court of Central Jurisdiction under 24 MLBSA § 2501. If the Administration Policy Board issues a final decision rendering the complaint against the contractor unfounded, the contractor may seek reimbursement of the contract sum.

(D) This Contract will be terminated for cause if, after written notice and hearing, the Administration Policy Board determines that the Contractor or its representative offered a gratuity to an official, agent or employee of the Band, and intended by the gratuity to obtain a contract or favorable treatment under a contract.

(E) If the Owner terminates this contract, it may acquire supplies or services similar to those terminated to complete the Work. The Contractor will be liable to the Owner for any dollar amounts exceeding the Contract Sum for those supplies or services required to finish the Work.

(F) When the Owner terminates the Contract for one of the reasons stated in subsections A-D of this section, the Contractor shall not receive further payment until the Work is finished.

(G) When any of the above reasons exist, the Owner may without prejudice to any other rights or remedies of the Owner:

1. take possession of the site and of all materials, equipment, tools, and construction equipment and machinery owned by the Contractor;
2. accept assignment of subcontracts; and
3. finish the Work by whatever reasonable method the Owner may deem expedient.

(H) If the unpaid balance of the contract sum exceeds the costs of finishing the Work, including compensation for administrative and necessary consultant services, and other costs incurred by the Owner, then such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid shall be certified by the Owner, upon application, and this obligation for payment shall survive termination of the Contract.

(I) Upon request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

(J) If, after termination, it is determined that the Contractor was not in default, or that the default was excusable or justified, the termination shall be deemed a termination for convenience, and the right and obligations of the parties shall be the same as if the termination had been issued for the convenience of the Band.

Section 8
SUSPENSION BY THE OWNER FOR CONVENIENCE

(A) The Owner may, for convenience, order the Contractor to suspend the Work for such a period of time as the Owner may deem appropriate. The suspension notice will be communicated by the Owner's representative and will be effective immediately. A confirmation of this suspension will be delivered in writing to the Contractor's representative within twenty-four (24) hours from the decision to suspend.

(B) In the event of a suspension under this section, the Contract Sum will be adjusted for increases in cost. Adjustments to the Contract Sum shall include lost profit.

(C) The Contract Time will be adjusted to coincide with any Work delay caused by suspension unless the Contract Time is subject to non-adjustment for the reasons set out below.

1. No adjustment of Contract Time shall be made to the extent that performance of the Work is, was, or would have been suspended, delayed or interrupted by another cause for which the Contractor is responsible; or

2. No adjustment of contract time shall be made if an equitable adjustment is made under another provision of the contract.

Section 9
TERMINATION BY THE CONTRACTOR

(A) The Contractor may terminate this contract if the Work is stopped for a period of forty-five (45) calendar days through no act or fault of the Contractor, subcontractors, their agents or employees or any other persons or entities performing portions of the Work. The Contractor may also terminate the contract if the Work is stopped for a period of thirty (30) calendar days, through no act or fault of the Contractor, subcontractors, their agents or employees, for any of the following reasons:

1. issuance of an order of a court or other public authority having jurisdiction which requires all Work to be stopped;
2. an act of government, such as a declaration of national emergency which requires all work to be stopped;
3. because the Owner has not issued a Certificate of Payment and has not notified the Contractor of the reason for withholding certifications; or
4. because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract.

(B) The Contract may be terminated if the Work is stopped for a period of thirty (30) consecutive days through no act or fault of the contractor, subcontractors, their agents, employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has persistently failed to fulfill the Owner's obligations under the Contract with respect to matters important to the progress of the Work.

(C) The Contractor may terminate the contract if, through no act or fault of the Contractor, subcontractors, their agents, employees or any other persons or entities performing portions of the Work under contract with the Contractor, as a result of repeated suspensions, delays or interruptions of the entire Work by the Owner, the Work is delayed for more than one-hundred percent (100%) of the total number of days scheduled for completion, or 120 working days in any 365 day period, whichever is less.

(D) If one of the reasons described in subsections (A) or (C) exists, the Contractor may, upon ten (10) calendar days written notice to the Owner, terminate the contract and seek to recover from the Owner payment for work executed and for proven loss with respect to materials, equipment, tools, construction equipment and machinery, including reasonable overhead, profits and damages.

Section 10
DISPUTE RESOLUTIONS

(A) The Contractor agrees that all disputes which arise under this Contract, to the exclusion of subsections 8(C) and 8(D), will be adjudicated in the Court of Central Jurisdiction for the Mille Lacs Band. The contractor also agrees that, by signing this contract, the contractor consents to the personal jurisdiction of the Court of Central Jurisdiction. This contract will be deemed a service contract provided for the needs of Band members. *See* 5 MLBSA 113(e). The Contractor agrees that all interpretations of this Contract will be based upon the laws of the Mille Lacs Band.

(B) Any claim by the contractor shall be submitted in writing to the Band's Contracting Officer for a written decision. A claim by the Band against the Contractor, to the exclusion of subsections 8(C) and 8(D), shall be subject to a written decision by the Contracting Officer.

1. "Claim" as used in this section, means a written decision, demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of the contract terms, or other relief arising under or relating to the contract.

(C) A voucher, invoice or other routine request for payment that is not in dispute when submitted is not a claim. It may be converted to a claim, by complying with the submission requirements of this section, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

(D) The Contracting Officer's decision shall be final unless the Contractor appeals the matter within ten (10) days of the Contracting Officer's decision to the Court of Central Jurisdiction for the Mille Lacs Band. The Court shall review the decision of the Contracting Officer under an arbitrary and capricious standard.

(E) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal or action under the contract, and comply with any decision of the Contracting Officer or the Band's Court of Central Jurisdiction.

Section 11
ADDITIONAL REMEDIES

(A) Notwithstanding the remedies provided in other paragraphs of this Contract, the Owner reserves the right to commence legal action against the Contractor seeking monetary damages, liquidated damages, declaratory or injunctive relief as allowed by law, or any other relief in order to enforce any of its rights under this agreement.

(B) Except for defaults of subcontractors, the Contractor shall not be liable for any excess costs if the failure to perform the contract arises from causes beyond the control and without the fault or negligence of the Contractor.

(C) If the failure to perform is caused by the default of a subcontractor and if the cause of the default is beyond the control, and without the fault or negligence of either the Contractor or the subcontractor, the Contractor shall not be liable for any excess cost for failure to perform, unless the subcontracted supplies or services were obtainable from other sources in sufficient time for the Contractor to meet the required delivery schedule.

(D) The Owner shall pay the contract sum for completed services performed and accepted. The Owner may withhold from these amounts any sum the Contacting Officer determines to be necessary to protect the Owner against loss. Failure to agree on such a sum will be a dispute under the Disputes Clause.

(E) If, after termination, it is determined that the Contractor was not in default, or that the default was excusable, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the Owner.

(F) The right and remedies of the Owner in this clause are in addition to any other rights and remedies provided by the law or under the contract.

Section 12
JURISDICTION

The Court of Central Jurisdiction is hereby granted subject matter jurisdiction for any cause of action which arises from this contract. *See* 5 MLBSA 111. Contractors, by signing this agreement, consent to the personal jurisdiction and the subject matter jurisdiction of the Court of Central Jurisdiction. Contractors seeking relief for claims shall be afforded the opportunity to seek relief in tribal court only to the extent of the contents of a properly filed claim under this contract's dispute resolution section. No claims will be permitted beyond the Contract Sum.

Section 13
INDEMNIFICATION – REIMBURSEMENT- INSURANCE – WORKERS COMPENSATION – SUBROGATION WAIVERS

(A) To the fullest extent permitted by law, the Contractor agrees to indemnify and hold harmless the Mille Lacs Band of Ojibwe and all its members, entities, officers, agents and employees, from all suits, liens, charges (including attorneys' fees, costs & disbursements), damages, and liabilities relating to personal or bodily injury, sickness, illness, death, and damage to or destruction of property in any manner connected with the execution of the Work provided for in this Contract.

(1) Indemnification for property damage under this section consists of any work or omission of Work contracted to be done by Contractor or his subcontractors, employees, or agents.

(2) Indemnification for the aforementioned damage could also occur when the Contractor, Subcontractors or suppliers use materials, equipment, instrumentalities, or other property, regardless of whether or not harm is caused in part by a party indemnified. Excluded from this list are claims, loss, damage, costs or expenses resulting from risks that the Owner is required to insure against.

(3) The Contractor also agrees, without limiting any indemnification under subsection (1), to indemnify and hold harmless the Owner, its agents and employees, from such claims, damages, or liabilities for which the Owner, its agents and employees may be liable.

(4) The Contractor agrees to reimburse the Owner, its agents and employees for all costs and disbursements, including attorneys' fees, paid or incurred to enforce the provisions of this section.

(5) The Contractor, furthermore, agrees to obtain, maintain, and pay for such general liability coverage and endorsements (including product and completed operations coverage) as will ensure the provisions of this section.

(B) In claims against any person or entity indemnified under subsection (A) by an employee of the Contractor, a subcontractor, or anyone directly or indirectly employed by them, the indemnification obligation under subsection (A) shall not be limited by an amount or type of damages, compensation or benefits payable under workers' compensation acts, disability benefit acts or other employee benefit acts.

(C) To the fullest extent permitted by law, and without limiting any other indemnification obligation of the Contractor, the Contractor shall indemnify and defend the Mille Lacs Band of Ojibwe and all of its members, entities, directors, officers, assigns, lenders, agents and employees from any claims, liens, charges (including attorneys' fees), or encumbrances (including but not limited to mechanic's liens or bond claims) in connection with the performance of the Work. This indemnification shall not include instances where the Owner has failed to make payments when required under the Contract Documents. The Owner shall be entitled to recover from the Contractor all costs and expenses incurred in enforcing this Agreement, including attorneys' fees. Upon request of the Owner, the Contractor shall within 60 days remove any liens filed against the Owner or its property. If the Contractor fails to remove the liens, then the Owner is authorized to remove or satisfy any such liens, and the Contractor shall pay to the Owner all costs and damages incurred. The Contractor is not required to insure over the indemnity obligations to the extent such obligations are imposed in this subsection (C).

Section 14
BONDING REQUIREMENT

a. In construction contracts that are federally funded or deemed commercial, bonding is required. These types of contracts shall demand a performance bond of not less than twenty percent (20%) of the total contract price, but not to exceed $500,000.00. A performance bond requirement is to ensure that, if a contractor defaults, the Band may request that the surety pay the expenses incurred to complete the construction contract.

b. In addition, all construction contracts identified as federally funded or commercial shall be covered by a payment bond equal to one payment installment to cover subcontractors/ suppliers as determined by the Contracting Officer or his agents. The payment bond must contain language stating that if the contractor fails to make a payment to its subcontractors/suppliers, the surety will make the necessary payment.

c. For all Band funded residential construction projects, a performance bond is required for contracts in excess of $50,000.00. The performance bond shall be at a minimum twenty (20%) percent of the contract price, but not in excess of $500,000.00.

See Miller Act, 40 U.S.C. 3131 – 3134. *See also* 7 MLBSA 17 (amended Oct. 14, 2005).

Section 15

CONTRACTOR'S LIABILITY INSURANCE

(A) The Contractor shall purchase and maintain from a state authorized company such insurance as will protect the Contractor, defined as the business owner and personnel, from such claims set forth below and for which the Contractor may be legally liable:

(1) claims under workers' compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed;

(2) claims for damages because of bodily injury, sickness, disease, or death of the Contractor's employees;

(3) claims for damages because of bodily injury, sickness, or death of any person other than the Contractor's employees;

(4) claims for damages insured by usual personal injury liability coverage;

(5) claims for damages, other than to the Work itself because of destruction of tangible property, including loss of use.

(6) claims for damages because of bodily injury, death of a person or property damage arising out of use of a motor vehicle;

(7) claims for bodily injury or property damage arising out of completed operations; and

(8) claims involving contractual liability insurance applicable to the Contractor's obligations under Indemnification subsection (A).

(B) The insurance required by this section shall be written for coverage seen in subsection (C) or otherwise as required by law, whichever coverage is greater. Coverage, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until either the date when coverage ends or one year after project completion whichever is later.

(C) The insurance provided by the Contractor shall be written for not less than the following, or greater if required by law: Workers' Compensation - (Policy to include a waiver of subrogation in favor of the Owner.) Employer's Liability – Bodily injury by accident - $500,000 each accident; bodily injury by disease - $500,000 contract limit; bodily injury by disease - $500,000 each employee. Commercial General Liability – (without limit to Premises Operations; Independent Contractors; Contractual Liability; Products and Completed Operations; Explosion, Collapse and Underground Liability ("XCU"); Broad Form Property Personal Injury and Advertising Liability (employment exclusion deleted; Incidental Medical Malpractice; Amendment of Pollution Exclusion-hostile fire; Cross-liability and severability of interest; Minimum Coverage $1,000,000 C.S.L. Commercial Automobile Coverage $1,000,000 D.S.L. All of the above insurance shall be on an occurrence policy form. The Contractor shall maintain the required insurance continuously before commencing work to a period of at least twelve months after final completion. The Contractor's Contractual Liability Insurance shall cover the Contractor's obligations under Indemnification subparagraph (1) and any other contractual defense or indemnity obligation of the Contractor under this contract.

(D) The Contractor shall not allow insurance required by this Agreement to lapse, be cancelled, be reduced in limits or coverage, non-renewed, materially changed nor have restrictive modifications added during the life of the Agreement. All insurance policies and certificates of insurance shall contain a provision that afforded coverage shall not be cancelled, reduced in limits of coverage, materially changed, or have restrictive modifications added, without sixty (60) days prior written notice to the Owner. Certificates of Insurance acceptable to the Owner shall be filed with the Owner prior to the commencement of the Work. Failure of the Owner to object to a lack of a Certificate of Insurance or to the coverages indicated thereon or provided by the Contractor shall not constitute a waiver by the Owner of any of the Contractor's obligations. If insurance coverage is required to remain in force after final payment and is reasonably available, an additional certificate evidencing continuation of such coverage shall be submitted with the close-out documentation. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, shall be furnished by the Contractor to the Owner with reasonable promptness.

(E) Commercial General Liability insurance required to be provided by the Contractor shall include the Owner as a named additional insured using ISO Form 2010. Policies for such insurance shall provide that such insurance is primary.

(F) In the event the Contractor fails to procure or maintain any insurance coverage required under this Agreement, the Owner may either purchase such coverage and deduct the cost thereof from any monies due to the Contractor, or suspend/terminate this contract.

(G) Compliance by the Contractor with the foregoing insurance requirements shall not relieve it from liability for amounts in excess of the limits of insurance.

(H) The Contractor and any of its subcontractors, sub-subcontractors, agents and employees shall waive any of their subrogation rights on their Workers' Compensation Policy in favor of the Owner. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though they would otherwise have a duty of indemnification, did not pay the insurance premium and irrespective of an insurable interest.

Section 16
WAGES, HOURS, AND SAFETY

(A) Labor Standards, Hours and Wages

All contracts in excess of $5,000, related to the Work and involving employment for construction must comply with federal and state labor laws, wherever applicable. Specifically, contractors, subcontractors and other contract parties shall comply with the Contract Work Hours and Safety Standards Act (CWHSSA) (40 U.S.C. § 3701 *et seq.*), the Fair Labor Standards Act (FLSA) of 1938 (29 U.S.C. § 201 *et seq.*) and the Americans with Disabilities Act (ADA) (42 U.S.C. § 12101) *whenever Federal dollars are used in the construction contract process.*

(1) Under the requirements of Subsection (A), each contractor shall be required to compute the wages of every mechanic and laborer on the basis of a standard work day of eight (8) hours and a standard work week of forty (40) hours. Work in excess of the standard work day or work week is permissible provided that the worker is compensated at a rate of not less than one and one half (1 ½) times the basic rate of pay for all hours worked in excess of eight (8) hours in a calendar day or forty (40) hours in the work week. The Act is applicable to construction work and provides that no laborer or mechanic shall be required to work in surroundings or under conditions which are unsanitary, hazardous, or dangerous to health and safety as determined under construction, safety and health standards promulgated by the Secretary of Labor. *See* 7 MLBSA § 19(e).

(2) All construction contracts, regardless of the source of the contract's funding, must comply with the Davis-Bacon Act (40 U.S.C. § 276(a) *et seq.*). Under the Act, laborers and mechanics must be paid no less than the minimum wage as determined by the Secretary of Labor. All contracts over $75,000.00, regardless of funding, must comply with COMMUNITY DEVELOPMENT COMMISSIONER'S ORDER 001-06, dated October 30, 2005.

(3) Every contractor and subcontractor, regardless of the source of the contract's funding, will be prohibited from inducing a person employed in the construction, prosecution, completion or repair of any public works project to give up any compensation to which they are entitled in exchange for the award of any Band construction contract. *See* Copeland "Anti-Kickback Act" (40 U.S.C. § 276(c)). **The Mille Lacs Band will prosecute and report all suspected or reported violations to appropriate law enforcement officials.** *See* 7 MLBSA § 19(c).

(B) Environmental Compliance

(1) Contracts in excess of $10,000.00 shall require compliance with all codes of federal regulations and all applicable standards regarding environmental protections. **Violations and suspected violations will be reported by the Owner to the BIA and the EPA**.

(2) In addition to the requirement set forth in subsection (1), contracts and subcontracts in excess of $100,000.00 require compliance with all applicable standards or requirements issued

under the Clean Air Act (42 U.S.C. § 7401-7661 *et seq.*). Contracts in excess of $100,000.00 must also comply with the Clean Water Act (33 U.S.C. § 1251) and United States' Executive Order 11738. United States' Executive Order 11738 is a declaration that governs the administration of the Clean Air Act in connection with federal grant construction projects. **This Executive Order requires the reporting of violations by the Owner to the grantor agency.** *See also* 7 MLBSA § 19(h).

(3) Compliance for all Contracts shall be required regarding mandatory standards and policies for energy efficiency requirements under the Energy Policy and Conservation Act (42 U.S.C. § 6201 *et seq.*)

(4) In addition, all contracts with the Band as the Owner shall comply with Tribal Law regarding protection of Tribal Cultural Resources (10 MLBSA § 2-5, 301-313) and Environmental Law (11 MLBSA § 103-123). No contractor or subcontractor shall be permitted to use hazardous materials in their construction efforts. Hazardous materials shall be defined as asbestos, toxic chemicals, waste, acids, alkalis, irritants, contaminants or other pollutants.

(C) Construction Compliance

(1) The contractor, subcontractor, agents and employees associated with the Work, shall comply with the Fair and Equitable Housing Act (42 U.S.C. § 3601 *et seq.*) as well as the Equal Credit Opportunity Act (15 U.S.C. § 1691). Compliance shall be required for minimum wage and maximum labor hours, "in any agreement relating to a federal, state or agency financial assistance housing program." *See* FAIR AND EQUITABLE HOUSING ACT (42 U.S.C. § 3601 §§ 114.14).

(2) The contractor, subcontractor, agents and employees associated with the Work, shall comply with ISO Rules and the Federal Building Codes (10 C.F.R. § 434, 10 C.F.R. § 435). In addition, the contractor, subcontractor, agents and employees associated with the Work, shall comply with Minnesota state law regarding building codes. Contractors, subcontractors, employees and agents shall be responsible for compliance with the Administration of State Building Codes (MN Rules Chapters 1300.0100 – 1300.6300; 1303.1600; 1303.1900; 1305.0010- .7100; 1309.0010 -.0703), the Minnesota Plumbing Code (MN Rules Chapters 4715.0100 – 4715.6000) and the Minnesota Energy Code (MN Rules Chapters 7670.0100 – 7670.1115). Finally, the contractor, subcontractor, agents, employees and others associated with the Work, shall be responsible for familiarity and compliance with the International Building Codes (I.B.C. Rules 101.3 – 3401.3), the International Residential Codes (I.R.C. Rules R302 – P2902) and the International Fuel and Gas Codes (I.F.G.C. Rules 106.1 – 506.3 *et seq.*).

(3) Acceptance of Nonconforming Work. If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be affected whether or not final payment has been made.

Section 17
WARRANTIES

The Contractor shall provide to the Owner any commercial warranty normally offered to the public. The Owner will not accept delivery of supplies and equipment "as is" unless the Contracting Officer has previously agreed in writing to accept supplies in such condition. The Contractor shall comply with the Minnesota Statute on Warranties (MN STAT. § 327B.02, 327B.03) and Housing Warranties (MN STAT. § 327A.01 – 327A.05). In addition, the Contractor shall comply with Minnesota state law regarding contractor licensing (MN STAT. § 327B.04 – 327B.09). Finally, the Contractor shall comply with Band law regarding Commercial Practices (18 MLBSA § 1-10, 101-112, 301) and Procurement of Construction Contracts (7 MLBSA § 1-36).

Section 18
COVENANT AGAINST CONTINGENT FEES

The Contractor warrants that no person or selling agency has been retained to solicit or obtain this Contract upon an agreement or understanding for a commission, brokerage or contingent fee, except a bona fide employee or bona fide established selling agent maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty, the Band shall have the right to terminate the Contract without liability and separate from the termination sections listed previously in this Contract. In this instance, the Band shall be able to deduct from the contract sum or otherwise recover the full amount of such commission.

Section 19
PATENTS AND COPYRIGHTS

This Contract is subject to all Mille Lacs Band requirements and regulations pertaining to reporting and copyright/patent rights under any contract for research, development, experiments, or demonstration work, and with respect to any discovery or invention which arises in the course of such contract. *See* 7 MLBSA § 19(f).

Section 20
INDIAN PREFERENCE

(A) A contractor shall give preferential employment under the contract, including subcontracts, to Band members and qualified Indians. Qualified Indians are persons defined under 25 C.F.R. § 273.2(j), see below, that meet posted or available job requirements. *Andrus v. Glover Construction Co.*, 446 U.S. 608 (1980) (footnote 3, citing 20 BIAM Bull. 1 (March 3, 1976)); *See also* 25 C.F.R. § 162.5a (1978); 41 C.F.R. § 14H-3.215-70 (1977).

> An Indian is defined under the Indian Self-Determination and Education Assistance Act as a person who is a member of an Indian tribe. 25 C.F.R. § 273.2(j). The Act also defines Indian tribes as, "any Indian tribe, band, nation, or other organized group or community, including any Alaska Native village or regional or village corporation as defined in or established pursuant to the Alaska Native Claims Settlement Act (85 Stat. 688), which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians." 25 C.F.R. § 273.2(g).

Contractor shall also provide employment and training opportunities to Indians regardless of age, religion or sex that are not fully qualified to perform under the contract where such would be consistent with contract performance. The contractor shall comply with all Indian preference requirements established by the Mille Lacs Band. Failure to comply with these requirements may lead to termination for cause under section 8 of this contract. *See* 18 MLBSA § 401-428; 7 MLBSA § 21-24; *see also* INDIAN SELF-DETERMINATION AND EDUCATION ASSISTANCE ACT, 25 C.F.R. § 273.45; *see also* Housing and Urban Development (HUD) Act of 1968 (12 U.S.C. § 1701(3) and 25 C.F.R. § 135).

(B) Indian Preference shall mean awarding a contract or a subcontract with a priority first given to qualified Mille Lacs Band Members. The second priority shall be given to qualified members of other federally recognized Indian tribes. The third priority will be given to all other non-Indian persons. *See* 25 U.S.C. § 450e; *See also* MLB EXECUTIVE ORDER 122-97, August 19, 1997.

(C) If a contractor or any of its subcontractors are unable to fill employment openings after giving full consideration to Indians as required in subsection (A), these employment openings may then be filled by other persons under the conditions set forth in the Equal Employment Opportunity clause of the contract. The contractor agrees to include this clause or one similar in all subcontracts issued under the contract.

(D) Indian Preference shall also mean that contracts bid by Band member contractors that are within 10% of the lowest competitive bid shall be given the opportunity to negotiate an acceptable bid. *See* 25 U.S.C. § 450e.

Section 21
EQUAL OPPORTUNITY

During the performance of a contract and after complying with the Indian Employment Preference clause of the contract the contractor agrees as follows:

(A) The contractor will not discriminate against any employee or applicant for employment because of race, age, religion or sex. The contractor will take affirmative action that applicants are employed and that employees are treated during employment without regard to their race, age, religion or sex. Such action shall include, but not be limited to the following: Employment upgrading; demotion or transfer; layoff or termination; rates of pay or other forms of competition.

(B) The contractor will, in all solicitation or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, age, religion or sex.

(C) The contractor will include provisions of these sections in every subcontract or purchase order so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the Mille Lacs Band may direct to enforce such provisions, including sanctions for non-compliance. *See* Indian Self-Determination Act (25 C.F.R. § 450e). If the contractor becomes involved in or is threatened with litigation with a subcontractor or vendor as a result of such direction, the contractor *may request* the Mille Lacs Band to enter such litigation to protect the interest of the Mille Lacs Band. However, nothing in this paragraph shall be construed as a waiver of sovereign immunity of the Mille Lacs Band of Ojibwe in any court of competent jurisdiction.

(D) If no Indian business is available under the conditions of subsection (B), then the contractor agrees to accomplish the maximum amount of subcontracting with small or minority businesses if available.

Section 22
USE OF INDIAN BUSINESSES

(A) As used in this section, the term "Indian Businesses" means Indian organizations or an Indian owned economic enterprise as defined in the code of Federal Regulations or the laws of the Mille Lacs Band. *See* INDIAN BUSINESS DEVELOPMENT PROGRAM (25 C.F.R. § 286.1 – 286.22).

(B) The contractor agrees to give preference to qualified Indian businesses in the awarding of any subcontracts entered into under this contract. The contractor shall comply with any preference requirements regarding Indian businesses established by the Mille Lacs Band.

Section 23
BUY INDIAN PROVISIONS

All contractors and subcontractors who conduct business on lands under the jurisdictions of the Mille Lacs Band of Ojibwe pursuant to a contract or subcontract with the Band shall comply with the provisions of the Buy Indian Act (25 U.S.C. § 47).

Section 24
ASSIGNMENTS

No contract or subcontract awarded by the Mille Lacs Band of Ojibwe or any of the rights or interests or obligations therein may be assigned without the written approval of the Contracting Officer.

Section 25
TAXES

A) The Owner is exempt from Minnesota State Sales Tax. For the purchase of supplies for construction, the Owner shall be the consumer and the state tax exemption will apply. The Owner shall provide the successful Contractors with a copy of their exemption certificate. Contractors must supply this copy when purchasing materials for construction, as well as Form ST8TG from the Minnesota Department of Revenue. *See also* MN STAT § 297.71-.74. Once the Contractor

completes the purchase, the Contractor shall supply the Owner with copies of the Form ST8TG and other documentation of material costs. This exemption does not apply for the purchase of materials in road construction. 22 MLBSA § 508.

B) The Administrative Policy Board may assess an Employment Rights Fee for the following:
    1) Contractors and subcontractors receiving contracts of $100,000.00 or more shall pay 0.5% of the total contract sum pursuant to 22 MLBSA § 601. *See also* 18 MLBSA § 417.

C) Contractor must also comply with the following:
    1) The Contractor has met the hiring goals of the TERO Compliance Officer, or
    2) The TERO Compliance Officer determines that the Contractor has made a substantial effort to train and employ Indian workers. 18 MLBSA § 401-428.

Section 26
UTILITIES

Contractors shall pay utility bills associated with the work at the construction site until the Contract has been closed out. The contract will be deemed finished and closed out when all inspections have been done, including but not limited to the, Certificate of Occupancy, keys are turned in to CMD Project Management Staff and all punch list items completed.

Section 27
AUDIT

A) To the extent required by law, the contractor agrees that the Mille Lacs Band, the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purpose of making audits, examination, excerpts and transcriptions. The Contractors shall maintain all records kept in the normal course of business for three years after the Mille Lacs Band makes final payments and all other pending matters are closed.

B) In addition, for the sake of potential audits, please include documentation of all physical changes to the Work in the project's close-out documentation.

Section 28
AMENDMENT

This Contract may be amended or modified only by a written instrument, added as an addendum and consecutively numbered. Each addendum must be signed by the parties, and approved, if necessary, by the Mille Lacs Band, through the Mille Lacs Band of Ojibwe's Band Assembly.

Section 29
SEVERABILITY

If any provision of this contract or its application to the Owner and the Contractor is held invalid, the remainder of the contract and the application of other provisions to the Owner and the Contractor shall not be affected.

Section 30
RATIFICATION

This contract is effective and enforceable once it is finally ratified by the Band Assembly pursuant to 3 MLBSA § 2(f) cited below.

The Band Assembly shall have power:

(f) To ratify agreements, contracts, cooperative and reciprocity agreements and memoranda of understanding.

Section 31
SOVEREIGNTY AND WAIVER OF RIGHTS

Any waiver regarding this contract must be explicit, written and authorized by the Owner; nor will provisions in § 12 of this contract waive the Sovereign Immunity of the Mille Lacs Band of Ojibwe. Furthermore, claims beyond the scope of this Contract will not be permitted. Injunctive relief is an acceptable alternative. This contract will not govern any separate bonding agreement. Nothing else in this contract shall be construed as a waiver of sovereign immunity of the Mille Lacs Band of Ojibwe in the Court of Central Jurisdiction. *See* 2 MLBSA § 5. Nothing in this contract shall be construed as a waiver of sovereign immunity of the Mille Lacs

Band of Ojibwe in any other court of competent jurisdiction. *See* 2 MLBSA § 5. Any waiver of rights by the Owner, under this Contract, in one single instance, does not create a continuous and overall waiver of rights. *See* 2 MLBSA § 5.

Section 32
ENTIRE AGREEMENT

(A) This Contract, including Forms and Addenda, constitutes the entire agreement between the parties regarding this subject matter. No representations have been made by any party, or any agent of any party, other than the terms and conditions set forth in this document. All prior and contemporaneous conversations, possible and alleged agreements, representations, covenants or omissions concerning the subject matter are void and have not been relied upon in any way by the Owner and the Contractor.

(B) The terms and conditions of this Contract are contractual in nature, and not a mere recital. This Contract shall constitute a legal, valid, and binding obligation of the parties, enforceable in accordance with its terms, and shall inure to the benefit of the parties.

This Contract is entered into as of the day and year first written above and is executed in at least three (3) original copies, of which one is to be delivered to the Contractor, and the remainder to the Owner.

IN WITNESS WHEREOF, we, the undersigned, have executed this Contract on the dates indicated below.

Dated: _____ By: _____
Commissioner of Community Development

Contractor: _____

Dated: _____ By: _____
Contractor or his/her Representative

OMB approval: _____ Dated: _____

OSG approval: _____ Dated: _____

RATIFICATION

Pursuant to the provisions of 3 MLBSA §2(f), this Contract was presented to the Band Assembly and is ratified on _____, 20___.

By: _____
Carolyn Shaw-Beaulieu
Speaker of the Assembly

General Index

ADDENDUM TO CONTRACT

The Mille Lacs Band of Ojibwe Community Development and the Contractor, agree to the following addendum to the Mille Lacs Band of Ojibwe Construction/Service Contract.

DATE: _____

PROJECT NAME AND NO.:_____
_____

CONTRACTOR NAME AND ADDRESS: _____
_____

SUBCONTRACTOR (IF APPLICABLE):_____
_____

DESCRIPTION OF WORK: _____
_____
_____
_____

VENDOR NO: _____ OBLIGATION NO.: _____
ACCOUNT NUMBER FOR PROJECT: _____

PRICE FOR MATERIALS (if applicable): _____
_____

CONTRACT SUM $_____

ADDENDUM $_____

FINAL CONTRACT $_____

This addendum constitutes the entire addendum agreement between the parties.

_____ _____
Commissioner of , Contractor/Contractor's
Community Development Representative

OMB_____ Date: _____

Solicitor General's Office_____ Date: _____

APB_____ Date: _____

Band Assembly_____ Date: _____

LEGAL NOTICE FORM

DATE:_____

CONTRACTOR NAME AND ADDRESS: _____
_____

SUBCONTRACTOR NAME AND ADDRESS (if applicable):_____
_____

INFORMATION REQUIRING LEGAL NOTICE: _____
_____

INFORMATION (before change, if applicable):_____
_____

INFORMATION (after change, if applicable):_____
_____

SENDER'S NAME AND TITLE: _____

METHOD OF NOTICE: _____

DISPUTE CLAIM FORM

Claims must be made within twenty-one (21) business days of the occurrence or condition giving rise to such event (whichever is later)

DATE: _____

PROJECT NAME/NO.:_____

CONTRACTOR (name and address):_____

_____

SUBCONTRACTOR (name and address, if applicable):_____

_____

GENERAL NATURE OF CLAIM (Provide a short statement of the claim):_____
_____

FACTS (provide description of events regarding dispute; provide names, phone numbers and personnel designation where applicable; attach separate sheet if needed)_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

DESIRED REMEDY AND REASONS (attach separate sheet if needed):_____
_____
_____
_____
_____
_____

1. PROJECT MANAGEMENT AND COORDINATION

a. Prior to starting Work, the Contractor shall submit the following information to CMD Project Coordinator: Project Schedule, Copies of all Building Permits, Bond (if required), and Approved TERO plan in place. Failure to have any of this documentation turned in will lead to immediate shut-down of the Work.
b. Verify layout information shown on Drawings, in relation to property survey and existing benchmarks, before laying out the Work.
c. Coordinate construction to ensure efficient and orderly execution of each part of the Work.
d. Progress meetings will be held at Project site periodically. Notify CMD Project Management staff (hereafter referred to as "Owner"), (and Architect, if applicable) of meeting dates a minimum of 48 hours prior. Each subcontractor or other entity concerned with current progress or involved with planning or coordination of future activities, shall attend. Meeting time/date/location to be determined by Contractor or in some cases, CMD Project Management staff.
    i. Prepare minutes of each meeting and distribute to parties present.

2. CONSTRUCTION SCHEDULE

a. Prepare a horizontal bar-chart construction schedule. Schedule will be submitted to CMD Project Management staff (hereafter referred to as "Owner") prior to commencement of any work on-site. Provide a separate time bar for each activity and a vertical line to identify the first workday of each week. Use same breakdown of Work indicated in the Schedule of Values. As Work progresses, mark each bar to indicate actual completion.
    i. Submit with signed contract.
    ii. Coordinate each element with other activities. Show each activity in proper sequence. Indicate sequences necessary for completion of related Work.
    iii. Indicate Substantial Completion and allow time for Inspection procedures necessary for certifying Substantial Completion.
    iv. Schedule Distribution: Distribute copies to Owner, (Architect, if applicable), subcontractors, and parties required to comply with dates.
    v. Updating: Revise the schedule bi-weekly, after each meeting or activity where revisions have been made - whichever is most recent. Distribute revised copies to Owner, (Architect, if applicable), subcontractors, and parties required to comply with dates. Any/all modifications to the original schedule must be submitted, in writing, to CMD Project Management staff as they occur.

3. SUBMITTAL PROCEDURES

a. Coordinate submittal preparation with construction schedule, fabrication lead-times, other submittals, and activities that require sequential operations.
    i. No extension of Contract Time will be authorized due to failure to transmit submittals in time to permit processing sufficiently in advance of when materials are required in the Work.
    ii. Owner will not accept submittals from sources other than Contractor.
    iii. Prepare submittals by placing a permanent label on each for identification. Provide a 4- by 5-inch (100- by 125-mm) space on the label or beside title block to record review and approval markings and action taken. Include the following information on the label:
        a. Project name.
        b. Date.
        c. Name and address of Contractor.
        d. Name and address of subcontractor or supplier.
        e. Number and title of appropriate Specification Section.
        f. Contractor's certification that materials comply with specified requirements.

b. Coordinate each submittal with other submittals and with work that does not require submittals.
c. Product Data: Mark each copy to show applicable choices and options. Include the following:
    i. Data indicating compliance with specified standards and requirements.
    ii. Notation of coordination requirements.
    iii. For equipment data, include rated capacities, dimensions, weights, required clearances, and furnished specialties and accessories.

4. SHOP DRAWINGS

a. Submit newly prepared information drawn to scale. Do not reproduce Contract Documents or copy standard information. Submit 1 reproducible print and 1 blue- or black-line print on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 42 inches (762 by 1067 mm). Owner will return the reproducible print. Include the following:

i. Dimensions, profiles, methods of attachment, coordination with adjoining work, large scale details, and other information, as appropriate for the Work.
ii. Identification of products and materials.
iii. Notation of coordination requirements.
iv. Notation of dimensions established by field measurement.
v. Identification of deviations from Contract Documents.

5. SAMPLES

a. Submit Samples finished as specified and identical with the material proposed. Where variations are inherent in the material, submit sufficient units to show limits of the variations. Include product name or name of the manufacturer.

6. CHANGE ORDER PROCESS

a. Any/all necessary changes to the original scope of work must be submitted, in writing, to CMD Project Management staff prior to any work be done. Modifications made to the scope of work not previously identified and authorized will not be subject to additional compensation.
b. Change order pricing will be submitted with labor and materials listed separately. A maximum of 10% mark-up will be allowed on materials.
c. Any change order that results in an increase in the contract amount will require a properly executed Addendum to the Contract. Additional work should not begin until this is executed by both the contractor and the Commissioner of Community Development.

7. LIEN WAIVERS AND MONTHLY PAYMENTS

a) Billing will be submitted by the contractor to CMD on a monthly basis.
b) All invoices must be submitted on CMD monthly billing forms and be accompanied by CMD lien waivers (full, partial, or conditional) for the present draw request, and satisfied lien waivers partial or full from previous billing. Copies of building inspection reports will also need to be submitted with the current draw for work shown as complete on the present draw.

END OF SECTION

SECTION VII – BUILDING CODES/INSPECTIONS

Bidding Requirements and Contract Forms

1. BUILDING CODES

a. All residential construction projects will follow all codes within the International Residential Code **2012** (IRC)
b. All commercial construction projects will follow all codes within the International Building Code **2012** (IBC).
c. All construction projects will follow all codes within the State Energy Code of Minnesota Rule, Chapter 1322 and the Commercial State Energy Code, Chapter 1323.
d. All mechanical projects will follow the 2012 International Mechanical Code (IMC) with State of Minnesota Amendments.
e. All Plumbing projects will follow all current State of Minnesota applicable codes.

2. INSPECTIONS:

a. Mille Lacs Band of Ojibwe Building Permits:
   Building Permit Fee: See fee schedule in Section VIII.
   - ✓ Contractors will be responsible for attaining any county and/or State permits required for conducting work in addition to the Mille Lacs Band of Ojibwe Permit.

b. Public Works Inspections are provided to contractor at no cost.
   i. Required inspections: Water hook-ups, Sewer hook-ups.
   ii. 48 hours prior notice is required. Call 320-532-7430 to schedule an inspection.

c. Quality Control
   i. CMD Project Management staff will be conducting all quality control inspections. Contact Project Coordinator to schedule.
   ii. Punch List walk-throughs need to be coordinated with the Project Coordinator at least 48 hrs prior. For further instructions regarding the MLB CMD Punch List Process, consult with CMD Project Management Staff.
   iii. Final Acceptance / Turnover meeting: Contractor shall schedule final acceptance meeting, at the time of Punch List scheduling, with CMD Project Management staff. This meeting time will be used to verify punchlist item completion, and allow opportunity for MLBO Housing Authority to review the condition of the home. Any quality issues identified during this meeting will be corrected by the Contractor. If needed, re-schedule a second acceptance meeting.
   iv. Specific pre-installation inspections may be required at the discretion of CMD Project Management Staff for:
      1. Concrete installation
      2. Window installation
      3. Electrical rough-ins
      4. Painting installation
      5. Flooring installation

d. Drug Testing
   i. MLBO Housing Authority will be conducting drug testing on homes prior to occupancy. The testing will occur at the Final Acceptance / Turnover meeting. If a test result is positive, Contractor shall be responsible for clean-up cost reimbursement to MLBO Housing Authority. This cost will be deducted from the final retainage payment.

END OF SECTION

1. BUILDING INSPECTION FEES:

Any contractor conducting work with the Mille Lacs Band of Ojibwe will be required to apply for a building permit through the Community Development inspection office, even if another jurisdiction also requires a permit and inspection.

FY 2025 Building Permit, Fee Schedule

Siding, roofing, windows, water heaters and furnace replacements $75.00, Flat Fee
Projects valued from $1.00 - $25,000. Permit costs $150.00
Projects valued from $25,001.00 - $75,000. Permit fee $250.00
Projects valued from $75,001.00 - $125,000. Permit fee $350.00
Projects valued from $125,001.00 - $200,000. Permit fee $450.00
Projects valued from $200,001.00 - $350,000. Permit fee $500.00
Projects valued from $350,001.00 - $500,000. Permit fee $550.00
Projects valued from $500,001.00 - $750,000. Permit fee $600.00
Projects valued from $750,001.00 - $1,000,000. Permit fee $650.00
Projects valued from $1,000,001.00 - $1,500,000. Permit fee $700.00
Projects valued from $1,500,001.00 - $2,000,000. Permit fee $750.00
Projects valued from $2,000,001.00 - $3,000,000. Permit fee $950.00
Projects valued from $3,000,001.00 - $5,000,000. Permit fee $1,000.00
Projects valued from $5,000,001.00 - $10,000,000. Permit fee $1,500.00
Projects valued over $10,000,000. Permit fee $3,000.

1st re-inspection:	Free
2nd re-inspection:	$100.00
3rd re-inspection and thereafter:	$350.00
Emergency Inspection:	$175.00
– defined as less than 24 hours notice	
Not ready for called inspection:	$500.00
No Show for inspection:	$500.00
Concealment of work prior to inspection:	$500.00
Work with no MLBO permit:	$1,000.00

2. SCHEDULE OF REQUIRED INSPECTIONS (if applicable to the nature of the Work)

A. Footings
B. Foundation
C. All Cast-In-Place Concrete Flatwork
D. Radon Reduction
E. Underground Plumbing / Mechanical
F. Framing
G. Plumbing Rough-In
H. Mechanical Rough-in
I. Electrical Rough-in (State of MN & Prior to Framing Inspection)
J. Roofing Dry-In
K. House Wrap
L. Siding
M. Insulation
N. Windows and Doors

O. Plumbing Final
P. Mechanical Final
Q. Smoke and Carbon Monoxide Detectors
R. Electrical Final (State)
S. Building Final Inspection

END OF SECTION

END BIDDING REQUIREMENTS AND CONTRACT FORMS

Community Development
Housing Initiative 2025

GENERAL BUILDING CONSTRUCTION SPECIFICATIONS

SECTION 01 5000 – TEMPORARY FACILITIES AND CONTROLS

General Building Construction

1. TEMPORARY CONTROLS

a. Contractor to provide fire protection on site.
    i. Contractor to meet all OSHA codes.
b. Contractor to provide temporary barricades, warning signs, and lights to protect the public from hazards.

2. SITE SECURITY AND LIABIITY

a. Until Certificate of Occupancy has been obtained and the project has been completely turned over to the Mille Lacs Band, the building is considered to be under full and complete control of the General Contractor.
b. “Completely turned over” is defined as: all punch lists done and verified by CMD Project Management staff, keys turned over to CMD Project Management staff and entire scope of work has been delivered by the Contractor.
c. Builder’s risk insurance will be provided on all projects unless otherwise instructed by CMD Project Mgmt staff.

All issues of theft, vandalism, fire, weather or etc. will be covered and insured by the General Contractor’s insurance policy and coverage.

END OF SECTION

SECTION 01 5100 – TEMPORARY UTILITIES

General Building Construction

1. TEMPORARY UTILITIES

a. The contractor is required to provide utility services to the project site for use during all construction activity. This includes:
    i. Electrical Power
    ii. Heat (natural gas or propane)
    iii. Establishing accounts for each utility, to transfer into the Owners name upon project completion. (New Construction)

b. The contractor is responsible for all temporary utilities until all signed lien waivers are turned in, all punch lists have been completed and verified by CMD Project Management staff and a Certificate of Occupancy have been obtained.

c. The Contractor will provide documentation, included with the bid, from insurance provider that Builder's Risk Insurance can be obtained if contract is awarded. Bidder will include cost for this additional insurance coverage on bid form (line 47).

END OF SECTION

The contractor shall provide dumpsters throughout the duration of all construction activities.

GENERAL WASTE MANAGEMENT REQUIREMENTS

A. Owner requires that this project generate the least amount of trash and waste possible.

B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.

C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.

D. Methods of trash/waste disposal that are not acceptable are:
   1. Burning on the project site.
   2. Burying on the project site.
   3. Dumping or burying on other property, public or private.
   4. Other illegal dumping or burying.
   5. Incineration, either on- or off-site.

E. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

F. CMD Project Management staff may periodically instruct Contractor to relocate dumpster as necessary to prevent parking hazards, snow removal or as deemed necessary.

END OF SECTION

1. CONCRETE WORK
   a. Contractor is to install the following concrete products on all houses, unless specified differently on bid posting:

   b. Concrete Materials
      i. Cement: ASTM C 150, Type I-normal Portland type (Type III in cold weather applications)
         1. Acquire all cement for entire project from same source.
      ii. Fine and Course Aggregates: ASTM C 33. Class 3M course aggregate or better, graded.
         1. Maximum Coarse-Aggregate Size: 1 inch nominal.
         2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
         3. Acquire all aggregates for entire project from same source.
      iii. Water: Clean and not detrimental to concrete

   c. Concrete Stoops
      1. Stoops are to be the full length of the entry.
      2. Stoops are to be installed at the front door.
      3. Front entry door and patio door locations shall be supported on full depth frost footing and foundation wall.
      4. Re-bar reinforcement is required to be used.
         a. Building Official to inspect concrete form before pouring.
         b. Compaction Test
         c. Fiber expansion joint no greater than ¾" to be installed between building foundation wall and stoop.
         d. Flashing to be in place prior to pouring stoop.
         e. No exposed edges of rigid foam insulation will be permitted. Edges shall either be covered with color selected metal trim or installed below grade level.

   d. Side Walks
      1. Sidewalks are to be installed from the stoop to the garage apron and driveway or as shown on the plans.
         a. Install drainage piping for gutters where down spouts are located. Must drain away from house and be underground.
      2. Re-bar reinforcement is required to be used.
         a. Building Official to inspect concrete form before pouring.
         b. Tooled control joints shall be required at the time of placement.

   e. Garage Aprons
      1. Install an apron in front of garage to the sidewalk.
      2. Re-bar reinforcement is required to be used.
         a. Building Official to inspect concrete form before pouring.

   f. Footings: Proportion normal-weight concrete mixture as follows:
      1. Minimum Compressive Strength: 5000 psi at 28 days
      2. Maximum Water-Cementitious Materials Ratio: 0.55. (non air-entrained)
      3. Slump Limit: 4 inches, plus or minus 1 inch
      4. Minimum Reinforcement: (2) #5 rebar and vertical reinforcement into foundation wall at 6' O.C. spacing.

   g. Slabs-on-Grade: Proportion normal-weight concrete mixture as follows:
      1. Minimum Compressive Strength: 4000 psi at 28 days
      2. Maximum Water-Cementious Materials Ratio: 0.46 (non air-entrained), and 0.45 (air-entrained)
      3. Slump Limit: 5 inches, plus or minus 1 inch.

4. All interior concrete slabs to
5. Interior control joints shall be saw cut ¼ depth after concrete placement. See plan layout for joint placement.

h. Underslab Vapor Retarder and Rigid Insulation: Multi-layer, fabric-, cord-, or aluminum-reinforced polyethylene or equivalent, complying with ASTM E 1745, Class A; stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs.
   1. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc. for sealing seams and penetrations in vapor retarder.
   2. Acceptable Products:
      a. Fortifiber Corporation; Moistop Ultra 10.
      b. Raven Industries Inc.; Vapor Block 10.
      c. W.R. Meadows; Perminator 10 mil.
      d. Single Ply Polyethylene is permitted 6 mil.
      e. Or approved equal.
   3. 2" R-10 Rigid Insulation to be installed directly under all interior conditioned space cast-in-place concrete.

i. Reinforcement
   1. Reinforcing Steel: ASTM A 615/A 615M Grade 60 (420)
      a. Type: Deformed billet-steel bars.
      b. Installed continuously throughout footings and at 4' 0" on centers attaching all footing to all foundation walls as well as all foundation walls to all cast-in-place concrete (i.e. garage apron to garage slab and stoop slab to foundation wall, etc.)

   2. Steel Welded Wire Reinforcement: ASTM A 185/A 185M, plain type.
      a. Form: Flats Sheets.
      b. Mesh Size and Wire Gauge: As indicated on drawings.

   3. Reinforcement Accessories:
      a. Tie Wire: Annealed, minimum 16 gauge
      b. Chairs, Bolsters, Bar Supports, and Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
      c. Provide stainless steel, galvanized, plastic, or plastic coated steel components for placement within 1 ½ inches of weathering surfaces.

2. WINTER CONDITIONS

A. Contractor to provide total enclosure for any winter block work.
   a. Enclosure to be sealed.
   b. Temperature must be above freezing in the enclosure.
   c. Enclosure must remain up until concrete has cured.

- Certain houses have additional concrete work (i.e. patios surrounding entry stoop). See plans and RFP for more info.
- Cast in place gutter downspout splash pads to be poured under this section. See further info under Section 07 6200 2.04 E – Sheet Metal Flashing and Trim – page 100.

END OF SECTION

SECTION 03 3130 - PERMANENT FORMS – Insulating Concrete Forms

General Building Construction (When Specified in RFP, or as Builder Alternate)

PART 1 – GENERAL

1.01 SUMMARY

A. Supply and installation of permanent insulating concrete forms as formwork, placement of steel reinforcement and placement of concrete into formwork. (When Indicated in RFP)

1.02 RELATED SECTIONS

A. Drawings and general provisions to the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
B. Section 03 20 00 – Concrete Reinforcing
C. Section 03 30 00 – Cast-In-Place Concrete
D. Section 04 00 00 – Masonry
E. Section 06 00 00 – Wood, Plastics and Composites
F. Section 07 10 00 – Dampproofing and Waterproofing
G. Section 07 13 00 – Sheet Waterproofing
H. Section 07 46 00 – Siding
I. Section 07 60 00 – Flashing and Sheet Metal
J. Section 08 00 00 – Openings
K. Section 09 20 00 – Plaster and Gypsum Board

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM)

1. ASTM C578 -Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
2. ASTM C236 - Steady State Thermal Performance of Building Assemblies
3. ASTM C150 - Standard Specification for Portland Cement Types I,II,III.
4. ASTM D1761 - Standard Test Methods for Mechanical Fasteners in Wood
5. ASTM E84 - Standard Test Method for Determining Surface Burning Characteristics of Building Materials
6. ASTM A615 - Steel Specifications for Steel Reinforcement
7. ASTM D1929 - Standard for Ignition Temperature of Plastics
8. ASTM D635 - Standard for Rate of Burning of Plastics

B. American Concrete Institute

1. ACI 318 - Building Code Requirements for Reinforced Concrete
2. ACI 332 - Guide to Residential Cast-In-Place Concrete Construction
3. ACI 347 - Guide to Formwork for Concrete

1.04 SYSTEM DESCRIPTION

A. Provide Reward Wall Systems, Inc. insulating concrete form product which has been manufactured and installed to withstand concrete placement loads without defects, damage or failure and such that the cast-in-place concrete wall is designed according to ACI 318 “Building Code Requirements for Reinforced Concrete”
B. Furnish labor, materials, equipment, and services necessary for the complete and proper installation of all insulating concrete formwork and related work, as shown on the

drawings or specified herein, in accordance with all applicable requirements of the contract documents.

1. Insulating concrete wall formwork consisting of two panels of flame retardant panels of Type II expanded polystyrene (EPS) manufactured to a 1.5 lbs/cu. ft. minimum density. The two EPS panels to be connected by 8 co-polymer polypropylene plastic tie inserts designed with cross members placed 6" o.c. horizontally and 8" o.c. vertically creating a symmetrical design enhancing installation efficiency and reducing product waste. Plastic tie inserts positioned perpendicular between the EPS panels. The ICF product to be modular or pre-fabricated factory assembled forms.
2. The ICF formwork to have consistent 2 ½" thick EPS panels with a double row of square interlocking teeth designed for efficient installation with the modular ICF formwork having no top, bottom, left or right sides; it being of a universal type design. Straight, 90-degree corner and 45-degree corner units to all possess the same design features and characteristics.
3. Plastic tie inserts designed to allow for multiple reinforcement placement positions to comply with structural design. The rebar chairs to be two deep, loose fit contact splice.
4. Wall system to provide a forming cavity width of minimum 4", 6", 8", 10" or 12" (as design requires). The cavity width shall be a consistent flat rectangular cross section.
5. Wall system plastic tie inserts to provide minimum 1 1/4" fastening strips @ 6" o/c. Fastening strips to be recessed beneath the EPS panel face ½" and run vertically full wall height to facilitate fastening both interior and exterior finishes.
6. Wall system consisting of two EPS panels, concrete and exterior and interior finishes to provide a minimum R22 insulation value.
7. EPS foam to provide maximum vapor permeation of 3.5 Perm-in.

C. Conform to the applicable building code requirements of regulatory agencies having jurisdiction.

1.05 SUBMITTALS

A. SUBMITALLS OF EQUALS. Submit insulating concrete form system to be considered as equal to the specified insulating concrete form system submitted and approved prior to bid date. Insulating concrete form system, which have been reviewed and accepted as equal to the specified form system, will be listed in an addendum prior to bid date; only then will equals be accepted at bidding. Submittals shall include the following:
   1. A sample ICF formwork product .
   2. Current edition of the insulating concrete form system manufacturer's specifications and installation guidelines.
   3. Descriptive list of the materials proposed for use.
   4. ICF manufactured product has been evaluated for compliance with the applicable model building code. Documentation of International Building or Residential Code (IBC or IRC)
   5. Documentation of fire rating design listings where applicable.
   6. Damproofing / Waterproofing product data, and assurance of compatibility from ICF manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in original factory packaging, bearing listing and labeling identification of product, manufacturer and lot number.

B. Handle and store products in a location to prevent damage and soiling.

C. Ensure that UV protection is provided for material should on-site storage be required for an extended time period.

1.07 PROJECT CONDITIONS

A. Use appropriate measures for protection and supplementary heating when required to ensure proper concrete curing conditions in accordance ACI 306 during periods of weather where temperatures are below minimum specified by governing building code for concrete.
B. Familiarize every member of the application crew with all applicable safety regulations recommended by OSHA and other industry or local governmental groups.

SEQUENCING AND SCHEDULING

A. Sequence installation of insulating concrete forms with related work specified in other sections to ensure that wall assemblies, including window and door accessories, trim, service penetrations, transition changes, and mechanical services are protected against damage from effects of weather, corrosion, and adjacent construction activity.

WARRANTY

A. Insulating concrete form manufacturer to provide copies of specified product warranties.

PART 2 PRODUCTS

2.01 INSULATING CONCRETE FORM PRODUCTS

A. INSULATING CONCRETE FORM GENERAL CHARACTERISTICS

Form units with the following characteristics and dimensions to accommodate project criteria:

1. Expanded polystyrene (EPS) plastic foam units
2. Nominal 1.5 lb. /cu. ft. density foam
3. A listed 3rd party agency maximum flame spread rating of 25 per ASTM E-84.
4. A listed 3rd party agency maximum smoke density rating 450 per ASTM E-84.
5. Universal interlock design for successive courses to provide wall integrity.

B. BRACING, ALIGNMENT & SCAFFOLD SYSTEM

As an integral installation component of an insulating concrete form system an adjustable metal scaffolding support and wall alignment system shall be provided.

1. A device with adequate degrees of adjustment to ensure the completed insulating concrete form system walls are plumb after the placement and consolidation of concrete.
2. An OSHA compliant scaffold support system to facilitate proper stacking of forms and placement of concrete.
3. System adequate to reinforce and protect completed insulating concrete form installation prior to the attachment of structural elements to protect from wind damage.

2.02 CONCRETE

A. Concrete supplied under Section 03 3000 shall be of strength as specified by the design engineer (measured at 28 days). Recommended aggregate size to be 3/8” minimum and 3/4” maximum.
B. Recommended concrete slump is 5.5” to 6.5”

2.03 STEEL REINFORCEMENT

A. Steel reinforcement shall be supplied and installed per manufacture’s recommendations.

B. Lintels to be installed as specified or detailed by the structural engineer in conjunction with the insulating concrete form manufacturer's installation manual guidelines. Size and placement of top and bottom bending steel, stirrups for shear reinforcement and corner reinforcing to be verified with engineering design prior to concrete placement.

2.04 WATERPROOFING

A. Sheet waterproofing membrane material to be supplied under this section and installed according to manufacturer's recommendations as specified under Section 07 13 00 (Sheet Waterproofing).
B. Waterproofing material to be compatible with EPS foam form units and display the following characteristics:
C. Drainage board or waterproofing protection materials.

2.05 ACCESSORIES

A. Buck Materials

1. Extruded vinyl or treated wood or metal buck material

PART 3 EXECUTION

3.01 PREPARATION

A. Remove all loose aggregate and foreign substances prior to commencement of insulating concrete form system installation.

3.02 INSTALLATION OF FORM UNITS

A. Installation of forms to be in accordance with manufacturer's installation guidelines.
B. The installer shall ensure the following accepted practices are utilized on site as outlined in the manufacturer's installation guidelines.
    1. Footing construction
    2. Wall layout
    3. Course placement
    4. Horizontal reinforcement placement
    5. Door and window opening construction
    6. Bracing, alignment and scaffolding
    7. Vertical reinforcement placement
    8. Lintel construction
    9. Service penetration planning and construction
    10. Concrete pre-placement checklist
    11. Concrete placement
        a. Placement methods
        b. Mix design
        c. Concrete consolidation
        d. Post placement
    12. Below grade waterproofing

3.03 SERVICE PENETRATIONS

A. Service penetrations (electrical service conduits, water service pipes, and air supply and exhaust ducts, etc.) shall be placed at the required locations as indicated by the appropriate trades. Penetrations shall be reinforced as required by the structural engineer.
B. Provide appropriate material such as PVC Schedule 40 pipe sleeves at service penetrations prior to placing concrete to create voids where services can be passed through at a later date.

3.04 ACCESSORY PRODUCT INSTALLATIONS

A. Buck Material. Refer to the manufacturer's guidelines for installation of appropriate bucking materials.

3.05 CLEANUP

A. Clean up and properly dispose of all debris remaining on job site related to the installation of the insulating concrete forms.

3.06 PROTECTION

A. Consult with exterior finish contractor concerning exposure to ultraviolet light to ensure proper finish to ICF walls.

END OF SECTION

A. CONCRETE BLOCK: Comply with referenced standards as follows:
   1. Size: Standard units with nominal face dimensions of 16 x 8 inches and nominal depths as indicated on the drawings for specific locations.
   2. Load-Bearing Units: ASTM C 90, normal weight.
      a. Hollow block, as indicated.
      b. Exposed faces: Manufacturer's standard color and texture.

B. MORTAR AND GROUT MATERIALS
   a. Portland Cement: ASTM C 150, Type I.
      i. Hydrated Lime: ASTM C 207, Type S.
      ii. Mortar Aggregate: ASTM C 144.
      iii. Grout Aggregate: ASTM C 404

C. WATER: Clean and potable

D. ACCELERATING ADMIXTURE: Nonchloride type for cold weather, ASTM C 494, Type C, and recommended by the manufacturer for use in masonry mortar of composition indicated.
   a. Manufacturers:
      i. Euclid Chemical Co.; Product Accelguard 80: www.euclidchemical.com.
      ii. W.R. Grace & Co.; Construction Products Division; Product Morset: www.na.graceconstruction.com
      iii. BASF Construction Chemicals; Product Trimix-NCA: www.buildingsystems.basf.com.

E. MOISTURE-RESISTANT ADMIXTURE: Water repellent compound designed to reduce capillarity.
   a. Manufacturers:
      i. W.R. Grace & Co.; Construction Products Division; Product Dry-Block Mortar: www.na.graceconstruction.com
      ii. BASF Construction Chemicals; Product Rheopel Mortar Admixture: www.buildingsystems.basf.com.

F. REINFORCEMENT AND ANCHORAGE
   a. Manufacturers of joint Reinforcement and Anchors:
      i. Dur-O-Wal: www.dur-o-wal.com
      ii. Hohmann & Barnard, Inc.: www.h-b.com
      iii. Masonry Reinforcing Corporation of America: www.wirebond.com
   b. Reinforcing Steel: ASTM A 615/A 615 M Grade 60 (420) deformed billet bars: uncoated.
   c. Single Wythe Joint reinforcement: Truss or ladder type; ASTM A 82/A 82 M steel wire, hot dip galvanized after fabrication to ASTM A 153/A 153M, Class B; o.1875 inch side rods with 0.1483 inch cross rods; width as required to provide not more than 1 inch and not less than ½ inch of mortar coverage on each exposure.
   d. Foundation block walls shall be anchored to footings with #5 Re-bar reinforcement. Drilling and epoxy set adhesive shall be permitted.

END OF SECTION

SECTION 06 1000 – ROUGH CARPENTRY

General Building Construction

SECTION REQUIREMENTS

PRODUCTS

LUMBER, GENERAL

A. Dressed lumber, S4S, 19 percent maximum moisture content for 2-inch (38-mm) thickness or less, marked with grade stamp of inspection agency.

1.1 TREATED MATERIALS

A. Preservative-Treated Materials: AWPA C2 lumber and AWPA C9 plywood, labeled by an inspection agency approved by ALSC's Board of Review. After treatment, kiln-dry lumber and plywood to 19 percent moisture content, respectively. Treat indicated items and the following:

1) Concealed members in contact with masonry or concrete.
2) Wood floor plates installed over concrete slabs directly in contact with earth.
3) ACQ rated fasteners to be used in all instances of direct contact with pressure treated lumber.
4) Exterior decking materials to be #1 & Btr Southern Yellow Pine

1.2 LUMBER

A. Dimension Lumber: The following grades per inspection agency indicated.

1. Non-Load-Bearing Interior Partitions: Construction, Stud, or No. 3: Northern species: NLGA; Mixed southern pine: SPIB; or Western woods: WCLIB or WWPA. Wall framing studs to be placed no more than 16” on center.

2. Framing to include load bearing walls and partitions: Stud or No. 2: Douglas fir-larch: NLGA, WCLIB, or WWPA. Wall framing studs to be placed no more than 16” on center.

3. Interior backing/blocking (installed as solid dimensional lumber, not plywood) as indicated on plans or as indicated here if not indicated on plans:

   a. Cabinet backer (2 rows at upper cabinetry)
   b. Hand rail backing
   c. Grab bar / bath accessory backing
   d. Door bumper (at lockset height) blocking
   e. Closet shelving backing
   f. Window treatments

4. Exposed Framing: No. 2, hand selected: Spruce-pine-fir: NELMA, NLGA, WCLIB, or WWPA. Wall framing studs to be placed no more than 16” on center.

B. Concealed Boards: 19 percent maximum moisture content: Western woods: Standard per WCLIB rules or No. 3 Common per WWPA rules.

C. Miscellaneous Lumber: No. 3 or Standard grade of any species for nailers, blocking, and similar members.

1.3 ENGINEERED WOOD PRODUCTS

A. Engineered wood products acceptable to authorities having jurisdiction and with allowable design stresses, as published by manufacturer, which meet or exceed those indicated. Manufacturer's published values shall be demonstrated by comprehensive testing.

B. Laminated-Veneer Lumber: Laminated with an exterior-type adhesive complying with ASTM D 2559, with grain of veneers parallel to their lengths.
   1) Extreme Fiber Stress in Bending: 2950 psi (17 MPa) for 18-inch nominal- (286-mm actual-) depth members.
   2) Modulus of Elasticity: 2,000,000 psi (13 800 MPa).

C. Prefabricated Wood I-Joists: Made from stress-graded lumber flanges and wood-based structural-use panel webs with exterior-type adhesive complying with ASTM D 2559.

D. Pre-fabricated Roof Trusses: Provide Trusses with 12” energy heel sufficient to install continuous R-49 attic insulation. Contractor to have truss manufactures layout shop drawings on site, showing code compliance and bracing information for inspections. Any truss repairs shall be accompanied by signed repair design documentation from the truss supplier.

E. Pre-fabricated Floor Trusses: General Contractor shall be responsible to coordinate installation of 2) 12”x24” chases to allow adequate room to install ductwork with the floor truss supplier.

1. Structural Capacities: Establish and monitor structural capacities according to ASTM D 5055.

1.4 PANEL PRODUCTS

A. Wood-Based Structural-Use Panels: DOC PS 2. Provide plywood complying with DOC PS 1, where plywood is indicated.

1. Factory mark panels evidencing compliance with grade requirements.
2. Provide panels with span ratings required by support spacing indicated.
3. Subflooring: ¾” Tongue and Groove, APA-rated sheathing, Exposure 1.
4. Wall Sheathing: ½” OSB, APA-rated Structural I sheathing, Exposure 1.
5. Roof Sheathing: ½” OSB, APA-rated Structural I sheathing, Exterior.
6. Plywood Underlayment for Resilient Flooring: APA Stamped B-C grade or better Underlayment with exterior glue and fully sanded face.
7. Cementitious Backer for Ceramic Tile: ½” thick Cementitious backer,

1.5 MISCELLANEOUS PRODUCTS

A. Air-Infiltration Barrier: Tyvek Homewrap. Provide air infiltration barrier at exterior walls of house.

B. Fasteners: Size and type indicated. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with a hot-dip zinc coating per ASTM A 153 or of Type 304 stainless steel and ACQ rating.

1. Power-Driven Fasteners: CABO NER-272.
2. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.

C. Metal Framing Anchors: Hot-dip galvanized steel of structural capacity, type, and size indicated.

D. Sill-Sealer: Closed cell foam insulation, standard thickness, compressible to 1/4 inch thick.

E. Adhesives for Field Gluing Panels to Framing: APA AFG-01.

F. Sealant for Base Plates: All wall bottom plates shall be sealed to subfloor.

END OF SECTION

SECTION 06 2000– FINISH CARPENTRY

General Building Construction

SECTION REQUIREMENTS

1.1 MATERIALS, GENERAL

A. Lumber Standards: DOC PS 20 and grading rules of inspection agencies certified by American Lumber Standards Committee Board of Review.

B. Softwood Plywood: DOC PS 1.

C. Hardwood Plywood: HPVA HP-1.

1.2 STANDING AND RUNNING TRIM

a. Interior Trim: Pre-finished wood trim, solid oak, and non-veneer lumber.

1. Window and Door casing – Ferche F-115 Princeton oak unless otherwise specified
2. Wood baseboard (see Room Finish Schedule for further info regarding location) Ferche F219 - oak unless otherwise specified.
3. Wood base shoe: ½ inch by ¾" inches high (installed where vinyl flooring and wood base are present, and around cabinetry bases)
4. Wall caps – ¾" solid oak unless otherwise specified.
5. Interior railings, stair skirt boards, and misc. trim. – oak unless otherwise specified.
6. Extended window sills (in some instances) – oak unless otherwise specified.

1.3 STAIRS AND RAILINGS

A. Interior Treads, Risers: 1-1/8-inch, particleboard treads (dimensional lumber permitted for temporary treads during construction). 1x Pine material for risers.

B. Exterior Treads and Stringers: 1-1/2-inch, kiln-dried, pressure-preservative-treated, #2 or better SPF.

C. Interior Railings: Clear, kiln-dried, oak railing stock.

D. Exterior Railings: Clear, kiln-dried, pressure-preservative-treated #2 or better SPF. Graspable per code requirements.

1.4 MISCELLANEOUS MATERIALS

A. Fasteners for Exterior Finish Carpentry: hot-dip galvanized steel or non-corroding aluminum nails. ACQ fasteners at all pressure treated lumber.

B. Mailbox posts and mailboxes provided and installed by Contractor. Location to be determined by CMD Project Management staff and/or local postal provider.
1. Post: Friend Innovations Model # 037, or JMD Manufacturing MP-48
2. Mailbox: Gibraltar C1100B00 standard size black. Provide reflective vinyl self adhesive number identification on sides and front of mailbox

C. House numbers: M.R. Signs, Fergus Falls, MN 218-736-5681 (SNS-SF-HI-BLU-14"x06.00" x063W). Please consult with CMD Project Management staff

prior to ordering / installation if additional information is needed. A sample sign order will be provided if needed.

D. Recessed Medicine Cabinet – Suggested manufacturer – Zenith X4311 or similar. Submit product info to CMD Project Management staff for approval.
1. Medicine Cabinet will be installed semi-recessed at sidewall of vanity above light switches / devices, centered between the door casing and edge of wall. Contractor shall coordinate framing and rough-in activities to allow for recessed installation.
2. All bathrooms to receive cabinet, except for Blue Spruce model.
3. Surface mount installation is acceptable only in a remodel project.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Specially fabricated cabinet units.

B. Countertops.

C. Cabinet hardware.

D. Factory finishing.

E. Window sills.

1.02 SUBMITTALS

A. Shop Drawings: Indicate materials, component profiles and elevations, assembly methods, joint details, fastening methods, accessory listings, hardware location and schedule of finishes. CMD Project Management staff shall review and give approval of all cabinetry shop drawings prior to installation.

B. Product Data: Provide data for hardware accessories.

C. Samples: Submit actual sample items of proposed pulls, demonstrating hardware design, quality, and finish.

1.03 QUALITY ASSURANCE

A. Perform work in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Custom quality.

B. Perform cabinet construction in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Custom quality.

C. Manufacturer Qualifications: Member in good standing of the Architectural Woodwork Institute (AWI) and familiar with the AWI/AWMAC QSI.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Protect units from moisture damage.

1.05 LOCATIONS AND MISCELLANEOUS

A. Kitchen – typical base, upper and pantry cabinetry per plans

B. Bath – typical bath vanity and wardrobe/linen cabinetry per plans

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide supplier/contractor information to CMD Project Management staff for approval.

2.02 WOOD-BASED COMPONENTS

A. Wood fabricated from old growth timber is not permitted.

2.03 LUMBER MATERIALS

A. Hardwood Lumber: NHLA; Graded in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Grade II/Custom; average moisture content of 5-10 percent; species as follows:
   1. Exposed Surfaces: Species Red oak.
   2. Semi-Exposed Surfaces: Species Red oak.

2.04 PANEL MATERIALS

A. Veneer Faced Plywood Finish: HPVA HP-1; graded in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, core of particleboard or medium density fiberboard in compliance with ANSI A208.1 and A208.2; type of glue recommended for specific application; thickness as indicated; face veneer as follows:
   1. Exposed Surfaces: Grade AA, Red Oak, plain sliced.
   2. Semi-Exposed Surfaces: Grade AA, Red Oak, plain sliced.
   3. Concealed Surfaces: Melamine (cabinet interior, shelving and drawer boxes)

B. Particleboard: ANSI A208.1; medium density industrial type as specified in AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, composed of wood chips bonded with interior grade adhesive under heat and pressure; sanded faces; thickness as required; use for backing for plastic laminate unless otherwise indicated.

C. Medium Density Fiberboard (MDF): ANSI A208.2; type as specified in AWI/AWMAC Architectural Woodwork Quality Standards Illustrated; composed of wood fibers pressure bonded with moisture resistant adhesive to suit application; sanded faces; thickness as required.

D. Hardboard: AHA A135.4; Pressed wood fiber with resin binder, Class 1 - Tempered, 1/4 inch thick, smooth two sides (S2S); use for dust panels.

2.05 LAMINATE MATERIALS

A. Manufacturers:
   1. Formica Corporation: www.formica.com
   2. Panolam Industries International, Inc\Nevamar: www.nevamar.com
   3. Wilsonart International, Inc: www.wilsonart.com

B. Provide specific types as scheduled.
   1. Horizontal Surfaces: HGS, 0.048 inch nominal thickness, through color, color as selected, satin finish.
   2. Vertical Surfaces: VGS, 0.028 inch nominal thickness, through color, colors as scheduled, satin finish.
   3. Post-Formed Horizontal Surfaces: HGP, 0.039 inch nominal thickness, through color, color as selected, satin finish.
   4. Post-Formed Vertical Surfaces: VGP, 0.028 inch nominal thickness, through color, color as selected, satin finish.
   5. Cabinet Liner: CLS, 0.020 inch nominal thickness, through color, color as selected,.
   6. Laminate Backer: BKL, 0.020 inch nominal thickness, undecorated; for application to concealed backside of panels faced with high pressure decorative laminate.

2.06 COUNTERTOPS

A. Plastic Laminate Countertops: Particleboard substrate covered with HPDL, post-formed, with coved integral backsplash. Choose one of the below finish methods to conceal any backsplash to wall gapping that may occur.

   1. Backsplash to have oak top edge finished to match other woodwork. Contractor shall install ¾" x ½" oak base shoe molding, secured to wall, on top of backsplash wood edge to conceal any wall gaps.

   2. Backsplash to have post-formed top. Contractor shall install ¾" x 1 ½" solid oak cap piece installed so face of board rests over the top of the backsplash. Pre-drill and install trim screws through the oak into the wall studs. Make return cuts at the end of any exposed end. Caulk wall to wood joint.

B. Cultured Marble Vanity Tops:
   1. Bowl Size: Approximately 14 inches by 17 inches, oval shaped integral lavatory top with backsplash and side splash where top is in contact with sidewall or linen cabinet.
   2. Materials:
      a. Provide finished products having flame spread index of 35 and smoke developed

index of 15, when tested in accordance with ASTM E 84 in thickness of 3/4 inch.
b. Resin: Polyester type, with integral coloring, stain resistant to domestic chemicals and cleaners.
c. Polishing Cream: Compatible polishing cream to achieve specified sheen to gel coat.
d. Core Framing: Softwood lumber, clear and free of knots.
3. Finish:
a. Color: Matte White on White
b. Include Side Splash pieces where sidewall or utility cabinet is present.

2.07 WINDOW SILLS (Where indicated in RFP Selection Sheet)

A. Materials:
1. Provide finished products having flame spread index of 35 and smoke developed index of 15, when tested in accordance with ASTM E 84 in thickness of 3/4 inch.
2. Resin: Polyester type, with integral coloring, stain resistant to domestic chemicals and cleaners.
3. Polishing Cream: Compatible polishing cream to achieve specified sheen to gel coat.
4. Core Framing: Softwood lumber, clear and free of knots.
5. Thickness: 3/4 inch.
6. Edge: Bullnose.
7. Finish:
a. Color: Matte White on White

2.08 ACCESSORIES

A. Adhesive: Type recommended by fabricator to suit application.

B. Plastic Edge Banding: Extruded PVC, flat shaped; smooth finish; self locking serrated tongue; of width to match component thickness.
1. Color: As selected by CMD Project Management staff from manufacturer's full range.
2. Use at all exposed plywood edges.
3. Use at all exposed shelf edges.

C. Fasteners: Size and type to suit application.

D. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized finish in concealed locations and stainless steel, or chrome-plated finish in exposed locations.

E. Grommets: Standard plastic grommets for cut-outs, in color as selected.

F. Sink Base Protective Liner: Cabinet manufacturer shall install White P-Lam to cabinet bottom to prevent damage to cabinet bottom from plumbing leaks. This applies to Kitchen sink base and bathroom vanities.

2.09 HARDWARE

A. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.

B. Adjustable Shelf Supports: Standard side-mounted system using multiple holes for pin supports and coordinated self rests and shelf hold-down clips, satin chrome finish, for nominal 1 inch spacing adjustments.

C. Drawer and Door Pulls:

1. Standard (unless otherwise noted):

Amerock BP53012-G10 or Amerock BP53011-G10

D. Drawer Slides:
1. Type: Full extension.
2. Static Load Capacity: Commercial grade.
3. Mounting: Side mounted and extended under bottom edge of drawer.
4. Stops: Integral type.

E. Hinges: European style concealed self-closing type, BHMA No. B01602, steel with satin finish.

2.10 FABRICATION

A. Cabinet Style: Reveal overlay on face frame.

B. Cabinet Doors and Drawer Fronts: Stile and rail, 1/4 panel doors, flat drawer faces.

C. Drawer Construction Technique: biscuit or dowel jointed.

D. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.

E. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.

F. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.

G. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.

H. Matching Wood Grain: Comply with requirements of quality standard for specified Grade.

2.11 FACTORY FINISHING

A. Sand work smooth and set exposed nails.

B. On items to receive transparent finishes, use wood filler matching or blending with surrounding surfaces and of types recommended for applied finishes.

C. Finish work in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Section 1500. Catalyzed lacquer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify adequacy of backing and support framing.

B. Verify location and sizes of utility rough-in associated with work of this section.

3.02 INSTALLATION

A. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.

B. Use fixture attachments in concealed locations for wall mounted components.

C. Use concealed joint fasteners to align and secure adjoining cabinet units.

D. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.

E. Secure cabinets to floor using appropriate angles and anchorages.

F. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

3.03 ADJUSTING

A. Adjust installed work.

3.04 CLEANING

A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Floodproofing – At living spaces below grade

B. Damproofing – At slab on grade units/frost footings

1.02 RELATED REQUIREMENTS

A. Section 31 2323 - Fill.

B. Section 07 2100 - Thermal Insulation: Rigid insulation board used as protection board.

1.03 REFERENCE STANDARDS

A. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing; 2005.

B. ASTM D 1227 - Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing; 1995 (Reapproved 2007).

C. ASTM D 2822 - Standard Specification for Asphalt Roof Cement, Asbestos-Containing; 2005.

1.04 SUBMITTALS

A. Product Data: Provide properties of primer, bitumen, and mastics.

1.05 FIELD CONDITIONS

A. Follow manufacturer's installation instructions for each product type.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Flood Proofing (Living Spaces Below Grade)

1. Polywall Residential Stretch www.poly-wall.com

B. Damproofing (Slab-on-Grade Foundations Only)

1. Karnak Chemical Corp: 220AF Fibered Emulsion Dampproofing, www.karnakcorp.com
2. W.R. Meadows, Inc: Sealmastic, www.wrmeadows.com
3. Polywall Pro 1000 www.poly-wall.com
4. UG Drylok masonry waterproofer www.ugl.com
5. SealBest DrySeal Premium Rubberized Foundation Coating www.sealbest.com
6. Product substitutions: In accordance with Product Substitutions Section

2.02 COLD ASPHALTIC MATERIALS

A. Bitumen: Emulsified asphalt, ASTM D 1227; with fiber reinforcement other than asbestos (Type II).

B. Asphalt Primer: ASTM D 41, compatible with substrate.

C. Sealing Mastic: Asphalt roof cement, ASTM D 2822, Type I.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.
B. Verify substrate surfaces are durable, free of matter detrimental to adhesion or application of dampproofing system.
C. Verify that items that penetrate surfaces to receive dampproofing are securely installed.

3.02 PREPARATION

A. Protect adjacent surfaces not designated to receive dampproofing.
B. Clean and prepare surfaces to receive dampproofing in accordance with manufacturer's instructions.
C. Do not apply dampproofing to surfaces unacceptable to manufacturer.
D. Apply mastic to seal penetrations, small cracks, or minor honeycomb in substrate.

3.03 APPLICATION

A. Foundation Walls: Per manufacturer’s instruction for specific product and application.
B. Perform work in accordance with NRCA Roofing and Waterproofing Manual.
C. Prime surfaces in accordance with manufacturer's instructions.
D. Apply from top of foundation wall down to top of footing.
E. Extend 12 inches onto intersecting walls and footings, but do not extend onto surfaces exposed to view when Project is completed.
F. Install flashings and corner protection stripping at internal and external corners, changes in plane, construction joints, cracks, and where shown as "reinforced," by embedding an 8-inch-wide strip of asphalt-coated glass fabric in a heavy coat of dampproofing. Dampproofing coat for embedding fabric is in addition to other coats required.
G. Seal items projecting through dampproofing surface with mastic. Seal watertight.

END OF SECTION

SECTION 07 2100 – THERMAL INSULATION

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Board insulation at cavity wall construction, perimeter foundation wall, and underside of floor slabs.

B. Batt insulation and vapor retarder in exterior wall construction.

C. Glasswool Blowing Insulation in exterior wall construction. (Contractor Option)

D. Blown-in blanket attic insulation.

1.02 RELATED REQUIREMENTS

A. Section 06 1000 - Rough Carpentry: Supporting construction for batt insulation.

B. Section 07 2500 - Weather Barriers: Separate air barrier and vapor retarder materials.

C. Section 07 8400 - Firestopping.

D. Section 09 2116 - Gypsum Board Assemblies: Acoustic insulation.

1.03 REFERENCE STANDARDS

A. ASTM C 578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2007.

B. ASTM C 665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2006.

C. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2008.

D. ASTM E 136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2004.

1.04 FIELD CONDITIONS

A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 FOAM BOARD INSULATION MATERIALS

A. Extruded Polystyrene Board Insulation: ASTM C 578, Type IV; Extruded polystyrene board with either natural skin or cut cell surfaces; with the following characteristics:
   1. Flame Spread Index: 75 or less, when tested in accordance with ASTM E 84.
   2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E 84.
   3. Board Edges: Square.
   4. Compressive Resistance: 25 psi.
   5. Board Density: 1.6 lb/cu ft.
   6. Manufacturers:
      a. Dow Chemical Co: www.dow.com .
      b. Owens Corning Corp: www.owenscorning.com .
      c. Pactiv Building Products: www.pactiv.com/green-guard/ .
      d. DiversiFoam Products: www.diversifoam.com .

B. Extruded Polystyrene Board Insulation for horizontal applications: ASTM C 578, Type VII; Extruded polystyrene board with either natural skin or cut cell surfaces; with the following characteristics:
   1. Flame Spread Index: 75 or less, when tested in accordance with ASTM E 84.

2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E 84.
3. Board Edges: Square.
4. Compressive Resistance: 60 psi.
5. Board Density: 2.2 lb/cu ft.
6. Manufacturers:
   a. Dow Chemical Co: www.dow.com .
   b. Owens Corning Corp: www.owenscorning.com .
   c. Pactiv Building Products: www.pactiv.com/green-guard/ .
   d. DiversiFoam Products: www.diversifoam.com .

2.02 BATT INSULATION MATERIALS

A. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C 665; friction fit.
   1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E 84.
   2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E 84.
   3. Combustibility: Non-combustible, when tested in accordance with ASTM E 136.
   4. Formaldehyde Content: Zero.
   5. Thickness: As indicated on drawings.
   6. Facing: Unfaced.
   7. Manufacturers:
      a. CertainTeed Corporation: www.certainteed.com .
      b. Guardian Fiberglass, Inc.
      c. Johns Manville Corporation: www.jm.com .
      d. Knauf Fiber Glass.
      e. Owens Corning Corp: www.owenscorning.com .

2.03 GLASSWOOL BLOWING INSULATION IN EXTERIOR WALL CONSTRUCTION (CONTRACTOR OPTION)

A. Contractor to submit product data and system information to project coordinator for pre-approval prior to any installation.

2.04 LOOSE FILL FIBERGLASS INSULATION MATERIALS

A. Attic spaces shall be insulated with loose fill – Blown In Cellulose or fiberglass insulation. Install depth gauges securely attached to framing members and install to a settled depth equal to R-49. Attic insulation installer must provide insulation card for Building Official. Secure with permit pack.

2.05 ACCESSORIES

A. Foamed-in-Place Insulation: Polyurethane type, closed cell, low expansion spray foam insulation for filling window, door and other miscellaneous crevices including rim joists.

B. Sheet Vapor Retarder: Clear polyethylene film for above grade application, 6 mil thick.

C. Vapor Retarder Tape: Pressure-sensitive tape of type recommended by vapor retarder manufacturer for sealing joints and penetrations in vapor retarder.

D. Adhesive: Type recommended by insulation manufacturer for application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation and adhesive.

B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BOARD INSTALLATION AT FOUNDATION PERIMETER

A. Apply adhesive to back of boards:

1. Three continuous beads per board length.

B. Install boards horizontally on foundation perimeter.
   1. Place boards to maximize adhesive contact.
   2. Install in running bond pattern.
   3. Butt edges and ends tightly to adjacent boards and to protrusions.

C. Extend boards over expansion joints, unbonded to foundation on one side of joint.

D. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

E. Install R-10 to exterior of all foundations, and R-5 to interior of all foundations.

F. Replace any damaged insulation before covering.

3.03 BOARD INSTALLATION UNDER CONCRETE SLABS

A. Place 2” insulation under slabs on grade after base for slab has been compacted, and vapor barrier has been installed.

B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

C. Prevent insulation from being displaced or damaged while placing vapor retarder and placing slab. Replace any damaged insulation panels.

3.04 BATT INSTALLATION

A. Install insulation and vapor retarder in accordance with manufacturer's instructions.

B. Install in exterior wall spaces without gaps or voids. Do not compress insulation.

C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

E. Verify I.C. rated fixtures that allow contact with insulation.

I. At wood framing, place vapor retarder on warm side of insulation by stapling at 6 inches on center. Lap and seal sheet retarder joints over member face.

K. Tape seal tears or cuts in vapor retarder.

L. Extend vapor retarder tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane. Utilize acoustical / urethane sealant around window and openings. Leave poly stretched over openings and cut out after drywall installation.

M. Coordinate work of this section with construction of air barrier seal specified in Section 07 2500.

3.04 GLASSWOOL BLOWING INSULATION IN EXTERIOR WALL CONSTRUCTION (CONTRACTOR OPTION)

A.. Install insulation and vapor retarder in accordance with manufacturer’s instructions.

3.05 PROTECTION

A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

SECTION 07 2140 - CLOSED CELL SPRAY FOAM INSULATION

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Closed Cell Spray Foam Insulation (When indicated in RFP)

1.02 RELATED SECTIONS

A. Section 09 2116 Gypsum Board: Insulation installed in conjunction with interior wall and ceiling finish systems.

B. Section 23 3100 - Ducts: Insulation to surround HVAC ductwork.

1.03 REFERENCES

A. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

B. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials.

C. ASTM E 283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.

B. Storage: Store materials in dry locations with adequate ventilation, protected from freezing rain, direct sunlight and excess heat and in such a manner to permit easy access for inspection and handling. Store at temperature between 55 and 80 degrees F (12.7 to 26.6 degrees C).

C. Handling: Handle materials to avoid damage.

1.05 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

B. Do not apply insulation when substrate temperatures are under 40 degrees F prior to installation.

C. Surfaces must be dry prior to application of spray foam. Excess humidity may cause poor adhesion, and result in product failure.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Dow Chemical

B. CertainTeed

2.02 SPRAY FOAM INSULATION

A. Insulation: Closed Cell Foam

1. Physical and Mechanical Properties:

A. Core Density: 1.9-2.4 pcf when tested in accordance with ASTM D 1622.

B. Thermal Resistance (aged): 5.8 less than or equal to 2-1/2 inches / 6.4 when greater than 2-1/2 inches when tested in accordance with ASTM C 518 at 75 degrees F, (h-ft2- degrees F)/Btu.

C. Thermal Resistance (initial): 6.4 when tested in accordance with ASTM C 518 at 75 degrees F, (h-ft2- degrees F)/Btu.

D. Closed Cell Content: 88-95 percent when tested in accordance with ASTM D 2842.

E. Compressive Strength: Greater than 25 psi when tested in accordance with ASTM D 1621.

E. Tensile Strength: 23 psi when tested in accordance with ASTM D 1623.

F. Water Absorption: Less than 2 percent by volume when tested in accordance with ASTM D 2842.

G. Dimensional Stability: Less than 9 percent by volume when tested in accordance with ASTM D 2126 at 75 degrees F/95 percent RH, 28 Day.

H. Water Vapor Transmission: 1.3 perm/inch when tested in accordance with ASTM E 96.

I. Air Permeability: 0.013 when tested in accordance with ASTM E 283 at 1 inch thickness, L/s/m2.

J. Fungi Resistance: Pass, with no growth when tested in accordance with ASTM C 1338.

2. Fire performance

A. Flame Spread: Less than 25 when tested in accordance with ASTM E 84.

B. Smoke: Less than 450 when tested in accordance with ASTM E 84.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. Verify that all exterior and interior wall, partition, and floor/ceiling assembly construction has been completed to the point where the insulation may correctly be installed.

C. Verify that substrate and cavities are dry and free of any foreign material that will impede application.

D. Verify that mechanical and electrical services in ceilings, walls and floors have been installed and tested and, if appropriate, verify that adjacent materials are dry and ready to receive insulation.

E. If substrate preparation is the responsibility of another installer, notify General Contractor of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Mask and protect adjacent surfaces from overspray or dusting.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions. Product must be installed according to local code, and must be applied by a qualified applicator.

B. Apply insulation by spray method, to uniform monolithic density without voids.

C. Apply to achieve minimal thermal resistance R-Value of:

1. Ductwork in unconditioned space: R-8

2. *Walls: R-21

3. * Attic: R-14 (balance of required R-value with loose fill fiberglass.)

*IF REQUESTED IN RFP.

4. Rim Joists: R-21 (approved as contractor option)

D. Seal plumbing stacks, electrical wiring and other penetrations into attic to control air leakage.

E. Apply insulation to fill voids around doors and windows. Apply insulation to fill voids around accessible service and equipment penetrations.

F. Do not install spray foam insulation in areas where it will be in contact with equipment or materials with operating temperatures of 180 degrees F (82 degrees C) or greater.

G. Patch damaged areas.

3.04 FIELD QUALITY CONTROL

A. Inspection will include verification of insulation and density.

3.05 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 07 2500 – WEATHER BARRIERS

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Air Barriers: Materials to stop passage of air through exterior walls, joints between exterior walls and roof, and joints around frames of openings in exterior walls.

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-In-Place Concrete: Vapor retarder under concrete slabs on grade.

B. Section 07 2100 - Thermal Insulation: Vapor retarder installed in conjunction with batt insulation.

C. Section 07 9005 - Joint Sealers: Sealant materials and installation techniques.

PART 2 PRODUCTS

2.01 WEATHER BARRIER ASSEMBLIES

A. Air Barrier:
   1. On outside surface of sheathing of exterior walls use air barrier sheet, mechanically fastened type.

2.02 AIR BARRIER MATERIALS (WATER VAPOR PERMEABLE AND WATER-RESISTIVE)

A. Air Barrier Sheet, Mechanically Fastened:
   1. Air Penetration Resistance: Meets ASTM E1677 requirements.
   2. Air Permeance: 0.004 cubic feet per square foot, maximum, when tested in accordance with ASTM E 2178.
   3. Water Vapor Permeance: 5 perms, minimum, when tested in accordance with ASTM E96/E 96M Procedure A (desiccant method).
   4. Water Penetration Resistance: Withstand a water head of 78 inches, minimum, for minimum of 5 hours, when tested in accordance with AATCC 127.
   5. Ultraviolet and Weathering Resistance: Approved in writing by manufacturer for minimum of 4 months weather exposure.
   6. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 50 or less, when tested in accordance with ASTM E 84.
   7. Products:
      a. DuPont Company; **Tyvek HomeWrap**: www.dupont.com
         Product Substitutions will not be allowed.

2.03 SEALANTS

A. Primers, Cleaners, and Other Sealant Materials: As recommended by sealant manufacturer, appropriate to application, and compatible with adjacent materials.

2.04 ACCESSORIES

A. Self-Adhesive Sheet Flashing: ASTM D 1970.
   1. Composition: Face material shall be conformable polyolefin with butyl rubber adhesive composition.
   2. Thickness: 60 mil minimum.
   3. Width: 9 inches.
   4. Acceptable Products:
      a. Dow Chemical Company (The); Weathermate Flexible Flashing: www.building.dow.com .
      b. DuPont Company; Flexwrap: www.dupont.com .
      c. Fiberweb, Inc.; Flashing Flex: www.typarhousewrap.com

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and conditions are ready to accept the work of this section.

3.02 PREPARATION

A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.

B. Clean and prime substrate surfaces to receive adhesives and sealants in accordance with manufacturer's instructions.

3.03 INSTALLATION

A. Install materials in accordance with manufacturer's instructions.

B. Air Barriers: Install continuous air-tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.

C. Mechanically Fastened Sheets - On Exterior:
   1. Install sheets shingle-fashion to shed water, with seams generally horizontal.
   2. Overlap seams as recommended by manufacturer but at least 6 inches.
   3. Overlap at outside and inside corners as recommended by manufacturer but at least 12 inches.
   4. Seal seams, laps, penetrations, tears, and cuts with self-adhesive tape; use only large-headed, gasketed fasteners recommended by the manufacturer.
   5. Where stud framing rests on concrete or masonry, extend lower edge of sheet at least 4 inches below bottom of framing and seal to foundation with sealant, or overlap and tape to metal base flashing.
   6. Install air barrier and vapor retarder UNDER jamb flashings.
   7. Install head flashings under weather barrier and tape joints.
   8. At openings to be filled with frames having nailing flanges, wrap excess sheet into opening; at head, seal sheet over flange and flashing.

D. Openings and Penetrations in Exterior Weather Barriers:
   1. Install self-adhesive flashing over sills, covering entire sill frame member, extending at least 5 inches onto weather barrier and at least 6 inches up jambs; mechanically fasten stretched edges. Tilt sill or install beveled shim under flashing material.
   2. At openings to be filled with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with self-adhesive flashing at least 4 inches wide; do not seal sill flange.
   3. At openings to be filled with non-flanged frames, seal weather barrier to all sides of opening framing, using self-adhesive flashing at least 9 inches wide, covering entire depth of framing.
   4. At head of openings, install self-adhesive flashing under weather barrier extending at least 2 inches beyond face of jambs; seal weather barrier to flashing.
   5. Service and Other Penetrations: Form self-adhesive flashing around penetrating item and seal to weather barrier surface.

3.04 FIELD QUALITY CONTROL

A. Do not cover installed weather barriers until required inspections have been completed.

3.05 PROTECTION

A. Do not leave materials exposed to weather longer than recommended by manufacturer.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Asphalt shingle roofing.

B. Flexible sheet membranes for eave protection, underlayment, and valley protection.

C. Associated metal flashings and accessories.

1.02 RELATED REQUIREMENTS

A. Section 06 1600 - Sheathing: Roof sheathing.

B. Section 07 6200 - Sheet Metal Flashing and Trim: Edge and cap flashings.

1.03 REFERENCE STANDARDS

A. ASTM D 1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2001.

B. ASTM D 3462 - Standard Specification for Asphalt Shingles Made From Glass Felt and Surfaced With Mineral Granules; 2007.

C. ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007.

D. ASTM D 4869 - Standard Specification for Asphalt-Saturated Organic Felt Underlayment Used in Steep Slope Roofing; 2005.

E. NRCA MS104 - The NRCA Steep Roofing Manual; National Roofing Contractors Association; 2001, Fifth Edition, with interim updates.

F. UL (RMSD) - Roofing Materials and Systems Directory; Underwriters Laboratories Inc.; current edition.

1.04 QUALITY ASSURANCE

A. Perform Work in accordance with the recommendations of NRCA Steep Roofing Manual.

B. Installer Qualifications: A firm or individual that is approved, authorized, or licensed by asphalt shingle roofing system manufacturer to install roofing system indicated.

C. Products Required to Comply with Fire Resistance Criteria: UL listed and labeled.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store roofing materials in a dry, well-ventilated, weather-tight location according to asphalt shingle manufacturer's written instructions. Store underlayment rolls on end on pallets or other raised surfaces. Do not double-stack rolls.
   1. Handle, store, and place roofing materials in a manner to avoid significant or permanent damage to roof deck or structural supporting members.

B. Protect unused underlayment from weather, sunlight, and moisture when left overnight or when roofing work is not in progress.

1.07 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit asphalt shingle roofing to be performed according to manufacturer's written instructions and warranty requirements.
   1. Install self-adhering sheet underlayment within the range of ambient and substrate temperatures recommended by manufacturer.

1.08 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace asphalt shingles that fail in materials or workmanship within specified warranty period. Materials failures include manufacturing defects and failure of asphalt shingles to self-seal after a reasonable time.
   1. Material Warranty Period: 30 years from date of Substantial Completion, prorated, with first 10 years non-prorated.
   2. Wind-Speed Warranty Period: Asphalt shingles will resist blow-off or damage caused by wind speeds up to 90 mph for 10 years from date of Substantial Completion.
   3. Algae-Discoloration Warranty Period: Asphalt shingles will not discolor 10 years from date of Substantial Completion.

B. Special Project Warranty: Roofing Installer's warranty, on warranty form at end of this Section, signed by roofing Installer, covering Work of this Section, in which roofing Installer agrees to repair or replace components of asphalt shingle roofing that fail in materials or workmanship within the following warranty period:
   1. Warranty Period: 2 years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 SHINGLES

A. Manufacturers:
   1. GAF Materials Corporation; Product – Advanced Protection Shingles (PreviouslyTimberline 30 year): www.gaf.com .
   2. No substitutes will be accepted.

B. Asphalt Shingles: Asphalt-coated glass felt, mineral granule surfaced, complying with ASTM D 3462;
   1. Self-sealing type.
   2. Style: Square.
   3. Color: As selected by CMD Project Management staff from manufacturer's full range.

2.02 SOFFIT

A. Aluminum Soffit: Formed and coated aluminum soffit complying with AAMA 1402, including Paragraph 3.2.4.2.1, "Standard Commercial Coating."
   1. Basis of Design: Rollex Corporation: System 3.
   2. Other Acceptable Manufacturers:
      a. Alcoa Building Products, Inc.
      b. Gentek Building Products, Inc.
   3. Pattern: 12-inch exposure in V-grooved, triple 4-inch board style.
   4. Texture: Smooth.
   5. Ventilation: Provide perforated soffit where indicated.
      a. Free Air Space: Minimum 9.72 square inches per lineal foot.
   6. Minimum Nominal Thickness: 0.019 inch.
   7. Finish: Manufacturer's standard finish.
   8. Colors for Aluminum Soffit: As selected by CMD Project Management staff from manufacturer's full range.

2.03 SHEET MATERIALS

A. Eave Protection Membrane: Self-adhering polymer-modified asphalt sheet complying with ASTM D 1970; 40 mil total thickness; with strippable treated release paper and polyethylene sheet top surface.
   1. Manufacturers:
      a. CertainTeed Corporation; Product Winterguard.
      b. Grace, W. R. & Co.; Product Grace Ice and Water Shield.
      c. Johns Manville International, Inc.; Product Roof Defender.
      d. Owens Corning; Product WeatherLock M.

B. Felt Underlayment: Asphalt-saturated organic felt underlayment, complying with ASTM D 4869, minimum 15 lb/100 sq ft.

2.04 ACCESSORIES

A. Nails: Standard round wire shingle type, of hot-dipped zinc coated steel, 12 gage, 0.105 inch shank diameter, 3/8 inch head diameter, of sufficient length to penetrate through roof sheathing or 3/4 inch into roof sheathing or decking.

B. Ridge Vents: Plastic, extruded with vent openings that do not permit direct water or weather entry; flanged to receive shingles; Shingle Vent II manufactured by Air Vent Inc.

2.05 METAL FLASHINGS

A. Metal Flashings: Provide sheet metal eave edge, pre-formed metal valley, gable edge, ridge, ridge vents, open valley flashing, chimney flashing, dormer flashing, and other flashing indicated.

B. Sheet Metal: Prefinished galvanized steel, as specified in Section 07 6200.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions prior to beginning work.

B. Verify that deck is of sufficient thickness to accept fasteners.

C. Verify that roof penetrations and plumbing stacks are in place and flashed to deck surface.

D. Verify roof openings are correctly framed.

E. Verify deck surfaces are dry, free of ridges, warps, or voids.

3.02 PREPARATION

A. Seal roof deck joints wider than 1/8 inch with deck tape.

B. At areas where eave protection membrane is to be adhered to substrate, fill knot holes and surface cracks with latex filler.

C. Broom clean deck surfaces before installing underlayment or eave protection.

3.03 INSTALLATION - EAVE PROTECTION MEMBRANE

A. Install eave protection membrane from eave edge to minimum 2 ft up-slope beyond interior face of exterior wall.

B. Install eave protection membrane as indicated on drawings.

C. Install eave protection membrane in accordance with manufacturer's instructions.

3.04 INSTALLATION - UNDERLAYMENT

A. Install underlayment perpendicular to slope of roof, with ends and edges weather lapped minimum 4 inches. Stagger end laps of each consecutive layer. Nail in place. Weather lap minimum 4 inches over eave protection.
   1. Install felt underlayment on roof deck not covered by self-adhering sheet underlayment. Lap sides of felt over self-adhering sheet underlayment not less than 3 inches in direction to shed water. Lap ends of felt not less than 6 inches over self-adhering sheet underlayment.

B. Items projecting through or mounted on roof: Weather lap and seal watertight with plastic cement.

3.05 INSTALLATION - VALLEY PROTECTION

A. Install a 36-inch wide strip of ice/water protection lining centered in valley. Install pre-formed metal valley flashing and secure with roofing nails. Lap ends of strips at least 12 inches in direction to shed water, and seal with asphalt roofing cement. Fasten to roof deck with roofing nails.

3.06 INSTALLATION - METAL FLASHING AND ACCESSORIES

A. Install flashings in accordance with NRCA requirements.

B. Weather lap joints minimum 2 inches and seal weather tight with plastic cement.

C. Secure in place with nails at 8 inches on center. Conceal fastenings.

D. Items Projecting Through or Mounted on Roofing: Flash and seal weather tight with plastic cement.

3.07 INSTALLATION - SHINGLES

A. Install shingles in accordance with manufacturer's instructions.
   1. Fasten individual shingles (hip/ridge) using 2 nails per shingle, or as required by code, whichever is greater.
   2. Fasten strip shingles using 4 nails per strip, or as required by code, whichever is greater.

B. Place shingles in straight coursing pattern with 5 inch weather exposure to produce double thickness over full roof area. Provide double course of shingles at eaves.

C. Project first course of shingles 3/4 inch beyond fascia boards.

D. Extend shingles 1/2 inch beyond face of gable edge fascia boards.

E. Extend shingles on one slope across valley and fasten. Trim shingles 1” to 2” back from edge of pre-formed metal valley flashing.

F. Cap ridges with individual shingles, maintaining 5 inch weather exposure. Place to avoid exposed nails.

G. Ridge Vents: Install continuous ridge vents over asphalt shingles according to manufacturer's written instructions. Fasten with roofing nails of sufficient length to penetrate sheathing.

H. Mechanical through-roof venting to be installed on back side of roof (not visible from front street wherever possible)

I. Ridge and Hip Cap Shingles: Maintain same exposure of cap shingles as roofing shingle exposure. Lap cap shingles at ridges to shed water away from direction of prevailing winds. Fasten with roofing nails of sufficient length to penetrate sheathing.
   1. Fasten ridge cap asphalt shingles to cover ridge vent without obstructing airflow.

J. Coordinate installation of roof mounted components or work projecting through roof with weather tight placement of counterflashings.

K.. Complete installation to provide weather tight service.

3.08 PROTECTION

A. Do not permit traffic over finished roof surface.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Vinyl siding and trim.

B. Thermoplastic polyolefin shakes.

C. Raised Panel Vinyl Window Shutters.

1.02 RELATED REQUIREMENTS

A. Section 07 2500 - Weather Barriers. Weather barrier under siding.

B. Section 07 9005 - Joint Sealers.

1.03 REFERENCE STANDARDS

A. ASTM D 635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position; 2006.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Not less than three years of experience with products specified.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Siding: CertainTeed Corporation: Monogram 46, www.certainteed.com

B. Shakes: CertainTeed Corporation: Northwoods Single 7”, www.certainteed.com

C. Raised Panel Vinyl Window Shutters: Mid America Siding Components: P2 12” wide, www.midamericacomponents.com

2.02 MATERIALS

A. Horizontal Vinyl Siding:
   1. Acceptable Product: CertainTeed Monogram 46.
   2. Profile: Clapboard, Double 5-Inch; 5 inches wide; 10 inch exposure.
   3. Thickness: 0.046 inch, minimum.
   4. Length: 12’-6” feet, minimum.
   5. Nailing Hem: Double layer, with 1-1/8” long nail holes at maximum 1-5/8” on center.
   6. Finish: Simulated Cedar.
   7. Color: As selected by CMD Project Management staff from manufacturer’s full range of available colors.

B. Shakes: Injection molded simulated cedar shingles made from thermoplastic polyolefin, complying with ASTM D 3679 except for material composition.
   1. Profile: Northwoods style shingles; 7” x 10ft single course panels.
   2. Thickness: 0.10 inch, minimum.
   3. Nailing Hem: Single layer, with 1-1/8 inch long nail holes at maximum 1-5/8 inches on center.
   4. Color: As selected by CMD Project Management staff from manufacturer's full range of available colors.

C. Accessories: Provide coordinating accessories made of same material as required for complete and proper installation whether or not specifically shown on the drawings.
   1. Color: Contrasting color, to be selected.
   2. Length:
      a. Corner Posts: 10 feet, minimum.
      b. Other Trim: 12.5 feet, minimum.
   3. Profiles: Provide types as indicated on the drawings.
   4. J-Channel Trim: 3/8 inches.
   5. Corner Posts:
      a. Certainteed One Piece Corner, Woodgrain finish, fastened to house corner. Paint to match main siding color.
      b. L.P. Smartside Woodgrain 5/4" one piece corner post. Paint to match main siding color.
      c. J-Channel Trim on either side of corner system, blind caulked to corner trim.
   6. Frieze Board: 7-1/4 inches wide (when indicated on plans)
   7. F Channel Trim.
   8. Drip Cap.

   Mid-America Mounting Blocks and Vents in Certainteed color specified. Mounting blocks shall be installed for all openings, j-channel will not be allowed to box any openings other than windows or doors.

D. Fasteners: Aluminum nails, alloy 5056 or 6110, with minimum tensile strength of 63,000 pounds per square inch; length as required to penetrate framing at least 3/4 inch.

E. Joint Sealers: As specified in Section 07 9005.

F. Vinyl Shutters: P2, 12" width. Height to be custom ordered: Bottom of brickmold to top of brickmold plus 2" overall.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrate conditions before beginning installation; verify dimensions and acceptability of substrate.

B. Verify that weather barrier has been installed over substrate completely and correctly.

C. Do not proceed with installation until unacceptable conditions have been corrected.

D. If substrate preparation is the responsibility of another installer, notify Project Manager of unsatisfactory preparation before proceeding.

3.02 INSTALLATION

A. Install siding, soffit, and trim in accordance with manufacturer's printed installation instructions.

B. Attach securely to framing, not sheathing, with horizontal components true to level and vertical components true to plumb, providing a weather resistant installation.

C. Install joint sealers between siding/soffit/trim and adjacent construction, and penetrations using procedures specified in Section 07 9005. **Contractor shall install color matching caulk.**

D. Clean dirt from surface of installed products, using mild soap and water.

3.03 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fabricated sheet metal items, including flashings, counterflashings, gutters, downspouts, foundation flashing at grade, and other items indicated in Schedule.

1.02 REFERENCE STANDARDS

A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels; 2005.

B. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2007.

C. ASTM D 4479 - Standard Specification for Asphalt Roof Coatings - Asbestos-Free; 2007.

D. ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007.

E. SMACNA (ASMM) - Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors' National Association; 2003.

1.03 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA Architectural Sheet Metal Manual requirements and standard details, except as otherwise indicated.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

B. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

A. Pre-Finished Galvanized Steel: ASTM A 653/A 653M, with G90/Z275 zinc coating; minimum 0.0239 inch thick base metal, shop pre-coated with PVDF coating.
   1. PVDF (Polyvinylidene Fluoride) Coating: Superior Performance Organic Finish, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system.
   2. Color: As selected by CMD Project Management staff from manufacturer's full colors.

2.02 ACCESSORIES

A. Fasteners: Same material and finish as flashing metal.

B. Slip Sheet: Rosin sized building paper.

C. Primer: Zinc chromate type.

D. Protective Backing Paint: Asphaltic mastic, ASTM D 4479 Type I.

E. Sealant: Type ES-2 specified in Section 07 9005.

F. Plastic Cement: ASTM D 4586, Type I.

2.03 FABRICATION

A. Form sections true to shape, accurate in size, square, and free from distortion or defects.

B. Form pieces in longest possible lengths.

C. Hem exposed edges on underside 1/2 inch; miter and seam corners.

D. Form material with flat lock seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.

E. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.

F. Fabricate vertical faces with bottom edge formed outward 1/4 inch (6 mm) and hemmed to form drip.

2.04 GUTTER AND DOWNSPOUT FABRICATION

A. Gutters: K-Profile 5”

B. Downspouts: 3” x 4”. Coordinate with concrete contractor for sleeve installation in exterior concrete and for cast-in-place splash pads.

C. Gutters and Downspouts: Size for rainfall intensity determined by a storm occurrence of 1 in 10 years in accordance with SMACNA Architectural Sheet Metal Manual.

D. Accessories: Profiled to suit gutters and downspouts.
   1. Anchorage Devices: Type recommended by fabricator.

E. Splash Pads: Cast in place concrete type, 18 inches wide by 60 inches long x 6 inches thick with rebar reinforcement. Work to be performed under Section 03 3000.

F. Downspout Boots: Steel.

G. Seal metal joints.

H. Supply and install gutter covers at all gutters. Spectra 6”x20’ gutter screen or Frost King 6”x20’ gutter guard.

2.05 BASE METAL FLASHING

A. Base metal flashing for all foundation types shall consist of a pre-finished 26 gauge steel drip cap extending up the exterior wall 2”, over the top of exposed insulation and down over the insulation face 2” with a hemmed edge. The remainder of the exposed insulation face shall be covered by aluminum coil stock. Coil stock to be spot glued to the foam insulation and shall be of sufficient width to be buried a minimum of 6” below grade. If multiple rows of coil stock are needed to cover exposed insulation, a hemmed edge will be required to the overlapping course to aid in product stability. Utilize adhesive and stainless steel pan head screws to secure additional courses. Colors to match RFP selection sheet for sheet metal trim.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.

B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 PREPARATION

A. Install starter and edge strips, and cleats before starting installation.

B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of15 mil.

3.03 INSTALLATION

A. Install exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

B. Expansion Provisions: Provide for thermal expansion of exposed sheet metal Work. Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

C. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards. Fill joint with sealant and form metal to completely conceal sealant.
   1. Use joint adhesive for nonmoving joints specified not to be soldered.

D. Separations: Separate metal from non-compatible metal or corrosive substrates by coating concealed surfaces, at locations of contact, with asphalt mastic or other permanent separation as recommended by manufacturer.
   1. Underlayment: Where installing metal directly on cementitious or wood substrates, install a slip sheet of red-rosin paper and a course of polyethylene underlayment.
   2. Bed flanges of Work in a thick coat of mastic sealant where required for waterproof performance.

E. Secure gutters and downspouts in place using concealed fasteners.

F. Connect downspouts to downspout boots.

3.04 SCHEDULE

A. Fascia and Cornices:

B. Gutters and Downspouts:

C. Flashings Associated with Shingle Roofing, including Valley, Hip, Ridge, Eave, Gutter Edge, Gable Edge, and Chimney:

D. Window and door head metal flashing (drip cap)

E. Foundation Insulation protection: Base Metal Flashing.

END OF SECTION

SECTION 07 8400 – FIRESTOPPING

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Firestopping systems.

B. Firestopping of all joints and penetrations in fire-resistance rated and smoke-resistant assemblies, whether indicated on drawings or not.

1.02 REFERENCE STANDARDS

A. ASTM E 814 - Standard Test Method for Fire Tests of Through-Penetration Fire Stops; 2006.

B. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.; current edition.

1.03 SUBMITTALS

A. Product Data: Provide data on product characteristics, performance ratings, and limitations.

B. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.04 QUALITY ASSURANCE

A. Fire Testing: Provide firestopping assemblies of designs that provide the specified fire ratings when tested in accordance with methods indicated and ASTM E 814.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

C. Installer Qualifications: Company specializing in performing the work of this section and:

1.05 FIELD CONDITIONS

A. Provide ventilation in areas where solvent-cured materials are being installed.

PART 2 PRODUCTS

2.01 FIRESTOPPING SYSTEMS

A. Firestopping: Any material meeting requirements.
   1. Fire Ratings: Use any system listed by UL or tested in accordance with ASTM E 814 that has F Rating equal to fire rating of penetrated assembly and minimum T Rating of 1 hour and that meets all other specified requirements.

2.02 MATERIALS

A. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Type required for tested assembly design.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify openings are ready to receive the work of this section.

3.02 PREPARATION

A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter that could adversely affect bond of firestopping material.

B. Remove incompatible materials that could adversely affect bond.

C. Install backing materials to arrest liquid material leakage.

3.03 INSTALLATION

A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.

B. Do not cover installed firestopping until inspected by authority having jurisdiction.

3.04 CLEANING

A. Clean adjacent surfaces of firestopping materials.

3.05 PROTECTION

A. Protect adjacent surfaces from damage by material installation.

END OF SECTION

SECTION 07 9005 – JOINT SEALERS

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Sealants and joint backing.

B. Pre-compressed foam sealers.

1.02 RELATED REQUIREMENTS

A. Section 07 8400 - Firestopping: Firestopping sealants.

B. Section 09 2116 - Gypsum Board Assemblies: Acoustic sealant.

1.03 REFERENCE STANDARDS

A. ASTM C 834 - Standard Specification for Latex Sealants; 2005.

B. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants; 2005.

C. ASTM C 1193 - Standard Guide for Use of Joint Sealants; 2009.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with other sections referencing this section.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

B. Applicator Qualifications: Company specializing in performing the work of this section approved by manufacturer.

1.05 FIELD CONDITIONS

A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.06 WARRANTY

A. Correct defective work within a five year period after Date of Substantial Completion.

B. Warranty: Include coverage for installed sealants and accessories which fail to achieve airtight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Silicone Sealants:
   1. Bostik Inc: www.bostik-us.com .
   2. Momentive Performance Materials, Inc (formerly GE Silicones): www.momentive.com
   3. Pecora Corporation: www.pecora.com .
   4. BASF Construction Chemicals-Building Systems: www.chemrex.com .
   5. Tremco, Inc.

B. Polyurethane Sealants:
   1. OSI Quad: www.osipro.com
   2. Bostik Inc: www.bostik-us.com .
   3. BASF Construction Chemicals-Building Systems: www.chemrex.com .
   4. Pacific Polymers, Inc.
   5. Sika Corporation, Inc.
   6. Tremoc, Inc.

C. Acrylic Sealants:
   1. Tremco Global Sealants: www.tremcosealants.com .

D. Butyl Sealants:
   1. Bostik Inc: www.bostik-us.com .
   2. Pecora Corporation: www.pecora.com .

E. Acrylic Emulsion Latex Sealants:
   1. Bostik Inc: www.bostik-us.com .
   2. Pecora Corporation: www.pecora.com .
   3. BASF Construction Chemicals-Building Systems: www.chemrex.com .
   4. Tremco, Inc.

F. Preformed Compressible Foam Sealers:
   1. EMSEAL Joint Systems, Ltd: www.emseal.com .
   2. Sandell Manufacturing Company, Inc: www.sandellmfg.com .
   3. Dayton Superior Corporation: www.daytonsuperior.com .

2.02 SEALANTS

A. Sealants and Primers - General: Provide only products having lower volatile organic compound (VOC) content than required by regulation 8, rule 51, of the Bay Area Air Quality Management District.

B. Type ES-1 - General Purpose Exterior Sealant: Polyurethane; ASTM C 920, Grade NS, Class 25, Uses M, G, and A; multi- component.
   1. Color: To be selected by CMD Project Management staff from manufacturer's full range.
   2. Product: OSI Quad Advanced Formula Sealant manufactured by Henkel Corporation.
   3. Applications: Use for:
      a. Siding penetration sealing.
      b. Control, expansion, and soft joints in masonry.
      c. Joints between concrete and other materials.
      d. Joints between metal frames and other materials.
      e. Other exterior joints for which no other sealant is indicated.

C. Type ES-2 - Exterior Metal Lap Joint Sealant: Butyl or polyisobutylene, nondrying, nonskinning, noncuring.
   1. Applications: Use for:
      a. Concealed sealant bead in sheet metal work.
      b. Concealed sealant bead in siding overlaps.

D. Type ES-3 - General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C 834, Type OP, Grade NF single component, paintable.
   1. Color: To be selected by CMD Project Management staff from manufacturer's full range.
   2. Product: Tremflex 834 manufactured by Tremco, Inc.
   3. Applications: Use for:
      a. Interior wall and ceiling control joints.
      b. Joints between door and window frames and wall surfaces.
      c. Other interior joints for which no other type of sealant is indicated.

E. Type ES-4 - Bathtub/Tile Sealant: White silicone; ASTM C 920, Uses I, M and A; single component, mildew resistant.
   1. Product: Tremsil 200 manufactured by Tremco, Inc.
   2. Applications: Use for:
      a. Joints between plumbing fixtures and floor and wall surfaces.
      b. Joints between kitchen and bath countertops and wall surfaces.

F. Type ES-5 - Interior Floor Joint Sealant: Polyurethane, self-leveling; ASTM C 920, Grade P, Class 25, Uses T, M and A; single component.
   1. Approved by manufacturer for wide joints up to 1-1/2 inches.
   2. Color: To be selected by Project Manager from manufacturer's full range.
   3. Applications: Use for:

a. Expansion joints in floors.

G. Type ES-6 - Concrete Paving Joint Sealant: Polyurethane, self-leveling; ASTM C 920, Class 25, Uses T, I, M and A; multi- component.
1. Color: Color as selected.
2. Product: THC-900 manufactured by Tremco, Inc.
3. Applications: Use for:
a. Joints in sidewalks and vehicular paving.

2.03 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint Backing: Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces and joint openings are ready to receive work.

B. Verify that joint backing and release tapes are compatible with sealant.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean and prime joints in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C 1193.

D. Protect elements surrounding the work of this section from damage or disfigurement.

3.03 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Perform installation in accordance with ASTM C 1193.

C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.

D. Install bond breaker where joint backing is not used.

E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

G. Tool joints concave.

3.04 CLEANING

A. Clean adjacent soiled surfaces.

3.05 PROTECTION

A. Protect sealants until cured.

3.06 SCHEDULE

A. Exterior Joints for Which No Other Sealant Type is Indicated: Type ES-1.

B. Lap Joints in Exterior Sheet Metal Work: Type ES-2.

C. Butt Joints in Exterior Metal Work and Siding: Type ES-1.

D. Joints Between Exterior Metal Frames and Adjacent Work (except masonry): Type ES-1.

E. Under Exterior Door Thresholds: Type ES-6.

F. Interior Joints for Which No Other Sealant is Indicated: Type ES-3; None; N/A.

G. Control and Expansion Joints in Interior Concrete Slabs and Floors: Type ES-5.

H. Joints Between Plumbing Fixtures and Walls and Floors, and Between Countertops and Walls: Type ES-4.

J. Perimeter joints on interior and exterior side of windows, frames, and louvers in walls: Type ES-1.

K. Where treated lumber abuts concrete slabs, acoustical sealant will be installed continuously at interior side of the wall plate: Type ES-1

END OF SECTION

SECTION 08 1113 - HOLLOW METAL DOORS AND FRAMES

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-fire-rated Hollow Metal steel doors and frames. (Built-in Storm Shelter Doors)

B. Steel frames for interior wood doors. (When requested on RFP Selection Sheet)

C. Steel entry doors. (All Entries to the Home, including the Garage Service Door Unless Noted Otherwise)

D. Aluminum Ventilating Storm Doors. (All Main Entry and Patio Doors)

1.02 RELATED REQUIREMENTS

A. Section 08 1416 – Flush Wood Doors

B. Section 08 1412 – Panelized Wood Interior Pre-hung Doors

C. Section 09 9000 - Painting and Coating: Field staining of interior jambs.

D. Section 08 7100 – Door Hardware

1.03 REFERENCE STANDARDS

A. ANSI A250.8 - SDI-100 Recommended Specifications for Standard Steel Doors and Frames; 2003.

B. ANSI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 1998 (R2004).

C. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; The National Association of Architectural Metal Manufacturers; 2007.

1.04 SUBMITTALS

A. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.

B. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store in accordance with NAAMM HMMA 840.

B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Interior Hollow Metal Steel Frames (For use when built-in storm shelter is specified in RFP Selection sheet):
   1. Windsor Republic Doors: www.republicdoor.com .
   2. Steelcraft: www.steelcraft.com .

B. Interior Steel Frames (when specified in RFP Selection sheet)
   1. Timely Frames: www.timelyframes.com

C. Steel Entry Doors and Frames:

1. Therma-Tru Doors; Product: www.thermatru.com .
    a. Entry Doors: Steel Exterior Doors, Style TS210 6 Panel
    b. Approved equals will be considered. Submit data to CMD for review pre-bid.

D. Aluminum Ventilating Storm Doors (All Main Entry and Patio Door Locations)
1. EMCO Enterprises, Inc.
    a. Model: 200 Series E2TR-36WH, available through Home Depot. Store Sku # 818739
    b. Include storm door chain and spring wind catch hardware. Adjust chain hardware from binding on storm door top frame cap.

2.02 STEEL ENTRY DOORS AND FRAMES

A. Energy Star rated: All entry doors must meet Energy Star requirements.

B. Skin Material: 24-gauge steel.

C. Door Edges: Machinable kiln-dried white pine with full thermal break.

D. Blocking: Provide wood lockblock for hardware support.

E. Adjustable Security Strike Plate: Adjustable type, permitting in-out adjustment of door in frame, up to 3/16 inch.

F. Weather-stripping: Jacketed urethane weather-strip, kerf-fit to frame stops, door bottom gasket, and corner seal pads.

G. Threshold: Public Access Sill, thermally broken at all Slab-on-Grade units. Adjustable sill for exterior mechanical rooms and multi-level homes. Include 12-guage galvanized steel angle to cover exposed foundation insulation.

H. Clad wood jambs.

I. Insulation: Polyurethane foam core.

J. Finish: Door shall be factory finished, unless custom color is noted on the RFP Selection Sheet. Provide temporary / construction door slab for use during general building construction. Interior wood jambs shall be stained and finished to match selected interior stain color.

K. Warranty: 10 years.

2.03 ALUMINUM CLADDING

A. Manufacturers:
1. FrontLine Building Products; Product: Brick mould and Jamb Covers.

B. Locations: Provide aluminum clad wrap and brick mould at entry doors.

C. Material: 16-gauge extruded aluminum.

D. Colors: As selected from full line of colors.

2.04 INTERIOR STEEL FRAMES (When indicated on RFP Selection Sheet)

A. Manufacturers:
1. Timely Frames: TA-8 with standard steel casing.
    a. Contractor shall submit color samples for Owner selection.

2.05 INTERIOR STEEL DOORS AND FRAMES FOR BUILT-IN STORM SHELTER(when indicated in Request for Proposal)

A. Steelcraft PW-14 Series door and FP-14 frame:

1. Prepped with upper and lower deadbolt and non-locking passage hardware.

2. Dorma D800 series deadbolts with “turn x turn” option (no key, turn on both sides) satin chrome finish.

3 Schlage ND10S F75 Passage set: Non-locking, satin chrome finish.

B. Republic Door FEMA 320 door and frame:

1. Prepped with upper and lower deadbolt and non-locking passage hardware.

2. Dorma D800 series deadbolts with “turn x turn” option (no key, turn on both sides) satin chrome finish.

3. Shlage ND10S F75 Passage set: Non-locking, satin chrome finish.

2.06 ACCESSORY MATERIALS

A. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.

B. Temporary Frame Spreaders: Provide for all factory- or shop-assembled frames.

C. Frame Anchors: ASTM A 591/A 591M, Commercial Steel (CS), 40Z (12G) coating designation; mill phosphatized.

D. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

2.07 FINISH MATERIALS

A. Primer: Rust-inhibiting, complying with ANSI A250.10, door manufacturer's standard. Prepped for field finishing.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

3.03 INSTALLATION

A. Install in accordance with the requirements of the specified door grade standard and NAAMM HMMA 840.

B. Coordinate frame anchor placement with wall construction.

C. Coordinate installation of hardware.

3.04 ADJUSTING

A. Adjust for smooth and balanced door movement.

END OF SECTION

SECTION 08 1412 - WOOD INTERIOR PRE-HUNG DOORS

General Building Construction

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Bypass Doors
B. Passage Doors

1.2 DELIVERY, STORAGE AND HANDLING

A. Deliver doors, materials and components in manufacturer's original, unopened, undamaged containers with identification labels intact.
B. Store doors as recommended by manufacturer.

1.3 WARRANTY

A. Manufacturer standard warranty indicating that doors will be free from material and workmanship defects from the date of substantial completion for the time periods indicated below:

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Jeld-Wen: website www.jeld-wen.com
B. Midwest Manufacturing: website www.midwestmanufacturing.com
C. Masonite: website www.masonite.com
D. Bayer Built: www.bayerbuilt.com
E. Other similar manufacturers allowed.

2.2 MATERIALS AND CONSTRUCTION

A. Stile and rails: Engineered wood (Laminated Veneer Lumber).

2.3 BYPASS DOORS

A. Door Style
   1. Shape: Squared Top.
   2. Panel Pattern: Six Panel
   3. Thickness 1-3/8 inch
B. Jambs
   1. None: Prepare finished sheetrock opening.
C. Hardware Finish: Satin Nickel

2.4 PASSAGE

A. Door Style
   1. Shape: Squared Top
   2. Panel Pattern: Six Panel
   3. Thickness: 1-3/8 inch
   4. Face Bore: 2-1/8 inch
   5. Backset: 2-3/8 inch
   6. Edge Bore: 1-inch

2.5 PREHUNG SYSTEMS

A. Profile: System 01, Single Door and System 02, Double Door.

B. Jambs
    1. Profile: Solid flat.
    2. Width: Varies.
    3. Stop Profile: Colonial
C. Casing: #13 Colonial
D. Double Door systems. Include roller catches in Head Jamb. Do not bore doors for locksets. Install “dummy” style hardware.
E. Hinges: Solid brass concealed-bearing.
    1. Finish: Satin Nickel
        a. Size: 4 by 4-inch with 1/4-inch radius corners.

2.6 DOOR FINISHES

A. Manufacture’s standard pre-finishing system.
B. 3rd party professional finisher. Finishing on-site will not be allowed.
C. Wood Species and Finish
    1. Oak wood, with stain color specified in RFP Selection Sheet.

PART 3 EXECUTION

3.1 GENERAL

A. Install doors in accordance with manufacturer’s installation guidelines and recommendations.

3.2 EXAMINATION

A. Inspect door prior to installation.
B. Inspect rough opening for compliance with door manufacturer recommendations. Verify rough opening conditions are within recommended tolerances.

3.3 PREPARATION

A. Prepare door for installation in accordance with manufacturer’s recommendations.

3.4 INSTALLATION

A. Place door unit into opening and level hinge side of jamb. Use shims fastened through jamb and stop to level and temporarily secure in place.
B. Level latch side of jamb. Use shims fastened through jamb and stop to level and temporarily secure in place.
C. Verify spacing between jamb and door is uniform on all sides. Adjust as necessary.
D. Shim top of jamb in center of opening and fasten with nail.
E. Remove side jamb middle hinge screw from top and middle hinge. Replace with 2 ½” construction screw secured into wall framing behind the side jamb.
F. Re-check for square, level and even spacing around door. Nail securely in place through stop, jamb, shims and into studs every 12 inches.
G. Set nails.
H. Install trim on both sides using nails every 12 to 16 inches.
I. Fill nail holes with color matched wood putty.
J. Clean all surfaces.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Flush wood doors; flush configuration; non-rated. (For use with Interior Steel Frames if Selected in RFP.

1.02 RELATED REQUIREMENTS

A. Section 08 7100 - Door Hardware.

1.02 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Package, deliver and store doors in accordance with specified quality standard.

B. Accept doors on site in manufacturer's packaging. Inspect for damage.

C. Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.

1.04 WARRANTY

A. Interior Doors: Provide manufacturer's warranty for the life of the installation.

B. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.
   1. Failures include, but are not limited to, the following:
      a. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section.
      b. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Wood Veneer Faced Doors:
   1. Graham Wood Doors: www.grahamdoors.com .
   2. Algoma Hardwoods, Inc.: www.algomahardwoods.com .
   3. Eggers Industries: www.eggersindustries.com .
   4. Poncraft Door Company: www.poncraft.com .
   5. VT Industries Inc.: www.vtindustries.com .

2.02 DOORS

A. All Doors: See drawings for locations and additional requirements.
   1. Quality Level: Custom Grade, Heavy Duty performance, in accordance with WDMA I.S.1-A.
   2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.

B. Interior Doors: 1-3/8 inches thick unless otherwise indicated; flush construction.
   1. Provide solid core doors at all locations.
   2. Wood veneer facing with factory transparent finish.

2.03 DOOR AND PANEL CORES

A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and

faces as indicated above.

2.04 DOOR FACINGS

A. Wood Veneer Facing for Transparent Finish: Red oak, veneer grade as specified by quality standard, plain sliced, book veneer match, balance assembly match.
   1. Vertical Edges: Same species as face veneer.

2.05 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.

B. Cores Constructed with stiles and rails:

C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.

D. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
   1. Exception: Doors to be field finished.

E. Provide edge clearances in accordance with AWI Quality Standards Illustrated Section 1700.

2.06 FACTORY FINISHING - WOOD VENEER DOORS

A. Factory finish doors in accordance with specified quality standard:
   1. Transparent Finish: Transparent catalyzed polyurethane, Premium quality, Satin sheen. Stain per finish schedule.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standard.

B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.

C. Use machine tools to cut or drill for hardware.

D. Coordinate installation of doors with installation of frames and hardware.

3.03 TOLERANCES

A. Conform to specified quality standard for fit and clearance tolerances.

B. Conform to specified quality standard for maximum diagonal distortion.

3.04 ADJUSTING

A. Adjust doors for smooth and balanced door movement.

B. Adjust closers for full closure.

END OF SECTION

SECTION 08 5000 – SECTIONAL OVERHEAD DOORS

General Building Construction

1.1 SECTION REQUIREMENTS

A. Submittals: Product data and elevation of each door style.

G. Structural Performance: Design and reinforce sectional overhead doors to withstand a 20-lbf/sq. ft. (950-Pa) wind-loading pressure.

1.2 SECTIONAL OVERHEAD DOORS

MANUFACTURERS

A. Sectional Overhead Doors:
   1. C.H.I Raised Panel 2241 Insulated. www.chiohd.com
   2. Midland Model RSP-24 Insulated : www.midlandgaragedoor.com.
   3. Mid America Celebrity 24 ga.

   a. Sectional Panels: 24 ga. Aluminum with foam block insulated raised panel face sheets 0.028 inch (0.7 mm) thick. 2" section. No vision lites.
      i. Finish for all doors: Prefinished inside and out. Color from full range available to be selected by CMD Project Management staff.

   b. Weatherseal: Provide continuous rubber or neoprene compressible weather-strip on bottoms of each overhead door.

   c. Tracks, Supports, and Hardware:
      i. Manufacturer's standard galvanized 2" steel track system, sized for door size and weight and designed for clearances shown. Provide complete track assembly including brackets, bracing, and reinforcing for rigid support of ball bearing roller guides for required door type and size.
      ii. Provide 14 gauge steel hinges at each end of stile and at each intermediate stile per manufacturer's recommendations for size of door.
      iii. Provide heavy-duty steel rollers suitable for size of track.

2.1 SECTIONAL OVERHEAD DOOR OPENER

   a. Submittals: Product Data, installation instructions.

   b. Door Openers (when indicated on RFP Selection Sheet)

2.2 DOOR OPERATORS AND ACCESSORIES

   a. Double door: Liftmaster Model 3275 ¾ HP. Light on powerhead. Electric beam or other external entrapment protection device. Two remote controls, push button at wall inside garage and exterior keypad. Chain drive operation

   b. Adjustable safety clutch: Permit easy adjustments of operating force from 4 to 175 lbs.

END OF SECTION

SECTION 08 5313 – VINYL WINDOWS

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Factory fabricated tubular extruded plastic windows with fixed and operating sash.

B. Factory glazed.

C. Operating hardware.

D. Insect screens.

1.02 RELATED REQUIREMENTS

A. Section 07 9005 - Joint Sealers: Perimeter sealant and back-up materials.

1.03 REFERENCE STANDARDS

A. AAMA/WDMA/CSA 101/I.S.2/A440 - Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors; American Architectural Manufacturers Association; 2005.

1.04 PERFORMANCE REQUIREMENTS

A. Performance Requirements: As specified in PART 2, with the following additional requirements:

B. Assembly: To accommodate, without damage to components or deterioration of seals, movement between window and perimeter framing, deflection of lintel.

C. Vapor Seal: No vapor seal failure at interior static pressure of 1 inch, 72 degrees F, and 40 percent relative humidity.

D. System Internal Drainage: Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system, to the exterior by a weep drainage network.

E. Air and Vapor Seal: Maintain continuous air barrier and vapor retarder throughout assembly, primarily in line with inside pane of glass and heel bead of glazing compound.

F. Thermal Movement: Design sections to permit movement caused by thermal expansion and contraction of plastic to suit glass, infill, and perimeter opening construction.

G. Energy Star: Units must meet all Energy Star requirements.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect finished surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond when exposed to sunlight or weather.

B. Jig, brace, and box the window frame assemblies for transport to minimize flexing of members or joints.

1.07 FIELD CONDITIONS

A. Do not install sealants when ambient temperature is less than 40 degrees F.

B. Maintain this minimum temperature during and after installation of sealants.

1.08 WARRANTY

A. Correct defective Work within a 10 year period after Date of Substantial Completion.

B. Provide 20 year manufacturer warranty for insulated glass units from seal failure, interpane dusting or misting, and replacement of same. Include coverage for degradation of color finish.

PART 2 PRODUCTS

2.00 MANUFACTURERS

A. Tubular Plastic Windows:
   1. Basis-of-Design: Thermo-Tech Vinyl Windows and Doors: www.ttwindows.com .
      a. Windows: Thermo-Tech Classic Vinyl Windows.

2.01 STYLE

A. Unless otherwise stated on rfp or plans, all new Band Housing units shall have sliders with single casements on small windows.

B. On all remodels, style of new window opening shall not be less than that of the existing window style's opening.

2.02 COMPONENTS

A. Windows: Extruded, hollow, tubular, ultra-violet resistant polyvinyl chloride (PVC) with integral color; factory fabricated; with vision glass, related flashings, anchorage and attachment devices.
   1. Performance Requirements: AAMA/WDMA/CSA 101/I.S.2/A440 R45.
   2. Configuration: Fixed, non-operable, outward opening, side hinged, and horizontal sliding sash.
   3. Color: Color as selected on RFP Selection Sheet.

B. Insect Screens: Woven fiberglass mesh; 18/16 mesh size.
   1. Color: Black.

C. Operable Sash Weather Stripping: Resilient PVC; permanently resilient, profiled to effect weather seal.

D. Vinyl Brickmould: Installed around perimeter of all windows. Color to be white unless indicated otherwise.

2.03 GLASS AND GLAZING MATERIALS

A. Select quality complying with ASTM C 1036. Insulating glass SIGMA/IGCC certified to performance level CBA when tested in accordance with ASTM E 774.

B. Glazing method: 3/4 inch Insulated glass.

C. Glass type: Low E II - Argon gas.

D. Glazing seal: Silicone bedding at exterior and interior.

2.04 HARDWARE

A. Horizontal Sliding Sash: Nylon rollers in steel bracket, screw adjustable, limit stops in head and sill track.

B. Sash lock: Lever handle with cam lock.

C. Projecting Sash Arms: Cadmium plated steel, friction pivot joints with nylon bearings, removable pivot clips for cleaning.

D. Sash lock: Lever handle with cam lock.

F. Factory installed Fall Protection Device: Where needed by building code.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify wall openings and adjoining air and vapor seal materials are ready to receive work of this Section.

3.02 INSTALLATION

A. Install window units in accordance with manufacturers' instructions.

B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.

C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.

D. Provide thermal isolation where components penetrate or disrupt building insulation. Pack fibrous insulation or low expanding spray foam in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.

E. Coordinate attachment and seal of perimeter air and vapor barrier materials.

F. Install operating hardware.

G. Install perimeter sealant and backing materials in accordance with Section 07 9005.

H. Install perimeter vinyl brickmould trim around window perimeter.

**I. Residential Renovation replacement windows will require factory applied nail-fin. Contractor to remove and re-install as needed for proper installation, including brickmold wrapping.

3.03 TOLERANCES

A. Maximum Variation from Level or Plumb: 0.06 inches every 3 ft non-cumulative or 0.5 inches per 100 ft, whichever is less.

3.04 ADJUSTING

A. Adjust hardware for smooth operation and secure weathertight closure.

3.05 CLEANING

A. Remove protective material from pre-finished surfaces.

B. Wash surfaces by method recommended and acceptable to sealant and window manufacturer; rinse and wipe surfaces clean.

C. Remove excess sealant by moderate use of mineral spirits or other solvent acceptable to sealant manufacturer.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES:

A. Finish hardware for doors.

B. Include screws, special screws, bolts, special bolts, expansion shields, and other accessory devices for complete operational application of hardware.

C. Where items of hardware are not definitely or correctly specified and are required for the intended service, such omission, error, or other discrepancy should be directed to the Project Coordinator prior to the bid date for clarification by addendum. Otherwise furnish such items in the type and quantity established by this specification for the appropriate service intended.

1.02 RELATED SECTIONS:

A. Section 08 1113: Hollow Metal Doors and Frames.

B. Section 08 1416: Flush Wood Doors.

C. Section 08 1412: Pre-Hung Interior Stile and Rail Wood Doors.

1.03 GENERAL REQUIREMENTS

A. Provide items, articles, materials, operations and methods listed, mentioned or scheduled herein or on drawings, in quantities as required to complete project. Provide hardware that functions properly. Prior to furnishing hardware, advise Architect of items that will not operate properly, are improper for conditions, or will not remain permanently anchored.

1.04 QUALITY ASSURANCE

A. Manufacturer: Obtain each type of hardware (i.e. latch and locksets, hinges, closers) from single manufacturer, although several may be indicated as offering products complying with requirements.

B. Supplier: Recognized architectural finish hardware supplier, with warehousing facilities, who has been providing hardware for period of not less than 3 years. The supplier shall be, or employ, a certified Architectural Hardware Consultant (AHC), who is registered in the continuing education program as administered by the Door and Hardware Institute. The hardware schedule shall be prepared and signed by a certified AHC.

C. Installer: Firm with 3 years experience in installation of similar hardware to that required for this project, including specific requirements indicated.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver hardware to jobsite in manufacturer's original packaging, marked to correspond with approved hardware schedule. Do not deliver hardware until suitable locked storage space is available. Check hardware against reviewed hardware schedule. Store hardware to protect against loss, theft or damage.

B. Deliver hardware required to be installed during fabrication of hollow metal and wood doors prepaid to manufacturer.

1.06 WARRANTY

A. Guarantee workmanship and material provided against defective manufacture. Repair or replace defective workmanship and material appearing within period of one year after Substantial Completion.

B. Provide lifetime factory warranty on door closer body against defects in material and

workmanship from date of occupancy of Project.

C. Replace shortages and incorrect items with correct material at no additional cost to Owner.

PART 2 PRODUCTS

2.01 BUTTS AND HINGES

A. Acceptable Manufacturers and Types:

	McKinney	Hager	Bommer	Stanley
Type 2 (std.wt.)	TB2714	BB1279	BB5000	FBB179
Type 4 (hvy.wt.)	T4B3786	BB1168	BB5004	FBB168

B. Application:
1. Exterior in-swinging doors and vestibule doors: Type 4
2. Interior doors over 36 inches wide: Type 4
3. Interior doors 36 inches or less without closer: Type 2
4. Provide NRP (non-removable pins) at out-swinging lockable doors.

C. Size:
1. 1-3/8 inch Doors 4-1/2 inch by 4-1/2 inch

D. Quantity:
1. 2 - hinges per leaf for openings through 60 inches high.
2. 1 - additional hinge per leaf for each additional 30 inches in height or fraction thereof.

E. Drill 5/32 inch hole and use No. 12, 1-1/4 inch steel threaded to the head wood screws for hinges on wood doors.

2.02 LOCKSETS – CYLINDRICAL

A. Acceptable manufacturers and series:
1. All Doors (Elder or Handicap): Schlage Elan F-Series lever in Satin Chrome (626)
2. All Doors (Rental); Schlage Plymouth Series F51 PLY in Satin Chrome (626)
2. Deadbolts (at exterior doors): JD60 in Satin Chrome (630)

B. Provide lock functions specified in Hardware Groups, with following provisions:
1. Cylinders: Provide full size 5-pin interchangeable cores.
2. Locksets shall meet the requirements of ANSI/BHMA A156.12, Operational Grade 2.
3. Backsets: 2-3/4 inches.
4. Strikes: Provide wrought boxes and strikes with proper lip length to protect trim but not to project more than 1/8 inch beyond trim, frame or inactive leaf. Where required, provide open back strike and protected to allow practical and secure operation.

2.04 KEYING

A. All entry locksets and deadbolts to be keyed alike.

B. Contractor shall turn in all keys to Owner on a labeled key ring at the time of Acceptance.

C. Contractor shall install locks and secure the home as early in the construction process as practical. Provide combination lock box for the duration of construction activity.

2.05 WALL STOPS AND HOLDERS

A. Acceptable manufacturers and types (satin chrome):

1. Hager 236W (wall stop - preferred) or 243F (floor stop – second option)

2. Ives WS406CVX, WS406CCV, WS407CVX, WS407CCV (wall stop - preferred) or FS444, FS 448 (floor stop – second option)

B. Ensure wood backing is installed for wall stops prior to gypsum board installation.

2.06 ENTRY DOOR VIEWER

A. Acceptable manufacturers:

1. Schlage Door Viewer 698-619 (satin nickel)

2. National Hardware V805 (satin nickel)

2.07 AUTOMATIC DOOR CLOSER

A. Acceptable manufacturers:

1. Schlage Residential Door Closer – Ivory Model: 100195439

To be installed on all exterior mechanical room doors.

2.08 ENTRY DOOR KICK PLATE

A. Acceptable manufacturers:

1. Schlage 8” x 34” satin stainless steel kick plate: model 589337
To be installed on all exterior entry doors.

2.09 FASTENERS

A. Including, but not limited to, wood or machine screws, bolts, bolts, nuts, anchors, etc. of proper type, material, and finish required for installation of hardware.

B. Use phillips head for exposed screws. Do not use aluminum screws to attach hardware.

C. Provide self-tapping (TEC) screws for attachment of sweeps and stop-applied weather-stripping.

2.10 TYPICAL FINISHES AND MATERIALS

A. Finishes, unless otherwise specified:
   1. Butts: Interior Doors and In-swinging Exterior Doors
      a. Satin Chrome
   2. Locks and Latches:
      a. (626) on Satin Chrome
   3. Miscellaneous Hardware:
      a. Satin Chrome

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine doors, frames, and related items for conditions that would prevent the proper application of finish hardware. Do not proceed until defects are corrected.

3.02 INSTALLATION

A. Install finish hardware in accordance with reviewed hardware schedule and manufacturer's printed instructions. Pre-fit hardware before finish is applied, remove and reinstall after finish is completed. Install hardware so that parts operate smoothly, close tightly and do not rattle.

B. Set units level, plumb and true to line and location. Adjust and reinforce attachment to substrate as necessary for proper installation and operation.

C. Drill and countersink units which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

3.03 FIELD QUALITY CONTROL

A. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

3.04 ADJUSTING AND CLEANING

A. At final completion, hardware shall be left clean and free from disfigurement. Make final adjustment to door closers and other items of hardware. Where hardware is found defective repair or replace or otherwise correct as directed.

D. Clean adjacent surfaces soiled by hardware installation.

3.05 PROTECTION

A. Provide for proper protection of items of hardware until Owner accepts Project as complete.

3.06 HARDWARE GROUPS

GROUP 1 - Hardware by others
All Hardware by Door Supplier.

GROUP 2 - Passage, no closer
Hinges
1 each Latchset Passage function F75
Function: Both levers always unlocked (Hall/Closet)
1 each Wall Stop

GROUP 3 - Privacy, no closer
Hinges
1 each Latchset Bath/Bedroom Privacy function F76
Function: Push-button locking. Can be opened from outside with small screwdriver. Turning inside lever releases button.
1 each Wall Stop

GROUP 4 - Entry
3 each Hinge
2 each Door Viewer (44” and 60” above finished floor)
1 each Wall Stop
1 each Kickplate
1 each Door Sweep (ADA Sills) Thermwell A79WHA reinforced rubber
1 each Automatic door closer (at exterior mechanical room only)
1 each Latchset Entrance, Single Locking function F95
Function: Deadbolt operated by key from outside or by turn unit from inside. Bolt automatically deadlocks when fully thrown. Latchbolt retracted by lever from either side.

GROUP 5 - Built-in Storm Shelter Door
3 Hinges
1 each Latchset Passage function F75
Function: Both levers always unlocked (Hall/Closet)
2 each Deadbolt: operated by thumb-turn control on both sides (non-keyed).

END OF SECTION

SECTION 09 2116 – GYPSUM BOARD ASSEMBLIES

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Gypsum wallboard.

B. Joint treatment and accessories.

C. Textured finish system.

1.02 RELATED REQUIREMENTS

A. Section 06 1000 - Rough Carpentry: Building framing.

B. Section 07 8400 - Firestopping: Top-of-wall assemblies at fire rated walls.

C. Section 07 9005 - Joint Sealers: Acoustic sealant.

1.03 REFERENCE STANDARDS

A. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2007.

B. ASTM C 475/C 475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2002 (Reapproved 2007).

C. ASTM C 840 - Standard Specification for Application and Finishing of Gypsum Board; 2007.

1.04 QUALITY ASSURANCE

A. Perform in accordance with ASTM C 840. Comply with requirements of GA-600 for fire-rated assemblies.

1.05 REGULATORY REQUIREMENTS

A. Conform to applicable code for fire rated assemblies as indicated on drawings.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C 840 and GA-216.
   1. See PART 3 for finishing requirements.

2.02 BOARD MATERIALS

A. Manufacturers - Gypsum-Based Board:
   1. CertainTeed Corporation: www.certainteed.com .
   2. Georgia-Pacific Gypsum LLC: www.gp.com/gypsum .
   3. National Gypsum Company: www.nationalgypsum.com .
   4. USG Corporation: www.usg.com .

B. Wallboard: Paper-faced gypsum wallboard as defined in ASTM C 1396/C 1396M; sizes to minimize joints in place; ends square cut.
   1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
   2. Board Type: Type X.
   3. Thickness:
      a. Vertical Surfaces: 1/2 inch.
      b. Ceilings: 5/8 inch (requires 1 5/8” drywall screws) or 1/2 inch no-sag.
      c. Multi-Layer Assemblies: Thicknesses as indicated on drawings.
   4. Paper-Faced Products:
      a. CertainTeed Corporation; ProRoc Brand Gypsum Board.

b. Georgia-Pacific Gypsum LLC; ToughRock Gypsum Wallboard.
c. National Gypsum Company; Gold Bond Brand Gypsum Wallboard.
d. USG Corporation; Sheetrock Brand Gypsum Panels.

2.03 TEXTURE FINISHES

A. Primer: As recommended by textured finish manufacturer.

B. Unaggregated Wall and Ceiling Finish: Water-based, job-mixed, unaggregate finish.
   1. Products: Subject to compliance with requirements, provide one of the following:
      a. G-P Gypsum; Georgia-Pacific Toughrock Wall and Ceiling Texture.
      b. National Gypsum Company; ProForm Perfect Spray EM Texture.
      c. USG Corporation; SHEETROCK Brand Wall and Ceiling Spray Texture, Unaggregated.
   2. Texture: Orange peel at walls and ceilings unless otherwise directed by CMD Project Management Staff.

2.04 ACCESSORIES

A. Finishing Accessories: ASTM C 1047, galvanized steel or rolled zinc, unless otherwise indicated.
   1. Types: As detailed or required for finished appearance.

B. Joint Materials: ASTM C 475 and as recommended by gypsum board manufacturer for project conditions.
   1. Tape: 2 inch wide, coated glass fiber tape for joints and corners, except as otherwise indicated.
   2. Tape: 2 inch wide, creased paper tape for joints and corners.
   3. Ready-mixed vinyl-based joint compound.
      a. Pre-filling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
      b. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
      c. Fill Coat: For second coat, use setting-type, sandable topping compound.
      d. Finish Coat: For third coat, use setting-type, sandable topping compound.

C. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

D. Install flexible expansion joint material at all vault lines and other areas prone to movement as necessary.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 BOARD INSTALLATION

A. Comply with ASTM C 840 and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
   1. Exception: Tapered edges to receive joint treatment at right angles to framing.

C. Fire-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.

D. Installation on Wood Framing: For rated assemblies, comply with requirements of listing authority. For non-rated assemblies, install as follows:
   1. Single-Layer Applications: Screw attachment.

3.03 INSTALLATION OF TRIM AND ACCESSORIES

A. Corner Beads: Install at external corners, using longest practical lengths.

B. Edge Trim: Install at locations where gypsum board abuts dissimilar materials and as indicated.

3.04 JOINT TREATMENT

A. Finish gypsum board in accordance with levels defined in ASTM C 840, as follows:
   1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
   2. Level 1: Fire rated wall areas above finished ceilings, whether or not accessible in the completed construction and garage interior.

B. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
   1. Feather coats of joint compound so that camber is maximum 1/32 inch.
   2. Taping, filling and sanding is not required at base layer of double layer applications.
   3. Where factory beveled edge is located at floor line, fill as necessary to produce flat surface.

3.05 TEXTURE FINISH

A. Apply Orange Peel finish texture coating to walls and ceilings by means of spraying apparatus in accordance with manufacturer's instructions and to match approved sample.

3.06 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

3.07 PROTECTION

A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

B. Remove and replace panels that are wet, moisture damaged, and mold damaged.
   1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
   2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION

SECTION 09 3000 – CERAMIC TILE

General Building Construction

PART 1 GENERAL (SEE RFP ROOM FINISH SCHEDULE FOR APPLICABILITY)

1.01 SECTION INCLUDES

A. Tile and Accessories:
1. Glazed Porcelain.
2. Floor and Wall Glazed.
3. Trim and Accessories.
4. Setting Materials.

1.02 RELATED SECTIONS

A. Section 03505 - Self-Leveling Underlayment.

B. Section 07920 - Joint Sealant.

1.03 REFERENCES

A. American National Standards Insitute (ANSI):
1. ANSI A108.1C, 1999 - Specifications for Contractors Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar -or- Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex Portland Cement Mortar.
2. ANSI A108.10, 1999 - Specifications for Installation of Grout in Tilework.
3. ANSI A118.6, 1999 - Standard Ceramic Tile Grouts.
4. ANSI A118.7, 1999 - Polymer Modified Cement Grouts
5. ANSI A118.9, 1999 - Test Methods and Specifications for Cementitious Backer Units
6. ANSI A137.1, 1988 - Specifications for Ceramic Tile.

B. Tile Council of North America (TCNA): TCA Handbook for Ceramic Tile Installation, 2007.

1.04 PERFORMANCE REQUIREMENTS

A. Static Coefficient of Friction: Tile on walkway surfaces shall be provided with the following values as determined by testing in conformance with ASTM C 1028.
1. Level Surfaces: Minimum of 0.6 (Wet).

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing the work of this section with minimum two years experience.

B. Single Source Responsibility: Obtain each type and color of tile from a single source. Obtain each type and color of mortar, adhesive and grout from the same source.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer's unopened packaging until ready for installation.

B. Protect adhesives and liquid additives from freezing or overheating in accordance with manufacturer's instructions.

C. Store tile and setting materials on elevated platforms, under cover and in a dry location and protect from contamination, dampness, freezing or overheating.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Do not install adhesives in an unventilated environment.

B. Maintain ambient and substrate temperature of 50 degrees F (10 degrees C) during tiling and for a minimum of 7 days after completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturer: DalTile Corporation: website: www.daltileproducts.com

B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.02 TILE

A. Glazed Porcelain Tile:
1. Product: Fidenza.
2. Size and Shape: 12 inches square, nominal. (Bathroom Floor Tile)
3. Size and Shape: 6 inches square, nominal. (Shower Wall Tile)
4. Size and Shape: 2 inches square, nominal. (Shower Floor Tile)
5. Colors: To be selected from manufacturer's standard range.
6. Colors: As scheduled in RFP Room Finish Schedule Selection Sheet.
7. Trim Units: Matching bullnose, bullnose corner, in sizes coordinated with field tile.shapes.

2.03 TRIM AND ACCESSORIES

A. Non-Ceramic Trim: Satin natural anodized extruded aluminum, stainless steel, brass, etc, style and dimensions to suit application, for setting using tile mortar or adhesive; use in the following locations:
1. Open edges of floor tile.
2. Transition between floor finishes of different heights.
3. Thresholds at door openings.
4. Expansion and control joints, floor and wall.

2.04 SETTING MATERIALS

A. Organic Adhesive: ANSI A136.1, thinset bond type; use Type I in areas subject to prolonged moisture exposure.

B. Epoxy Adhesive: ANSI A118.3, thinset bond type.

C. Mortar Bed Materials:
1. Portland cement: ASTM C150, type 1, gray or white.
2. Hydrated Lime: ASTM C207, Type S.
3. Sand: ASTM C144, fine.
4. Latex additive: As approved.
5. Water: Clean and potable.

D. Mortar Bond Coat Materials:
1. Dry-Set Portland Cement type: ANSI A118.1.
2. Latex-Portland Cement type: ANSI A118.4.
3. Epoxy: ANSI A118.3, 100 percent solids.

E. Standard Grout: Cement grout, sanded or unsanded, as specified in ANSI A118.6; color as selected.

F. Polymer modified cement grout, sanded or unsanded, as specified in ANSI A118.7; color as selected.

G. Silicone Sealant: Silicone sealant, moisture and mildew resistant type, use for shower

floors and shower walls. Color to match grout, or CLEAR.

H. Waterproofing Membrane at Floors: Membrane in accordance with ANSI A118.10 and as follows:

1. Chlorinated Polyethylene Sheet with polyester fabric reinforcing.
2. Fabric Reinforced, Fluid-Applied elastomeric membrane.
3. Un-Reinforced, Fluid-Applied elastomeric membrane.
4. Polyethylene Sheet Product.
5. Fabric-Reinforced, Modified-Bituminous Sheet Product.
6. Urethane Waterproofing and Tile-Setting Adhesive Product.

I. Membrane at Walls: 4 mil (0.1 mm) thick polyethylene film, ASTM D4397.

J. Cementitious Backer Board: ANSI A118.9; High density, cementitious, glass fiber reinforced with 2 inch (50 mm) wide coated glass fiber tape for joints and corners:

1. Thickness: 1/2 inch (13 mm).
2. Install at shower surround areas.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that wall surfaces are free of substances which would impair bonding of setting materials, smooth and flat within tolerances specified in ANSI A137.1, and are ready to receive tile.

B. Verify that sub-floor surfaces are dust-free, and free of substances which would impair bonding of setting materials to sub-floor surfaces, and are smooth and flat within tolerances specified in ANSI A137.1.

C. Verify that concrete sub-floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by tile manufacturer and setting materials manufacturer.

D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Protect surrounding work from damage.

B. Remove any curing compounds or other contaminates.

C. Vacuum clean surfaces and damp clean.

D. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

E. Install cementitious backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of dry-set mortar to a feather edge.

F. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.03 INSTALLATION - GENERAL

A. Install tile and grout in accordance with applicable requirements of ANSI A108.1 through A108.13, manufacturer's instructions, and TCA Handbook recommendations.

B. Lay tile to pattern indicated. Arrange pattern so that a full tile or joint is centered on each wall and that no tile less than 1/2 width is used. Do not interrupt tile pattern through openings.

C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.

D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.

E. Form internal angles square and external angles bullnosed.

F. Install ceramic accessories rigidly in prepared openings.

G. Install non-ceramic trim in accordance with manufacturer's instructions.

H. Sound tile after setting. Replace hollow sounding units.

I. Keep expansion joints free of adhesive or grout. Apply sealant to joints.

J. Allow tile to set for a minimum of 48 hours prior to grouting.

K. Grout tile joints. Use standard grout unless otherwise indicated.

L. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

A. Over interior concrete substrates, install in accordance with TCA Handbook Method F113, dry-set or latex-portland cement bond coat, with standard grout, unless otherwise indicated.

1. Where waterproofing membrane is indicated, install in accordance with TCA Handbook Method F122, with latex-portland cement grout.
2. Where epoxy bond coat and grout are indicated, install in accordance with TCA Handbook Method F131.

3.05 INSTALLATION - FLOORS - MORTAR BED METHODS

A. Over interior concrete substrates, install in accordance with TCA Handbook Method F111, with cleavage membrane, unless otherwise indicated.

1. Where waterproofing membrane is indicated, with standard grout or no mention of grout type, install in accordance with TCA Handbook Method F121.

B. Waterproofing Membrane: Install as specified in ANSI A108.13.

C. Mortar Bed Thickness: 1-1/4 to 2 inch (32 to 51 mm) maximum, unless otherwise indicated.

3.05 INSTALLATION - SHOWERS AND BATHTUB WALLS

A. At tiled shower receptors install in accordance with TCA Handbook Method B415, mortar bed floor, and W244, thin-set over cementitious backer unit walls.

B. At bathtub walls install in accordance with TCA Handbook Method B412, over cementitious backer units with waterproofing membrane.

C. Grout with standard grout as specified above.

D. Seal joints between tile work and other work with sealant specified in Section 07900.

E. Seal tile corner joints walls and floors with clear silicone after grout has cured.

3.06 CLEANING

A. Clean tile and grout surfaces.

3.07 PROTECTION OF FINISHED WORK

A. Do not permit traffic over finished floor surface for 72 hours after installation.

B. Cover floors with kraft paper and protect from dirt and residue from other trades.

C. Where floor will be exposed for prolonged periods cover with plywood or other similar type walkways.

3.08 SCHEDULE

A. Bathroom Floor Tile, Shower Floor Tile, Shower Wall Tile:
   1. Tile Type: Fidenza
   2. Grout Type: Sanded, Color to match tile.
   3. Sizes: a.12” x 12” Bathroom Floor Tile
      b. 2”x2” Shower Floor Tile
      c. 6”x6” Shower Wall Tile: Provide 16”w x 16”h x 4”d recessed tiled receptor for shampoo / soap storage.

END OF SECTION

SECTION 09 6500 – RESILIENT FLOORING

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient sheet flooring and vinyl plank flooring

B. Resilient base.

C. Installation accessories.

1.02 REFERENCE STANDARDS

A. ASTM F 710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2008.

B. ASTM F 1303 - Standard Specification for Sheet Vinyl Floor Covering with Backing; 2004.

C. ASTM F 1861 - Standard Specification for Resilient Wall Base; 2008.

D. ASTM F 1913 - Standard Specification for Vinyl Sheet Floor Covering Without Backing; 2004.

E. BAAQMD 8-51 - Bay Area Air Quality Management District Regulation 8, Rule 51, Adhesive and Sealant Products; www.baaqmd.gov ; 2002.

F. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition; www.aqmd.gov .

1.03 DELIVERY, STORAGE, AND HANDLING

A. Protect roll materials from damage by storing on end.

1.04 FIELD CONDITIONS

A. Maintain temperature in storage area between 55 degrees F and 90 degrees F.

PART 2 PRODUCTS

2.01 SHEET FLOORING

A. Vinyl Sheet Flooring Type SV: Homogeneous without backing, with color and pattern throughout full thickness, and:
   1. Minimum Requirements: Comply with ASTM F 1303, Type II, without backing, or ASTM F 1913.
   2. Sheet Width: 144 inch minimum.
   3. Pattern: To be selected by CMD Project Management staff from standard colors/styles.
   4. Manufacturer:
      a. Congoleum; Product AirStep Plus www.congoleum.com .

2.02 VINYL PLANK FLOORING

A. Vinyl Plank Flooring – direct glue (when specified in RFP)
   1. Manufacturer:
      a. Shaw Infinite 12 LVP.
      b. Color to be selected by CMD Project Management staff

2.03 BASE

A. Resilient Base: ASTM F 1861, Type TV, vinyl, thermoplastic; top set Style B, Cove, and as follows to be installed typically (unless otherwise noted) at Mechanical Room, Laundry Room, and Bath Rooms (see Room Finish Schedule for further information):
   1. Height: 4 inch.

2. Thickness: 0.125 inch thick.
3. Finish: Satin.
4. Corners: Job formed.
5. Length: Roll.
6. Color: Color as selected by CMD Project Management staff from manufacturer's standards.
7. Manufacturers:
   a. Burke Flooring: www.burkemercer.com .
   b. Johnsonite, Inc: www.johnsonite.com .
   c. Roppe Corp: www.roppe.com

B. PVC Baseboards: When specified in the rfp or on selection sheet, supply and install white pvc colonial style.
1. Height: 3.25 inch
2. Thickness: 0.5 inch

2.04 ACCESSORIES

A. Subfloor Filler: Premix latex type recommended by adhesive material manufacturer.

B. Primers, Adhesives, and Seaming Materials: Waterproof; types recommended by flooring manufacturer.
1. Provide only products having lower volatile organic compound (VOC) content than required by the more stringent of the South Coast Air Quality Management District Rule No.1168 and the Bay Area Air Quality Management District Regulation 8, Rule 51.

C. Sealer and Wax: Types recommended by flooring manufacturer.

D. Vinyl Tread and Riser Covers: Johnsonite, Inc., www.johnsonite.com
1. Style: Service Weight Round Nose (ST)

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.

B. Verify that concrete sub-floor and self leveling underlayment surfaces are dry enough and ready for resilient flooring installation by testing for moisture emission rate and alkalinity in accordance with ASTM F 710; obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.

3.02 PREPARATION

A. Prepare sub-floor surfaces as recommended by flooring and adhesive manufacturers.

B. Remove sub-floor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with sub-floor filler to achieve smooth, flat, hard surface.

C. Prohibit traffic until filler is cured.

3.03 INSTALLATION

A. Starting installation constitutes acceptance of sub-floor conditions.

B. Install in accordance with manufacturer's instructions.

C. Spread only enough adhesive to permit installation of materials before initial set.

D. Fit joints tightly.

E. Set flooring in place; press with heavy roller to attain full adhesion.

F. Where type of floor finish, pattern, or color is different on opposite sides of door, terminate flooring under centerline of door.

G. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.

H. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

I. At movable partitions, install flooring under partitions without interrupting floor pattern.

3.04 SHEET FLOORING

A. Lay flooring with joints and seams parallel to longer room dimensions, to produce minimum number of seams. Lay out seams to avoid widths less than 1/3 of roll width; match patterns carefully at seams.

B. Seams are prohibited in bathrooms, toilet rooms, and custodial closets.

C. Double cut sheet at seams.

D. Lay flooring with tightly butted seams, with seam sealer. Adhesive to be installed full-spread per manufacturer’s directions.

3.05 VINYL PLANK FLOORING

A. Lay flooring with joints and seams parallel to longer room dimensions (CMD Project Management staff to determine direction of flooring installation).

D. Lay flooring with tightly butted seams, closely following manufacturer’s instructions and guidelines for both pre-installation and during entire installation.

3.06 RESILIENT BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.

B. Install base on solid backing. Bond tightly to wall and floor surfaces.

3.07 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. Clean in accordance with manufacturer's instructions.

3.08 PROTECTION

A. Prohibit traffic on resilient flooring for 24 hours after installation.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Carpet, direct-glued.

B. Accessories.

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete: Restrictions on curing compounds for concrete slabs and floors to receive adhesive-applied carpet.

1.03 REFERENCE STANDARDS

A. ASTM D 2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials; 2006.

B. ASTM F 710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2008.

C. CRI (CIS) - Carpet Installation Standard; Carpet and Rug Institute; 2009.

D. CRI (GLA) - Green Label Testing Program - Approved Adhesive Products; Carpet and Rug Institute; Current Edition.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified carpet with minimum three years documented experience.

B. Installer Qualifications: Company specializing in installing carpet with minimum three years experience.

1.05 FIELD CONDITIONS

A. Store materials in area of installation for minimum period of 24 hours prior to installation.

B. Maintain minimum 70 degrees F ambient temperature 24 hours prior to, during and 24 hours after installation.

C. Ventilate installation area during installation and for 72 hours after installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. For private homes only, see rfp.

Unless otherwise stated in the rfp, no carpet shall be installed in Band Housing units.

2.02 CARPET

A. For private homes only, see rfp.

Unless otherwise stated in the rfp, no carpet shall be installed in Band Housing units.

2.03 ACCESSORIES

A. Sub-Floor Filler: Type recommended by carpet / adhesive manufacturer.

B. Adhesives - General: Compatible with materials being adhered; maximum VOC content of 50 g/L; CRI Green Label certified.
   1. Provide only products having lower volatile organic compound (VOC) content than required by the more stringent of the South Coast Air Quality Management District

Rule No.1168 and the Bay Area Air Quality Management District Regulation 8, Rule 51.

C. Seam Adhesive: Recommended by manufacturer.

D. Contact Adhesive: Compatible with carpet material; releasable type.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that sub-floor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive carpet.

B. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of adhesives to sub floor surfaces.

C. Verify that concrete sub-floor surfaces are dry enough and ready for adhesive installation by testing for moisture emission rate and alkalinity in accordance with ASTM F 710; obtain instructions if test results are not within limits recommended by carpet manufacturer and adhesive materials manufacturer.

D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.

B. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.

C. Clean substrate.

3.03 INSTALLATION - GENERAL

A. Starting installation constitutes acceptance of sub-floor conditions.

B. Install carpet in accordance with manufacturer's instructions and CRI Carpet Installation Standard.

C. Verify carpet match before cutting to ensure minimal variation between dye lots.

D. Lay out carpet and locate seams in accordance with shop drawings:
   1. Locate seams in area of least traffic, out of areas of pivoting traffic, and parallel to main traffic.
   2. Do not locate seams perpendicular through door openings.
   3. Align run of pile in same direction as anticipated traffic and in same direction on adjacent pieces.
   4. Locate change of color or pattern between rooms under door centerline.
   5. Provide monolithic color, pattern, and texture match within any one area.

E. Install carpet tight and flat on subfloor, well fastened at edges, with a uniform appearance.

3.04 DIRECT-GLUED CARPET

A. Double cut carpet seams, with accurate pattern match. Make cuts straight, true, and unfrayed. Apply seam adhesive to cut edges of woven carpet immediately.

B. Apply contact adhesive to floor uniformly at rate recommended by manufacturer. After sufficient open time, press carpet into adhesive.

C. Apply seam adhesive to the base of the edge glued down. Lay adjoining piece with seam straight, not overlapped or peaked, and free of gaps.

D. Roll with appropriate roller for complete contact of adhesive to carpet backing.

E. Trim carpet neatly at walls and around interruptions.

3.05 CLEANING

A. Remove excess adhesive from floor and wall surfaces without damage.

B. Clean and vacuum carpet surfaces.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints, stains, varnishes, and other coatings.

C. Surfaces to be finished are indicated in this section and on the Drawings.

1.02 REFERENCE STANDARDS

A. GreenSeal GS-11 - Architectural Paints; 1993.

B. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association; current edition, www.paintinfo.com.

C. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Master Painters and Decorators Association; 2004.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.04 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

D. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

1.05 EXTRA MATERIALS

A. Supply additional 5 percent, but not less than 1 gallon of each color and type; store where directed.

B. Label each container with color and type in addition to the manufacturer's label.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide all paint and coating products from the same manufacturer to the greatest extent possible.

B. In the event that a single manufacturer cannot provide all specified products, minor exceptions will be permitted provided approval by CMD Project Management staff is obtained using the specified procedures for substitutions.
   1. Substitution of MPI-approved products by a different manufacturer is preferred over substitution of unapproved products by the same manufacturer.

2. Substitution of a different system using MPI-approved products by the same manufacturer will not be considered.

C. Paints: Acceptable manufacturers are limited to the following:
1. Benjamin Moore & Co: www.benjaminmoore.com .
2. Sherwin-Williams Company (The): www.sherwin-williams.com

D. Transparent Finishes: Acceptable manufacturers are limited to the following:
1. Benjamin Moore & Co: www.benjaminmoore.com
2. Cabot Incorporated, Samuel.
3. Sherwin-Williams Company (The).
4. Minwax Co.: www.minwax.com

E. Stains: Acceptable manufacturers are limited to the following:
1. Same as Transparent Finishes.

F. Foundation Insulation Coating: Acceptable manufacturers are limited to the following:
1. Styro Industries: www.styro.net Flex Coat Brush-on Foundation Coating.

2.02 MATERIALS - GENERAL

A. Volatile Organic Compound (VOC) Content:
1. Provide coatings that comply with the requirements of the Green Seal Standard GS-11, and the following VOC limits:
a. VOC Content Limit:
1) Non-Flat Topcoat: 100 g/L.
2) Primer or Undercoat: 100 g/L.
3) Floor Paint: 100 g/L.
b. Point-of-Sale VOC Content Limit:
1) Non-Flat Topcoat with colorant added at the point-of-sale: 150g/L.
2) Primer and Undercoat with colorant added at the point-of-sale: 150g/L.
3) Floor Paint with colorant added at the point-of-sale: 150g/L.

B. Paints and Coatings: Provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI Categories, except as otherwise indicated.
1. Provide ready mixed paints and coatings.
2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

C. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified; commercial quality.

2.03 PAINT SYSTEMS

A. Provide Premium Grade systems (2 top coats) as defined in MPI Architectural Painting Specification Manual, except as otherwise indicated.

B. Where a specified paint system does not have a Premium Grade, provide Custom Grade system.

C. Sheen to be eggshell unless specified otherwise. Where sheen is not specified or more than one sheen is specified, sheen will be selected later by CMD Project Management staff from the manufacturer's full line.

D. Provide colors as directed by CMD Project Management staff.
1. Allow for minimum of three colors for each system, unless otherwise indicated, without additional cost to Owner.
2. Extend colors to surface edges; colors may change at any edge as directed by Project Manager.

2.04 EXTERIOR PAINT SYSTEMS

A. Dressed Lumber:

1. EXT 6.3D Semi-Transparent Stain: Wood Stain MPI #13.

B. Exterior Steel Entry Doors:
   1. EXT 5.1D Alkyd: Alkyd Metal Primer MPI #79, Alkyd MPI #94 with MPI VOC Range of below 25.

C. Exposed Foundation Insulation: (basement foundations only)
   1. Brush-on Foundation Coating: Flexcoat.

2.05 INTERIOR PAINT SYSTEMS

A. Woodwork (Not Floors or Stairs):
   1. Applications include but are not limited to trim:
   2. INT 6.4D Alkyd Varnish: Semi-Transparent Stain MPI #90, Sanding Sealer MPI #102 or 88, Alkyd Varnish MPI #75, gloss.

B. Gypsum Board:
   1. Applications include but are not limited to walls, ceilings, soffits, bulkheads, and locations indicated below.
   2. INT 9.2A Latex: Latex Primer Sealer MPI #50, Latex #52, gloss level 3.
      a. At ceilings, soffits and bulkheads: Latex Primer Sealer MPI #50, Latex #53, gloss level 1.
   3. INT 9.2A Latex: High-build primer, Latex #52, gloss level 3.
      a. Primer:
         1) Sherwin Williams, PrepRite High Build Interior Latex Primer/Surfacer.

C. Exposed Concrete Floors:
   1. Clear concrete sealer, or grey epoxy floor paint.

PART 3 EXECUTION

3.01 SCOPE -- SURFACES TO BE FINISHED

A. Paint all exposed surfaces except where indicated not to be painted or to remain natural; the term "exposed" includes areas visible through permanent and built-in fixtures when they are in place.

B. Paint the surfaces described in PART 2, indicated on the Drawings, and as follows:
   1. If a surface, material, or item is not specifically mentioned, paint in the same manner as similar surfaces, materials, or items, regardless of whether colors are indicated or not.
   2. Paint surfaces behind movable equipment and furnishings the same as similar exposed surfaces.
   3. Paint surfaces to be concealed behind permanently installed fixtures, equipment, and furnishings.
   4. Paint back sides of access panels and removable and hinged covers to match exposed surfaces.
   5. Paint front sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.

C. Do Not Paint or Finish the Following Items:
   1. Items fully factory-finished unless specifically noted; factory-primed items are not considered factory-finished.
   2. Items indicated to receive other finish.
   3. Items indicated to remain naturally finished.
   4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
   5. Anodized aluminum.
   6. Polished and brushed stainless steel items.
   7. Brick, precast concrete, integrally colored plaster.
   8. Polished and brushed stainless steel, anodized aluminum, bronze, terne, and lead.
   9. Acoustical materials.
   10. Concealed piping, ductwork, and conduit.

3.02 EXAMINATION

A. Verify that surfaces are ready to receive Work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

C. Test shop-applied primer for compatibility with subsequent cover materials; report incompatible primer conditions and submit recommended changes for CMD Project Management staff approval.

D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Plaster and Gypsum Board: 12 percent.
   2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
   3. Interior Wood: 15 percent, measured in accordance with ASTM D 4442.
   4. Exterior Wood: 15 percent, measured in accordance with ASTM D 4442.

E. Measure the ph factor of concrete, masonry, and mortar before starting any finishing process, using the method specified in MPI Architectural Painting Manual.
   1. Report results in writing to CMD Project Management staff before starting work.
   2. If results of test indicate need for remedial action, provide written description of remedial action. If a different primer or paint systems is required, state the total cost of the change. Do not proceed with remedial action or change without receiving written authorization from CMD Project Management staff.

3.03 PREPARATION

A. Prepare surfaces as specified in MPI Architectural Painting Specification Manual and as follows for the applicable surface and coating; if multiple preparation treatments are specified, use as many as necessary for best results; where the Manual references external standards for preparation (e.g. SSPC standards), prepare as specified in those standards; comply with coating manufacturer's specific preparation methods or treatments, if any.

B. Coordinate painting work with cleaning and preparation work so that dust and other contaminants do not fall on newly painted, wet surfaces.

C. Surface Appurtenances: Prior to preparing surfaces or finishing, remove electrical plates, hardware, light fixtures, light fixture trim, escutcheons, machined surfaces, fittings, and similar items already installed that are not to be painted.
   1. If removal is impractical or impossible because of the size or weight of the item, provide surface-applied protection before preparation and finishing.
   2. After completing painting in each space or area, reinstall items removed using workers skilled in the trades involved.

D. Surfaces: Correct defects and clean surfaces which affect work of this section. Remove or repair existing coatings that exhibit surface defects.

E. Marks: Seal with shellac those which may bleed through surface finishes.

F. Impervious Surfaces: Remove mildew by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

G. Concrete, Cement Plaster and Unit Masonry Surfaces to be Painted: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
   1. Prepare concrete, concrete masonry block, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.

H. Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound. Spot prime defects after repair.

I. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

J. Interior Wood Items to Receive Transparent Finish: Sand wood to obtain a uniform appearance before immediately starting work. Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.

K. Exterior Wood to Receive Transparent Finish: Remove dust, grit, and foreign matter; seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes with tinted exterior caulking compound after sealer has been applied. Prime concealed surfaces.

L. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.04 APPLICATION

A. Apply products in accordance with manufacturer's instructions and as specified or recommended by MPI Manual, using the preparation, products, sheens, textures, and colors as indicated.
   1. Provide completed work matching approved samples for color, texture, and coverage.
   2. Remove, refinish, or repaint work not complying with requirements.

B. Do not apply finishes over dirt, rust, scale, grease, moisture, scuffed surfaces, or other conditions detrimental to formation of a durable coating film; do not apply finishes to surfaces that are not dry.

C. Use applicators and methods best suited for substrate and type of material being applied and according to manufacturer's instructions.
   1. Brush Application: Use brushes best suited for the type of material applied; use brush of appropriate size for the surface or item being painted; produce results free of visible brush marks.
   2. Roller Application: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
   3. Spray Application: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.
   4. Where application method is listed in the MPI Manual for the paint system that application method is required; otherwise any application method recommended by manufacturer for material used and objects to be painted is acceptable.

D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate; provide total dry film thickness of entire system as recommended by manufacturer.
   1. Number of coats and film thickness required are the same regardless of application method.
   2. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance.
   3. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive dry film thickness equivalent to that of flat surfaces.

E. Apply finish to completely cover surfaces with uniform appearance without brush marks, runs, sags, laps, ropiness, holidays, spotting, cloudiness, or other surface imperfections.
   1. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
   2. Before applying finish coats, apply a prime coat of material recommended by manufacturer, unless the surface has been prime coated by others; where evidence of suction spots or unsealed areas in first coat appear, recoat primed and sealed surfaces to ensure finish coat with no burn through or other defects due to insufficient sealing.
   3. Apply first coat to surface that has been cleaned, pretreated, or otherwise prepared as soon as practical after preparation and before subsequent surface deterioration.
   4. Do not apply succeeding coats until the previous coat has cured as recommended by

manufacturer.

5. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat will not cause the undercoat to lift or lose adhesion.
6. If manufacturer's instructions recommend sanding to produce a smooth, even surface, sand between coats.
7. Before applying next coat vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

3.05 CLEANING AND PROTECTION

A. Collect waste material which may constitute a fire hazard, place in closed metal containers, and remove daily from site.

B. At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from site.

C. Protect other work, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting as approved by Project Manager.

D. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.

E. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in MPI Manual.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Accessories for toilet rooms and showers.

B. Grab bars.

1.02 REFERENCE STANDARDS

A. ASTM A 666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2003.

B. ASTM C 1036 - Standard Specification for Flat Glass; 2006.

C. GSA CID A-A-3002 - Mirrors, Glass; U.S. General Services Administration; 1996.

1.03 COORDINATION

A. Coordinate the work with the placement of internal wall reinforcement to receive anchor attachments.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Products listed are made by Moen Incorporated; www.moen.com, unless noted otherwise.

B. Other Acceptable Manufacturers:
   1. American Specialties, Inc: www.americanspecialties.com
   2. Bradley Corporation: www.bradleycorp.com

2.02 MATERIALS

A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
   1. Grind welded joints smooth.
   2. Fabricate units made of metal sheet of seamless sheets, with flat surfaces.

B. Stainless Steel Sheet: ASTM A 666, Type 304.

C. Mirror Glass: Float glass, ASTM C 1036 Type I, Class 1, Quality Q2, with silvering, copper coating, and suitable protective organic coating to copper backing in accordance with GSA CID A-A-3002.

D. Fasteners, Screws, and Bolts: Hot dip galvanized, tamper-proof, stainless steel.

E. ABS Plastic: Acrylonitrile-butadiene-styrene resin formulation.

2.03 TOILET ROOM ACCESSORIES

A. Toilet Paper Dispenser **TBA-1**: Single roll, surface mounted bracket type, stainless steel
   1. Capacity: Designed for 5-1/2 inch diameter tissue rolls.
   2. Product: Preston DN8408CH manufactured by Moen.

B. Mirrors **TBA-4**: Flat panel, ¼" thick float glass mirror.
   1. Size: 36 inches by 36 inches.
   2. Frameless, installed with polished chrome "j" shaped mirror clips.
   3. Manufacturer: Stanley or the like.

C. Grab Bars **TBA-5**: Stainless steel, 1-1/4 inches outside diameter, minimum 0.05 inch wall thickness, No. 4 finish, nonslip grasping surface finish, concealed flange mounting; 1-1/2 inches clearance between wall and inside of grab bar. Grab bars will be called out in RFP

for all ADA units.

1. Length and configuration: Straight, 12 inches, 18 inches, 24, inches, 36 inches, and 42 inches long.
2. Product: B-5806 manufactured by Bobrick (consult with CMD Project Management staff regarding other manufacturers' approvals).

2.04 SHOWER AND TUB ACCESSORIES

A. Shower Curtain Rod **TBA-6**: Stainless steel tube, 1 inch outside diameter, 0.028 (22 gauge) inch wall thickness, satin-finished, satin-finished stainless steel flanges, for concealed mounting.
   1. Product: DN2145CH manufactured by Moen.

B. Towel Bar **TBA-7**: Stainless steel Type 304, 3/4 inch round tubular bar; rectangular brackets, concealed attachment, satin finish.
   1. Length: 24 inches.
   2. Product: DN8424CH manufactured by Moen.
   3. Location: 1 per bathroom.

C. Towel Ring **TBA-8**: Towel ring with singular mounting bracket, concealed attachment, satin finish.
   1. Length: 6"
   2. Product: DN8486CH manufactured by Moen.
   3. Location: 1 per bathroom

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify exact location of accessories for installation. Coordinate with Project Coordinator if uncertain of location.

C. Verify that field measurements are as indicated on drawings.

3.02 PREPARATION

A. Deliver inserts and rough-in frames to site for timely installation.

B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

A. Install accessories in accordance with manufacturers' instructions.

B. Install plumb and level, securely and rigidly anchored to substrate.

C. Mounting Heights and Locations: As required by accessibility regulations and as indicated on drawings

END OF SECTION

SECTION 10 5623 – WIRE STORAGE SHELVING

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Wall mounted wire closet shelving.

B. Accessories.

1.02 RELATED REQUIREMENTS

A. Section 06 1000 - Rough Carpentry: Blocking in walls for attachment of shelving.

1.03 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used, with installation instructions.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store products under cover and elevated above grade.

C. Store flat to prevent warpage and bending.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Wire Storage Shelving:
   1. RubberMaid Closet and Organization Products, Direct Mount non-adjustable: www.rubbermaidcloset.com/closet

2.02 SHELVING APPLICATIONS

A. Bedroom Closets:
   1. Wall-to-wall shelf with free sliding hanger rod.

B. Coat Closets:
   1. Wall-to-wall shelf with free sliding hanger rod.

C. Linen Closets:
   1. Wall-to-wall close-mesh shelves spaced at 16 inch vertically, not less than 20 inches deep.

D. Storage Closets:
   1. Wall-to-wall storage shelves, close-mesh cross wire spacing, stacked at 16 inch vertically, not less than 20 inches deep.

E. Laundry Room:
   1. Above Washer and Dryer storage shelve, close-mesh cross wire spacing, installed at 60 inches above finished floor.

2.03 MATERIALS

A. Wire Shelving: Factory-assembled coated wire mesh shelf assemblies for wall-mounting, with all components and connections required to produce a rigid structure that is free of buckling and warping.
   1. Construction: Cold-drawn steel wire with average tensile strength of 100,000 psi resistance welded into uniform mesh units, square, rigid, flat, and free of dents or other distortions, with wires trimmed smooth.
   2. Coating: PVC or epoxy, applied after fabrication, covering all surfaces.
   3. PVC Coating: 9 to 11 mils thick.

4. Epoxy Coating: Non-toxic epoxy-polyester powder coating baked-on finish, 3 to 5 mils thick.
5. Standard Mesh Shelves: Cross deck wires spaced at 1 inch.
6. Close-Mesh Shelves: Cross deck wires spaced at ½ inch.
7. Shelf and Rod Units: Integral hanging rod at front edge of shelf.
8. Free-Sliding Hanging Rod: Integral hanging rod that permits uninterrupted sliding of hangers the full width of the shelf.

B. Mounting Hardware: Provide manufacturer's standard mounting hardware; include support braces, wall brackets, back clips, end clips, poles, and other accessories as required for complete and secure installation; factory finished to match shelving.

C. Fasteners: As recommended by manufacturer for mounting substrates.

PART 3 EXECUTION

3.01 EXAMINATION

A. Inspect areas to receive shelving, to verify that spaces are properly prepared to receive shelf units, and are of dimensions indicated on shop drawings.

B. Verify appropriate fastening hardware.

C. Do not begin installation until substrates have been properly prepared.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Submit layout drawings of proposed installation to CMD Project Management staff for approval prior to installation.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions, with shelf surfaces level.

B. Cap exposed ends of cut wires.

C. Install back clips, end clips at side walls, and support braces at open ends. Install intermediate support braces as recommended by manufacturer.

3.04 CLEANING

A. Clean soiled surfaces after installation.

3.05 PROTECTION

A. Protect installed work from damage.

B. Touch-up, repair, or replace damaged products before Substantial Completion in a manner that eliminates evidence of replacement.

END OF SECTION

SECTION 11 3100 –RESIDENTIAL EQUIPMENT

General Building Construction

A. KITCHEN APPLIANCES

1. Refrigerator
    a. Manufacturer: Whirpool, Inc. www.whirlpool.com
    b. Model: WRT311FZDW Do not supply factory ice maker (All Standard and ADA accessible units)
2. Electric Range (with cord)
    a. Manufacturer: Whirpool, Inc. www.whirlpool.com
    b. Model: WFC150MDJW (Standard units)
    c. Model: WEC310S0FW (Freestanding unit, ADA accessible units)
3. Dishwasher (if specified in RFP)
    a. Manufacturer: see rfp
    b. Model: see rfp
4. Exterior Vented Range Hood (also See Section 23 3423)
    a. Manufacturer: Whirpool, Inc. www.whirlpool.com
    b. Model: UXT3030ADW (All Standard and ADA accessible units)
    c. Manufacturer: Broan
    d. Model 403001 (white)

B. LAUNDRY EQUIPMENT

1. Washer with hoses (if specified in RFP – rough-ins always to be installed)
    a. Manufacturer: Whirpool, Inc. www.whirlpool.com
    b. Model: WTW4855HW (Standard units)
    c. Model: WFW560CHW with base pedestal XHP1000XW (ADA accessible units)
    d. Guy Gray in-wall connection box and all associated plumbing at all units
2. Electric Dryer with cord (if specified in RFP – rough-ins always to be installed)
    a. Manufacturer: Whirpool, Inc. www.whirlpool.com
    b. Model: WED4850HW (Standard units)
    c. Model: WED562DHW with base pedestal XHP1000XW (ADA accessible units)
    d. DryerBox or approved equal in-wall duct connection to be installed in all units.

Note: Housing Maintenance will accept Crosley Appliances in models comparable to the Whirlpool models listed in this section. Those model #s were not made available at the time this Spec Book was updated. Please check the project rfp or ask the appropriate Project Coordinator/ Manager for more information during the bidding process if you are interested in providing this alternate brand of appliance.

END OF SECTION

SECTION 12 2113 – HORIZONTAL LOUVER BLINDS

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Horizontal slat louver blinds.

B. Operating hardware.

1.02 REFERENCE STANDARDS

A. WCMA A100.1 – Safety of Corded Window Covering Products; Window Covering Manufacturers Association; 2007. (ANSI/WCMA A101.1)

1.03 SUBMITTALS

A. Product Data: Provide data indicating physical and dimensional characteristics.

B. Samples: Submit two samples, 6 inch long illustrating slat materials and finish, color, cord type and color.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Horizontal Louver Blinds:
   1. Bali: www.baliblinds.com

2.02 BLINDS AND BLIND COMPONENTS

A. Blinds: Horizontal slat louvers hung from full-width headrail with full-width bottom rail; manual control of raising and lowering by cord with full range locking; blade angle adjustable by control wand; complying with WCMA A100.1.

B. Plastic Slats: PVC foam, radiused slat corners.
   1. Width: 1 inch.
   2. Color: Color as selected. White unless otherwise specified.
   3. Texture: Smooth.

C. Slat Support: Woven polypropylene cord, ladder configuration.

D. Head Rail: Pre-finished, formed aluminum or steel box, with end caps; internally fitted with hardware, pulleys, and bearings for operation; same depth as width of slats

E. Bottom Rail: Pre-finished, formed PVC with top side shaped to match slat curvature; with end caps. Color: Same as headrail.

F. Lift Cord: Braided nylon; continuous loop.
   1. Free end weighted.
   2. Color: As selected.

G. Control Wand: Extruded hollow plastic; hexagonal shape.
   1. Non-removable type.
   2. Color: As selected .

H. Headrail Attachment: Wall brackets.

I. Accessory Hardware: Type recommended by blind manufacturer.

2.03 FABRICATION

A. Determine sizes by field measurement.

B. Fabricate blinds to fit within openings with uniform edge clearance of ½ inch.

C. Supply three separate blinds for triple wide windows.

D. Supply two separate blinds for windows greater than 60” wide.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that openings are ready to receive the work.

3.02 INSTALLATION

A. Install blinds in accordance with manufacturer’s instructions.

B. Secure in place with concealed fasteners.

C. Tie lifting blind cords to length and trim excess cords to fit window opening height.

3.03 INSTALLATION TOLERANCES

A. Maximum Variation of Gap at Window Opening Perimeter: ¼ inch.

B. Maximum Offset From Level: 1/8 inch.

3.04 ADJUSTING

A. Adjust blinds for smooth operation.

3.05 CLEANING

A. Clean blind surfaces just prior to occupancy.

END OF SECTION

SECTION 21 1313 –WET PIPE SPRINKLER SYSTEMS
(Only when specified in RFP)
General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Wet-pipe sprinkler system.

B. System design, installation, and certification.

C. Fire department connections.

1.02 RELATED REQUIREMENTS

A. MN Building Code

1.03 REFERENCE STANDARDS

A. NFPA 13D - Standard for the Installation of Sprinkler Systems; National Fire Protection Association; (Current edition designing to)

C. UL (FPED) - Fire Protection Equipment Directory; Underwriters Laboratories Inc.; current edition.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene before starting work of this section.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on sprinklers, valves, and specialties, including manufacturers catalog information. Submit performance ratings, rough-in details, weights, support requirements, and piping connections.

C. Shop Drawings:

1. Submit preliminary layout of areas indicating only sprinkler locations.
2. Indicate hydraulic calculations, detailed pipe layout, hangers and supports, sprinklers, components and accessories. Indicate system controls.
3. Submit shop drawings to authority having jurisdiction for approval. Submit proof of approval to Architect.

D. Project Record Documents: Record actual locations of sprinklers and deviations of piping from drawings. Indicate drain and test locations.

E. Manufacturer's Certificate: Certify that system has been tested and meets or exceeds specified requirements and code requirements.

F. Operation and Maintenance Data: Include components of system, servicing requirements, record drawings, inspection data, replacement part numbers and availability, and location and numbers of service depot.
http://www.vikinggroupinc.com/manuals/Wet%20System%20Manual.pdf

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 01 6000 - Product Requirements, for additional provisions.
2. Extra Sprinklers: Type and size matching those installed, in quantity required by referenced NFPA design and installation standard.
3. Sprinkler Wrenches: For each sprinkler type.

1.06 QUALITY ASSURANCE

A. Maintain one copy of referenced design and installation standard on site.

B. Designer Qualifications: Design system under direct supervision of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

C. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

D. Installer Qualifications: Company specializing in performing the work of this section with minimum three years experience approved by manufacturer.

E. Equipment and Components: Provide products that bear FM label or marking.

F. Products Requiring Electrical Connection: Provide products that bear UL or FM label or marking as suitable for the purpose specified and indicated.

1.07 MOCK-UP

A. Provide components for installation in mock-up.

B. Mock-up may not remain as part of the Work.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Store products in shipping containers and maintain in place until installation. Provide temporary inlet and outlet caps. Maintain caps in place until installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Sprinklers, Valves, and Equipment:

1. Viking Corporation: www.vikinggroupinc.com
2. Substitutions: Not permitted.

2.02 SPRINKLER SYSTEM

A. Sprinkler System: Provide coverage for entire building.

B. Occupancy: comply with NFPA 13D 1 & 2 Family Dwelling Units; comply with NFPA 13R 4-plex.

C. Water Supply: Determine volume and pressure from water flow test data.

2.03 SPRINKLERS

VIKING FREEDOM PRODUCT SPECIFICATIONS

Residential Sprinklers

A. Residential Flush and Concealed Pendent Sprinklers

1. Freedom Residential Concealed HSW Sprinkler (4.0 K-Factor)

B. Residential Horizontal Sidewall Sprinklers

1. Freedom Residential VK480 Flat concealed Sidewall Sprinkler (4.0 K-Factor)

C. Residential Sprinkler Extensions

1. Residential Sprinkler Extensions

2.04 SYSTEM VALVES AND DEVICES

A. Wet Pipe Sprinkler Alarm Valve:
The riser check valve shall be UL Listed and Factory Mutual Approved. The riser check valve shall be equipped with a removable cover assembly. The riser check valve shall be listed for installation in the vertical or horizontal position. The riser check valve shall be equipped with gauge connections on the system side and supply side of the valve clapper. The riser check valve shall be equipped with a main drain outlet in the body of the valve above the rubber faced clapper assembly. The riser check valve trim piping to be externally galvanized. Maximum water working pressure to 250 PSI. The Riser Check Valve manufacturer to be The Viking Corporation. The Check Valve to be a Viking Easy Riser Swing Check Valve, Model E-1 or F-1. http://www.vikinggroupinc.com/databook/checkvalves/011189.pdf

B. Water Flow Indicating Alarm Pressure Switch:
The alarm pressure switch shall be compatible with system devices. The alarm pressure enclosure shall be UL Listed and Factory Mutual Approved for the application in which it is used. The alarm pressure switch shall have the ability to be wired for Class A or Class B service. The alarm pressure switch manufacturer shall be Potter, Model Number PS101A or PS102A. http://www.vikinggroupinc.com/usrelated/potter/ps10a.pdf

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with referenced NFPA design and installation standard.

B. Install equipment in accordance with manufacturer's instructions.

G. Place pipe runs to minimize obstruction to other work.

H. Place piping in concealed conditioned spaces.

M. Flush entire piping system of foreign matter.

O. Hydrostatically test entire system.

P. Require test be witnessed by Fire Marshal.

3.02 INTERFACE WITH OTHER PRODUCTS

Ensure required devices are installed and connected as required to fire alarm system.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Piping insulation.

1.02 RELATED REQUIREMENTS

A. Section 22 1005 - Plumbing Piping: Placement of hangers and hanger inserts.

1.03 REFERENCE STANDARDS

A. ASTM C 534/C 534M - Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form; 2008.

B. ASTM C 795 - Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel; 2008.

C. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2008.

D. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials; National Fire Protection Association; 2006.

E. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Underwriters Laboratories Inc.; 2003.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Accept materials on site, labeled with manufacturer's identification, product density, and thickness.

1.05 FIELD CONDITIONS

A. Maintain ambient conditions required by manufacturers of each product.

B. Maintain temperature before, during, and after installation for minimum of 24 hours.

PART 2 PRODUCTS

2.01 REQUIREMENTS FOR ALL PRODUCTS OF THIS SECTION

A. Surface Burning Characteristics: Flame spread/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E 84, NFPA 255, or UL 723.

2.02 FLEXIBLE ELASTOMERIC CELLULAR INSULATION

A. Manufacturer:
   1. Armacell International

B. Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C 534 Grade 3.
   1. Minimum Service Temperature: -40 degrees F.
   2. Maximum Service Temperature: 220 degrees F.
   3. Connection: Waterproof vapor barrier adhesive.

C. Elastomeric Foam Adhesive: Air dried, contact adhesive, compatible with insulation.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that piping has been tested before applying insulation materials.

B. Verify that surfaces are clean and dry, with foreign material removed.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

3.03 SCHEDULES

A. Plumbing Systems:
   1. Below Grade Domestic Hot Water Supply:
      a. Flexible Elastomeric Cellular Insulation
         1) Pipe Size Range: All sizes
         2) Thickness: 1 inch.
   2. Exposed Above Grade Cold and Hot Water Supply:
      a. Flexible Elastomeric Cellular Insulation
         1) Pipe Size Range: All sizes
         2) Thickness: 1 inch.

B. Cooling Systems:
   1. Refrigerant Piping:
      a. Flexible Elastomeric Cellular Insulation
         1) Thickness: Per manufacturer's recommendations.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pipe, pipe fittings, valves, and connections for piping systems.
   1. Sanitary sewer.
   2. Domestic water.
   3. Gas.

1.02 QUALITY ASSURANCE

A. Perform Work in accordance with State of Minnesota, standards.

B. Welder Qualifications: Certified in accordance with ASME (BPV IX).

1.03 REGULATORY REQUIREMENTS

A. Perform Work in accordance with State of Minnesota plumbing code.

B. Conform to applicable code for installation of backflow prevention devices.

C. Provide certificate of compliance from authority having jurisdiction indicating approval of installation of backflow prevention devices.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

1.05 FIELD CONDITIONS

A. Do not install underground piping when bedding is wet or frozen.

PART 2 PRODUCTS

2.01 SANITARY SEWER PIPING, BURIED WITHIN 5 FEET OF BUILDING

A. PVC Pipe: ASTM D 2665 or ASTM D 3034.
   1. Fittings: PVC.
   2. Joints: Solvent welded, with ASTM D 2564 solvent cement.

2.02 SANITARY SEWER PIPING, ABOVE GRADE

A. PVC Pipe: ASTM D 2665.
   1. Fittings: PVC.
   2. Joints: Solvent welded, with ASTM D 2564 solvent cement.

2.03 WATER SERVICE PIPING, BURIED WITHIN 5 FEET OF BUILDING

A. PE Pipe (PEX): ASTM D 2239, or ASTM D 2447 Schedule 40.
   1. Fittings: ASTM D 2609, PE.
   2. Joints: Mechanical with stainless steel clamp.

2.04 WATER DISTRIBUTION PIPING, ABOVE GRADE

A. PE Pipe (PEX-A or PEX-B): ASTM D 2239, or ASTM D 2447 Schedule 40.
   1. Fittings: ASTM D 2609, PE. Fittings shall be of the same manufacturer of the piping material.
   2. Joints: Per manufacturers installation instructions.

2.05 WATER DISTRIBUTION PIPING, BELOW GRADE

A. PE Pipe (PEX-A or PEX-B): ASTM D 2239, or ASTM D 2447 Schedule 40.
   1. Fittings: ASTM D 2609, PE Fittings shall be of the same manufacturer of the piping material.
   2. Joints: Per manufacturers installation instructions.

2.06 NATURAL GAS PIPING, ABOVE GRADE

A. Steel flex per code

2.07 FLANGES, UNIONS, AND COUPLINGS

A. Unions for Pipe Sizes 3 Inches and Under:
   1. Ferrous pipe: Class 150 malleable iron threaded unions.
   2. Copper tube and pipe: Class 150 bronze unions with soldered joints.

PART 3 EXECUTION

3.01 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt, on inside and outside, before assembly.

C. Prepare piping connections to equipment with flanges or unions.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Water distribution piping to fixtures shall be underground. Do not install piping in attic space.

C. Install piping to maintain headroom, conserve space, and not interfere with use of space.

D. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings. Refer to Section 22 0719.

E. Install vent piping penetrating roofed areas to maintain integrity of roof assembly.

F. Provide support for utility meters in accordance with requirements of utility companies.

G. Pipe vents from gas pressure reducing valves to outdoors and terminate in weather proof hood.

H. PVC Pipe: Make solvent-welded joints in accordance with ASTM D 2855.

I. Sleeve pipes passing through partitions, walls and floors.

3.03 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

A. Disinfect water distribution system in accordance the MN State Plumbing Code

3.04 SERVICE CONNECTIONS

A. Provide new sanitary sewer services. Before commencing work check invert elevations required for sewer connections, confirm inverts and ensure that these can be properly connected with slope for drainage and cover to avoid freezing.

B. Provide new water service complete with approved water meter, BOTH MUNICIPAL SYSTEMS AND PRIVATE WELL SYSTEMS.

C. Provide new gas service complete with gas meter and regulators. Gas service distribution piping to have initial minimum pressure of 2 psi. Provide regulators on each line serving gravity type appliances, sized in accordance with equipment.

D. Size and install natural gas piping per the 2000 International Fuel Gas Code, MN Amendments.

END OF SECTION

SECTION 22 1006 – PLUMBING PIPING SPECIALTIES

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Floor drains.

B. Cleanouts.

C. Hose bibbs.

D. Hydrants.

1.02 RELATED REQUIREMENTS

A. Section 22 1005 - Plumbing Piping.

B. Section 22 4000 - Plumbing Fixtures.

C. Section 22 3000 - Plumbing Equipment.

1.03 REFERENCE STANDARDS

A. ASME A112.6.3 - Floor and Trench Drains; The American Society of Mechanical Engineers; 2001 (R2007).

B. ASSE 1019 - Vacuum Breaker Wall Hydrants, Freeze Resistant Automatic Draining Type; American Society of Sanitary Engineering; 2004, and Errata 2005 (ANSI/ASSE 1019).

1.04 DELIVERY, STORAGE, AND HANDLING

A. Accept specialties on site in original factory packaging. Inspect for damage.

PART 2 PRODUCTS

2.01 DRAINS

A. Floor Drain:
   1. ASME A112.6.3; PVC double drainage flange, weep holes, reversible clamping collar, and round, adjustable nickel-bronze strainer.

2.02 CLEANOUTS

A. Cleanouts:
   1. PVC

2.03 HYDRANTS

A. Wall Hydrants:
   1. ASSE 1019; freeze resistant, self-draining type with polished bronze wall plate hose thread spout, handwheel, and integral vacuum breaker.

2.04 WASHING MACHINE BOXES AND VALVES

A. Description: Plastic preformed rough-in box with brass valves with dual lever handle, socket for 2 inch waste, and slip in finishing cover. Provide and install sealed brass caps for connections when washer is not being installed to prevent accidental water discharge.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Encase exterior cleanouts in concrete flush with grade.

C. Install floor cleanouts at elevation to accommodate finished floor.

D. Install approved portable water protection devices on plumbing lines where contamination of domestic water may occur; on boiler feed water lines, and exterior hose bibbs.

E. Pipe relief from backflow preventer to nearest drain.

END OF SECTION

SECTION 22 3000 – PLUMBING EQUIPMENT

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Water Heaters.

B. Pumps.
   1. Drain tile Sump Pumps.

C. Water Softeners

1.02 RELATED REQUIREMENTS

A. Section 26 2717 - Equipment Wiring: Electrical characteristics and wiring connections.

1.03 REFERENCE STANDARDS

1.04 DELIVERY, STORAGE, AND HANDLING

A. Provide temporary inlet and outlet caps. Maintain caps in place until installation.

PART 2 PRODUCTS

2.01 RESIDENTIAL GAS FIRED WATER HEATERS

A. Type: Automatic, electric (standard), natural gas fired (on specified projects), vertical storage, power direct-vent.

B. Thermal Efficiency: 90% minimum.

C. Performance; two & three-bedroom units:
   1. Storage Capacity: 50 gal.

D. Manufacturer: A.O. Smith www.hotwater.com
   1. Electric model (standard unless otherwise specified in RFP): ProLine ENT-50
   2. Gas model (if specified in RFP): ProLine GDVT-50

E. Tank: Glass lined welded steel with single flue passage, flue baffle and draft hood; thermally insulated and encased in corrosion-resistant steel jacket; baked-on enamel finish; floor shield and legs.

F. Controls: Automatic water thermostat and built-in gas pressure regulator; temperature range adjustable from 120 to 170 degrees F, cast iron or sheet metal burner, safety pilot and thermocouple.

G. Accessories: Provide:
   1. Water Connections: Brass.
   2. Dip Tube: Brass.
   3. Drain Valve.
   4. Anode: Magnesium.
   5. Temperature and Pressure Relief Valve: ASME labeled.
   6. Water heater Pan.

2.02 DRAINTILE SUMP PUMPS

A. Size sump and pump in accordance with manufacturer's recommendations for the size and length of the drain tile discharging to the sump.

B. Install per manufacturer's installation instructions and the MN State Plumbing Code.

2.03 WATER SOFTENERS (See RFP selection sheet if required)

A. Fleck 5600 SXT 32,000 grain with brine tank in black.

B Cygna 32,000 grain

PART 3 EXECUTION

3.01 INSTALLATION

A. Install plumbing equipment in accordance with manufacturer's instructions, as required by code, and complying with conditions of certification, if any.

B. Coordinate with plumbing piping and related fuel piping work to achieve operating system.

C. Provide sealed combustion vent piping per manufacturer's recommendations.

D. Water Softener Startup: Program water softener, add 80 lbs of salt, and cycle water softener.

END OF SECTION

SECTION 22 4000 – PLUMBING FIXTURES

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Water closets.

B. Lavatories.

C. Sinks.

D. Bathtubs.

1.02 RELATED REQUIREMENTS

A. Section 07 9005 - Joint Sealers: Seal fixtures to walls and floors.

B. Section 22 1005 - Plumbing Piping.

C. Section 22 1006 - Plumbing Piping Specialties.

D. Section 22 3000 - Plumbing Equipment.

1.03 REFERENCE STANDARDS

A. ANSI Z124.1.2 - American National Standard for Plastic Bathtub and Shower Units; 2005.

B. ASME A112.18.1 - Plumbing Supply Fittings; The American Society of Mechanical Engineers; 2005.

C. ASME A112.19.2 - Vitreous China Plumbing Fixtures and Hydraulic Requirements for Water Closets and Urinals; The American Society of Mechanical Engineers; 2003.

D. ASME A112.19.3 - Stainless Steel Plumbing Fixtures (Designed for Residential Use); The American Society of Mechanical Engineers; 2001 (R2004).

1.04 DELIVERY, STORAGE, AND HANDLING

A. Accept fixtures on site in factory packaging. Inspect for damage.

B. Protect installed fixtures from damage by securing areas and by leaving factory packaging in place to protect fixtures and prevent use.

PART 2 PRODUCTS

2.01 TANK TYPE WATER CLOSETS

A. Bowl: ASME A112.19.2; floor mounted, siphon jet, vitreous china, 18 inches high, close-coupled closet combination with elongated rim, insulated vitreous china closet tank with fittings and lever flushing valve, bolt caps.
   1. Water Consumption:
      a. Maximum 1.3 gallon per flush.
      b. Manufacturer: American Standard, www.americanstandard.com
      c. Model: Cadet 3 FloWise 12” Rough-in, 16 ½” Rim Height 2835.128 (3305.128)

B. Seat: Solid white plastic, closed front, brass bolts, with cover.

2.02 LAVATORIES

A. Cultured marble top with integral basin. See Section 06 4100 – 2.06 for further info.

B. Supply Faucet: ASME A112.18.1; chrome plated combination supply fitting with pop-up waste, water economy aerator with maximum flow of 1.5 gallons per minute, single lever handle.
   a. Manufacturer: Moen Incorporated, www.moen.com

b. Model: Chateau L4621

C. Accessories:
1. Standard plastic P-trap with clean-out plug and arm with escutcheon.
2. Wheel handle stops.
3. Flexible supplies.

2.03 SINKS

A. Double Compartment Bowl: ASME A112.19.3; 33 by 22 by 8 inch outside dimensions 22 gage thick, Type 304 stainless steel, self rimming and undercoated, with ledge back drilled for trim. 4-hole configuration.
1. Drain: 3-1/2 inch crumb cup and tailpiece.
2. Manufacturer: Elkay, www.elkay.com
3. Model: Neptune NBC 33224
4. Approved equal: Dayton DD23322

B. Supply Faucet: ASME A112.18.1; chrome plated brass supply with 5" high by 9" long swing spout, vandal proof water economy aerator with maximum 1.5 gallons flow, single lever handle with hand side sprayer.
1. Manufacturer: Moen Incorporated, www.moen.com
2. Model: Chateau 7430

C. Accessories: Standard plastic P-trap with clean-out plug and arm with escutcheon, wheel handle stop, flexible supplies.

D. ADA Protective Padding: Required on all roll-under sink locations when specified as handicap accessible.

2.04 BATHTUB/SHOWER COMBINATION

A. Tub/Shower Combination:
1. ANSI Z124.1.2; ADA compliant, gelcoat, with slip-resistant bottom surface, contoured shape, color as selected.
a. Back and side wall grab bars (when specified in RFP).
b. Manufacturer: Warm Rain
c. Model: **FW 44/45** Standard for: **Tamarack, Sugarmaple, Cedar Models**
d. Model: **FW 44/45** With Factory Installed Grab Bar Backing for: **Poplar, Butternut, Alder, Walnut Models**. Include factory installed Grab Bars if unit is identified as a handicap model based on RFP Selection Sheet.
e. Model: **H 852/853** Shower Stall with Factory Installed Grab Bar Backing for **Butternut, Alder, Walnut Models**. If unit is identified as a handicap model based on RFP Selection Sheet, a ceramic tile roll-in shower will be installed.
f. Model: **WR 860/861** Shower Stall with Factory Installed Grab Bar Backing for **Blue Spruce Model**. Include factory installed Grab Bars if unit is identified as a handicap model based on RFP Selection Sheet.
g. Remodeler 3-piece Tub/Shower Combinations: For Renovations Only.
Model: WR 533 FF, when 60” Shower is specified
Model: H330/331 FF, when 60” Tub/Shower is specified.

B. Bath and Shower Trim: ASME A112.18.1M; concealed shower and over rim supply with diverter spout, pressure balanced mixing valve, bent shower arm with adjustable spray ball joint showerhead with maximum 2.5 gallons per minute flow and escutcheon, lever operated pop-up waste and overflow.
1. Manufacturer: Moen www.moen.com
2. Model: Chateau L2353

C. Hand Held Shower Trim: (All models with Roll-in Shower, Handicap Accessible Units or Low Threshold Shower Remodels)
1. Wall/hand shower with flexible 69" metal hose with in-line vacuum breaker, wall connection and flange. 30" slide bar for hand shower mounting. Provide diverter valve and 1.5 GPM shower head with push button ON-OFF control.
1. Manufacturer: Moen www.moen.com

2. Model: Eco-Performance 3667EP

2.05 LAUNDRY TUB/FAUCET

A. Laundry Tub:
   1. Wall mounted composite laundry tub.
      a. Length: 23 inches.
      b. Width: 23 inches.
      c. Manufacturer: Swanstone Composite Wall Mounted
      d. Model: MF-1W
      e. Approved equal: Mustee 18/19, Utilatub W – Wall Mounted

B. Supply Faucet:
   1. Manufacturer: Moen Incorporated, www.moen.com
   2. Model: Chateau 74998

2.06 LOW THRESHOLD SHOWER FOR REMODELS

A. Flexstone Royale Alcove Shower

Surround kit per color listed in rfp in most appropriate size to be trimmed to fit application.
Single threshold shower base per color listed in rfp in most appropriate size with correct drain opening location for the application.
Supply and install plywood backer for surround.
Supply and install grab bars as shown in MN Accessibility Code.
Supply and install wall mounted folding shower seat as specified in rfp.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that walls and floor finishes are prepared and ready for installation of fixtures.

B. Confirm that millwork is constructed with adequate provision for the installation of counter top lavatories and sinks.

3.02 PREPARATION

A. Rough-in fixture piping connections in accordance with minimum sizes indicated in fixture rough-in schedule for particular fixtures.

B. All bathtub and shower units installed in Slab-on-Grade Single Level homes must be equipped with grab bar backing.

3.03 INSTALLATION

A. Provide stainless steel braided flexible supplies to fixtures with wheel handle stops, reducers, and escutcheons.

B. Install components level and plumb.

C. Seal fixtures to wall and floor surfaces with sealant as specified in Section 07 9005, color to match fixture.

D. Solidly attach water closets to floor with lag screws.

3.04 INTERFACE WITH WORK OF OTHER SECTIONS

A. Review millwork shop drawings. Confirm location and size of fixtures and openings before rough-in and installation.

3.05 ADJUSTING

A. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.

3.06 CLEANING

A. Clean plumbing fixtures and equipment.

END OF SECTION

SECTION 23 0713 – DUCT INSULATION

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Duct insulation.

1.02 REFERENCE STANDARDS

A. ASTM C 518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2004.

B. ASTM C 553 - Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications; 2002.

C. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2008.

D. ASTM E 96/E 96M - Standard Test Methods for Water Vapor Transmission of Materials; 2005.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Accept materials on site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.

B. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

1.04 FIELD CONDITIONS

A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastics, and insulation cements.

B. Maintain temperature during and after installation for minimum period of 24 hours.

PART 2 PRODUCTS

2.01 REQUIREMENTS FOR ALL PRODUCTS OF THIS SECTION

A. Surface Burning Characteristics: Flame spread/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E 84, NFPA 255, or UL 723.

2.02 GLASS FIBER, FLEXIBLE

A. Insulation: ASTM C 553; flexible, noncombustible blanket.
   1. 'K' value: 0.36 at 75 degrees F, when tested in accordance with ASTM C 518.
   2. Maximum Service Temperature: 450 degrees F.
   3. Maximum Water Vapor Sorption: 5.0 percent by weight.

B. Vapor Barrier Jacket:
   1. Kraft paper with glass fiber yarn and bonded to aluminized film.
   2. Moisture Vapor Permeability: 0.02 perm inch, when tested in accordance with ASTM E 96/E 96M.
   3. Secure with pressure sensitive tape.

2.03 Closed Cell Spray Foam

A. Continuous thickness to meet insulation manufacturer’s required R-value and Perm. Rating.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are clean, foreign material removed, and dry.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Insulated ducts conveying air above or below ambient temperature:
   1. Provide insulation with vapor barrier jackets.
   2. Finish with tape and vapor barrier jacket.
   3. Continue insulation through walls, sleeves, hangers, and other duct penetrations.
   4. Insulate entire system including fittings, joints, flanges, fire dampers, flexible connections, and expansion joints.

3.03 SCHEDULES

A. Exhaust Ducts within 10 ft of Exterior Openings: 1-1/2 inches thick.

B. Outside Air Intake Ducts: 1-1/2 inches thick.

C. Return and Relief Ducts: 1-1/2 inches thick.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal ductwork.

B. Buried ductwork.

1.02 REFERENCE STANDARDS

A. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2007.

B. SMACNA (DCS) - HVAC Duct Construction Standards - Metal and Flexible; Sheet Metal and Air Conditioning Contractors' National Association; 2005.

1.03 PERFORMANCE REQUIREMENTS

A. No variation of duct configuration or sizes permitted except by written permission. Size round ducts installed in place of rectangular ducts in accordance with ASHRAE table of equivalent rectangular and round ducts.

1.04 FIELD CONDITIONS

A. Do not install duct sealants when temperatures are less than those recommended by sealant manufacturers.

B. Maintain temperatures within acceptable range during and after installation of duct sealants.

PART 2 PRODUCTS

2.01 MATERIALS

A. Galvanized Steel Ducts: Hot-dipped galvanized steel sheet, ASTM A 653/A 653M FS Type B, with G60/Z180 coating.

B. Insulated Flexible Ducts: See 3.01 (M)
   1. Two ply vinyl film supported by helically wound spring steel wire; fiberglass insulation; aluminized vapor barrier film.
      a. Pressure Rating: 10 inches WG positive and 1.0 inches WG negative.
      b. Maximum Velocity: 4000 fpm.
      c. Temperature Range: -10 degrees F to 160 degrees F.

2.02 DUCTWORK FABRICATION

A. Fabricate and support in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.

B. Construct T's, bends, and elbows with radius of not less than 1-1/2 times width of duct on centerline. Where not possible and where rectangular elbows must be used, provide air foil turning vanes. Where acoustical lining is indicated, provide turning vanes of perforated metal with glass fiber insulation.

C. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.

2.03 BURIED UNDERGROUND DUCTS (When indicated on RFP Selection Sheet)

A. Furnace supply duct work:
   1. DUCT MANUFACTURERS

a. AKDUCT.
2. Buried ducts shall be integrally insulated high density polyethylene.
3. Duct work, fittings, and boots shall be constructed of high density polyethylene.
4. Joints shall be clamp and gasket and sealed with screws or clamps per manufacturers instructions.

2.04 RADON MITIGATION DUCT WORK:

A. PVC Pipe: ASTM D 2665 or ASTM D 3034.
1. Fittings: PVC.
2. Joints: Solvent welded, with ASTM D 2564 solvent cement.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Duct sizes indicated are inside clear dimensions. For lined ducts, maintain sizes inside lining.

C. Install and seal metal and flexible ducts in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible. All joints to be sealed with brush applied mastic, or Butyl Rubber Mastic Tape: Polyken 367-17, Nashua 360-17, or equal.

D. Supply duct work shall be sized in accordance with The Equal Static Friction Method with the friction being no more than 0.08 inches of water per 100 feet of duct work and velocities not exceeding 1,000 feet per minute.

E. Return, exhaust, and outside air duct work shall be sized in accordance with The Equal Static Friction Method with the friction being no more than 0.05 inches of water per 100 feet of duct work and velocities not exceeding 700 feet per minute.

F. Ducted returns shall be installed in the attic and insulated in accordance with Section 23 0713.

G. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.

H. Slope underground ducts to plenums or low pump out points at 1:500. Provide access doors for inspection.

I. Connect return grilles to low pressure ducts directly or with 4 feet maximum length of flexible duct held in place with strap or clamp.

J. Connect flexible ducts to metal ducts with liquid adhesive plus tape.

K. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.

L. Install dampered plenum register and return air grill in furnace main supply and return in mechanical rooms.

M. Flexible ductwork shall only be installed where galvanized ductwork cannot practically be installed. Verify any Flex duct installation with the Project Coordinator.

N. All exhaust and intake venting to be installed on gable wall ends.

O. General Contractor shall coordinate pre-engineered floor trusses to include 2) 12” x24” chases to allow adequate room to install ductwork.

3.02 SCHEDULES

A. Ductwork Material:
1. Buried Supply: High Density Polyethylene.
2. Return: Steel.
3. General Exhaust: Steel.
4. Outside Air Intake: Steel.
5. Dryer vent - aluminum

B. Ductwork Pressure Class:
   1. Supply or Return: 2 inch.
   2. General Exhaust: 1 inch.
   3. Outside Air Intake: 1 inch.

END OF SECTION

SECTION 23 3423 – HVAC POWER VENTILATORS

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Ducted range hoods.

B. Ceiling exhaust fans.

C. Radon mitigation fans.

1.02 FIELD CONDITIONS

A. Permanent ventilators may not be used for ventilation during construction.

PART 2 PRODUCTS

2.01 DUCTED RANGE HOODS

A. Manufacturer: Whirlpool, www.whirlpool.com
   1. Model: UXT3030ADW

   Manufacturer: Broan
   1. Model: 403001

B. Range hood shall come equipped with a two-speed fan switch and separate light switch, washable aluminum filters, polymeric fan blade and light lens.

C. Unit shall have a backdraft damper and be ducted to the outside at exterior wall or attic gable end.

D. Color: White (unless otherwise noted).

E. In ADA units, control switches to be hardwired and installed above countertop.

2.02 CEILING EXHAUST FANS

A. Manufacturer: Panasonic www.panasonic.com/ventfans

   1. Model: FV-05-11VKSL2 (with light)

B. Centrifugal Fan Unit: Direct driven with galvanized steel housing lined with acoustic insulation, resilient mounted motor, gravity backdraft damper in discharge.

C. Provide and install one of the following modules per selection listed in rfp.

   1. Smart Action motion sensor to activate fan plug and play module FV-MSVK1

   2. Condensation module FV-CSVK1

D. Variable speed control with delayed OFF timer (set at 20 minutes - adjustable)

E. Disconnect Switch: Cord and plug in housing for thermal overload protected motor.

F. Grille: Molded white plastic.

2.03 RADON MITIGATION EXHAUST FANS (IF SPECIFIED)

A. Manufacturers:
   1. Fantech; www.fantech.com Model HP-190
   2. Submit alternatives to CMD Project Management staff for approval.

B. Construction: Direct driven, UV resistant, UL listed durable plastic, factory sealed housing and watertight electrical termination box for outdoor applications.

C. Motor: Totally enclosed for protection from the elements with high efficiency EBM motorized

impeller and automatic reset thermal overload protection.

D. Disconnect switch: Cord and plug.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. All venting to be ducted to exterior attic gable wall.

END OF SECTION

SECTION 23 3700 – AIR OUTLET AND INLETS

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Diffusers.

B. Registers/grilles.

C. Goosenecks.

1.02 REFERENCE STANDARDS

A. SMACNA (DCS) - HVAC Duct Construction Standards - Metal and Flexible; Sheet Metal and Air Conditioning Contractors' National Association; 2005.

PART 2 PRODUCTS

2.01 DIFFUSERS, GRILLES, AND REGISTERS

A. Size diffusers, registers, and grilles in accordance with manufacturer’s recommendations as they correlate to the CFM moving through the outlet or inlet.

B. Damper: Integral, gang-operated, and operable from face.

C. Fabrication: Steel with baked enamel finish.

D. Color: White

2.02 GOOSENECKS

A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, of minimum 18 gauge galvanized steel.

B. 1/2 inch mesh bird screen.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Check location of outlets and inlets and make necessary adjustments in position to conform with architectural features, symmetry, and lighting arrangement.

C. Install diffusers to ductwork with air tight connection.

END OF SECTION

SECTION 23 5400 – FURNACES, SUPPLY AIRFLOW SCHEDULES, AND MAKEUP AIR REQUIREMENTS

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Forced air furnaces.

B. Controls.

1.02 RELATED REQUIREMENTS

A. Section 23 0713 - Duct Insulation: Duct Liner.

B. Section 23 3100 - HVAC Ducts and Casings.

1.03 REFERENCE STANDARDS

A. NFPA 54 - National Fuel Gas Code; National Fire Protection Association; 2006.

B. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; National Fire Protection Association; 2002.

C. NFPA 211 - Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances; National Fire Protection Association; 2006.

1.04 REGULATORY REQUIREMENTS

A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

PART 2 PRODUCTS

2.01 GAS FIRED FURNACES

A. Annual Fuel Utilization Efficiency (AFUE): 0.95 ("condensing").

B. Manufacturer: Lennox, www.lennox.com

C. Model: EL296V Two-stage, High efficiency furnace

D. Units: Self-contained, packaged, factory assembled, pre-wired unit consisting of cabinet, variable speed supply fan, heating element, controls, air filter, and accessories; wired for single power connection with control transformer.
   1. Safety certified by CSA in accordance with ANSI Z 21.47.
   2. Venting System: Direct.
   3. Combustion: Sealed
   4. Air Flow Configuration: Upflow. (Downflow when Buried duct is specified)
   5. Heating: Natural gas or propane fired.

E. Cabinet: Galvanized steel with baked enamel finish, easily removed and secured access doors with safety interlock switches, glass fiber insulation with reflective liner.

F. Primary Heat Exchanger:
   1. Material: Aluminized steel
   2. Shape: Fold-and-crimp sectional design.

G. Secondary Heat Exchanger:
   1. Material: Stainless steel.
   2. Coating: Polypropylene.
   3. Shape: Fold and crimp design

H. Gas Burner:
   1. Atmospheric type with adjustable combustion air supply,

2. Gas valve, two stage provides 100 percent safety gas shut-off; 24 volt combining pressure regulation, safety pilot, manual set (On-Off), pilot filtration, automatic electric valve.
3. Electronic pilot ignition, with electric spark igniter.
4. Combustion air damper with synchronous spring return damper motor.
5. Non-corrosive combustion air blower with permanently lubricated motor.

I. Gas Burner Safety Controls:
1. Thermocouple sensor: Prevents opening of gas valve until pilot flame is proven and stops gas flow on ignition failure.
2. Flame rollout switch: Installed on burner box and prevents operation.
3. Vent safety shutoff sensor: Temperature sensor installed on draft hood and prevents operation, manual reset.
4. Limit Control: Fixed stop at maximum permissible setting, de-energizes burner on excessive bonnet temperature, automatic resets.

J. Supply Fan: Centrifugal type rubber mounted with direct drive.

K. Motor: 250-1300 rpm variable speed, permanently lubricated.

L. Air Filters: 1 inch thick glass fiber, disposable type arranged for easy replacement. Provide and install new filters prior to turning over unit to owner. Label return air duct with proper filter size.

M. Operating Controls
1. Room Thermostat: Cycles burner to maintain room temperature setting.
2. Supply Fan Control: Energize from bonnet temperature independent of burner controls, with adjustable timed off delay and fixed timed on delay, with manual switch for continuous fan operation.

N. Unit Sizing: Contractor shall utilize Manual J method to determine heat load and cooling load for furnace sizing.

2.02 COOLING COILS

A. Provide cooling coils to match furnace, condensing unit capacity, and refrigerant type. See section 23 6213.

2.03 THERMOSTATS

A. Room Thermostat: Low voltage, electric solid state microcomputer based room thermostat:
1. System selector switch (heat-off) and fan control switch (auto-on).
2. Preferential rate control to minimize overshoot and deviation from setpoint.
3. Thermostat display:
a. Actual room temperature.
b. Programmed temperature.
c. System mode indication: heating, cooling, fan auto, off, and on, auto or on, off.
g. Manufacturer: Honeywell, www.honeywell.com
h. Model: T6 Pro Series TH6210U2001

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrates are ready for installation of units and openings are as indicated on shop drawings.

B. Verify that proper power supply is available and located correctly.

C. Verify that proper fuel supply is available for connection.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions and requirements of authorities having jurisdiction.

B. Install in accordance with NFPA 90A.

C. Install gas fired furnaces in accordance with NFPA 54.

D. Provide vent connections in accordance with NFPA 211.

E. Mount counterflow furnaces installed on combustible floors on additive base.

F. Furnace intake and exhaust venting shall be installed through exterior wall or attic gable end when available. Any through roof venting to be located on back side of roof (not visible from front street).

G. Contractor shall program thermostat for the 2 stage heating feature.

END OF SECTION

SECTION 23 6213 – PACKAGED AIR-COOLED REFRIGERANT COMPRESSOR AND CONDENSOR UNITS

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Condensing unit package.

B. Charge of refrigerant and oil.

C. Controls and control connections.

D. Refrigerant piping connections.

E. Motor starters.

F. Electrical power connections.

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete: Concrete bases.

B. Section 23 2300 - Refrigerant Piping.

C. Section 23 5400 - Furnaces.

D. Section 26 2717 - Equipment Wiring: Electrical characteristics and wiring connections.

1.03 REFERENCE STANDARDS

A. ARI 210/240 - Standard for Performance Rating of Unitary Air Conditioning and Air-Source Heat Pump Equipment; Air-Conditioning, Heating, and Refrigeration Institute; 2006.

B. ASHRAE Std 23 - Methods of Testing for Rating Positive Displacement Refrigerant Compressors and Condensing Units; American Society of heating, Refrigerating and Air-Conditioning Engineers, Inc.; 2005.

C. ASHRAE Std 90.1 - Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings; American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.; 2004.

D. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); National Electrical Manufacturers Association; 2003.

1.04 MANUFACTURER

A. Lennox : Model 14ACX: sized appropriately for house and use, to provide a complete and efficient system. Contractor to perform manual J cooling load calculation.

PART 2 PRODUCTS

2.01 MANUFACTURED UNITS

A. Units: Self-contained, packaged, factory assembled and pre-wired units suitable for outdoor use consisting of cabinet, compressors, condensing coil and fans, integral sub-cooling coil, controls, liquid receiver, wind deflector, and screens.

B. Construction and Ratings: In accordance with ARI 210/240. Testing shall be in accordance with ASHRAE Std 23.

C. Performance Ratings: Energy Efficiency Rating (EER) and Coefficient of Performance (COP) not less than prescribed by ASHRAE Std 90.1.

2.02 CASING

A. House components in welded steel frame with galvanized steel panels with weather resistant, baked enamel finish.

B. Mount starters, disconnects, and controls in weatherproof panel provided with full opening access doors. Provide mechanical interlock to disconnect power when door is opened.

C. Provide removable access doors or panels with quick fasteners.

2.03 CONDENSER COILS

A. Coils: Aluminum fins mechanically bonded to seamless copper tubing. Provide sub-cooling circuits. Air test under water to 425 psig, and vacuum dehydrate. Seal with holding charge of refrigerant.

B. Coil Guard: Louvered with lint screens.

2.04 FANS AND MOTORS

A. Vertical discharge direct driven propeller type condenser fans with fan guard on discharge.

2.05 COMPRESSORS

A. Compressor: Hermetic scroll type.
B. Mounting: Statically and dynamically balance rotating parts and mount on spring vibration isolators. Internally isolate hermetic units on springs.

C. Motor: Constant speed 1800 rpm suction gas cooled with electronic sensor and winding over temperature protection, designed for across-the-line starting. Furnish with starter.

D. Capacity Reduction Equipment: Suction valve unloaders, with lifting mechanism operated by electrically actuated solenoid valve, with unloaded compressor start; controlled from suction pressure.

2.06 REFRIGERANT CIRCUIT

A. Provide each unit with one refrigerant circuit, factory supplied and piped.

B. For each refrigerant circuit, provide:
   1. Filter dryer.
   2. Liquid line sight glass and moisture indicator.
   3. Thermal expansion valve for maximum operating pressure.
   4. Insulated suction line.
   5. Suction and liquid line service valves and gage ports.
   6. Liquid line solenoid valve.
   7. Charging valve.
   8. Discharge line check valve.
   9. Compressor discharge service valve.
   10. Condenser pressure relief valve.

C. Refrigerant charge shall be R-410a.

2.07 CONTROLS

A. On unit, mount weatherproof steel control panel, NEMA 250, containing power and control wiring, molded case disconnect switch, factory wired with single point power connection. Factory mount disconnect switch on unit under provisions of Section 26 2717.

B. For each compressor, provide across-the-line starter, non-recycling compressor overload, starter relay, and control power transformer or terminal for controls power. Provide manual reset current overload protection. For each condenser fan, provide across-the-line starter with starter relay.

C. Provide safety controls arranged so any one will shut down machine:
   1. High discharge pressure switch (manual reset) for each compressor.
   2. Low suction pressure switch (automatic reset) for each compressor.
   3. Oil Pressure switch (manual reset).

2.08 PROTECTION

For all Band Housing units, supply and install AC-Guard security cage model ACGUKIT with AC-Guard Top Bar and 2 locks to be anchored with ½"x 3" Red Head anchor sleeves to the 5'x5' concrete pad.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's installation instructions.

B. Complete structural, mechanical, and electrical connections in accordance with manufacturer's installation instructions.

C. Install units on one of the following per rfp.
   1. For all Band Housing units, pour a 5'x5' concrete pad 4" thick.
   2. Pre-manufactured condenser pad. Protect surrounding grade from erosion.

3.02 SYSTEM STARTUP

A. Supply initial charge of refrigerant and oil for each refrigeration system. Replace losses of oil or refrigerant prior to end of correction period.

B. Charge system with refrigerant and test entire system for leaks after completion of installation. Repair leaks, put system into operation, and test equipment performance.

END OF SECTION

SECTION 23 7213 – ENERGY RECOVERY VENTILATORS

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Energy Recovery Ventilators.

1.02 RELATED SECTIONS

A. Section 23 0713 - Duct Insulation

B. Section 23 3100 - HVAC Ducts and Casings.

C. Section 26 2717 - Equipment Wiring: Electrical characteristics and wiring connections.

1.03 REFERENCES

A. NFPA 90A - Standard for the Installation of Air Conditioning and Ventilating Systems; National Fire Protection Association; 2002.

B. NFPA 90B - Standard for the Installation of Warm Air Heating and Air Conditioning Systems; National Fire Protection Association; 2006.

C. ARI 1060 - Energy Recovery Ventilators.

PART 2 PRODUCTS

2.01 ENERGY RECOVERY VENTILATORS

A. MANUFACTURER: LENNOX

1. HRV 3-150
2. HRV 3-95

B. Unit shall be sized by HVAC contractor for a complete and efficient system.

C. Install Lennox control supplied with HRV unit. Control to be installed next to furnace thermostat.

D. Unit shall have single-point power connection.

E. Blower motors shall be thermally protected with automatic reset.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that services clearances are maintained during installation.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

END OF SECTION

SECTION 26 2726 – WIRING DEVICES

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Wall switches.

B. Receptacles.

C. Device plates and decorative box covers.

1.02 RELATED REQUIREMENTS

A. Section 26 0537 - Boxes.

1.03 REFERENCE STANDARDS

A. NECA 1 - Standard Practices for Good Workmanship in Electrical Contracting; National Electrical Contractors Association; 2006.

B. NEMA WD 1 - General Color Requirements for Wiring Devices; National Electrical Manufacturers Association; 1999 (R 2005).

C. NEMA WD 6 - Wiring Device -- Dimensional Requirements; National Electrical Manufacturers Association; 2002.

D. NFPA 70 - National Electrical Code; National Fire Protection Association; 2008.

1.04 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.

B. Products: Provide products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Cooper Wiring Devices: www.cooperwiringdevices.com .

B. Hubbell: www.hubbell-wiring.com .

C. Leviton Manufacturing, Inc: www.leviton.com .

D. Pass & Seymour/Legrand: www.passandseymour.com .

2.02 WALL SWITCHES

A. Wall Switches: General Duty, AC only general-use snap switch, complying with NEMA WD 6 and WD 1.
   1. Body and Handle: White plastic with toggle handle.
   2. Ratings:
      a. Voltage: 120 volts, AC.
      b. Current: 15 amperes.

B. Switch Types: Single pole.
   1. Product: P&S/LeGrand 660, Leviton, Cooper.

C. Three-way Switches:
   1. Product: P&S/LeGrand 663, Leviton, Cooper.

2.03 RECEPTACLES

A. Receptacles: General duty, complying with NEMA WD 6 and WD 1.
   1. Device Body: White plastic.
   2. Configuration: NEMA WD 6, type as specified and indicated.

B. Convenience Receptacles: Type 5-15R, 5-20R.

C. Duplex Convenience Receptacles.
   1. 15A - Product: P&S/LeGrand BR15, Leviton, Cooper.
   2. 20A - Product: P&S/LeGrand BR20, Leviton, Cooper.

D. Tamper-Resistant Receptacles: Listed per NEC 406.11.
   1. 15A - Product: P & S/LeGrand TR3232, Leviton, Cooper.

E. GFCI Receptacles: Convenience receptacle with integral ground fault circuit interrupter to meet regulatory requirements.
   1. Product: P&S 2095.

F. Tamper-Resistant GFCI Receptacles: Listed per NEC 406.11.
   1. Product: 15A - P&S/LeGrand TR5262, Leviton, Cooper.
   2. Product: 20A - P&S/LeGrand TR5362, Leviton, Cooper.

2.04 WALL PLATES

A. Decorative Cover Plates: P & S White Nylon, smooth, unbreakable plastic.

B. Weatherproof Cover Plates: Gasketed cast metal with gasketed device cover, weatherproof with plug and cord attached.
   1. Product: T & B "Codekeeper" series.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that outlet boxes are installed at proper height.

B. Verify that wall openings are neatly cut and will be completely covered by wall plates.

C. Verify that floor boxes are adjusted properly.

D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.

3.02 PREPARATION

A. Provide extension rings to bring outlet boxes flush with finished surface.

B. Clean debris from outlet boxes.

3.03 INSTALLATION

A. The approximate locations of outlets are indicated on the Drawings. However, it is the responsibility of the Contractor to check the installations of other trades before roughing in the electrical conduits and boxes. The Contractor shall examine the drawings of other trades and all shop drawings supplied during construction and coordinate the installation of electrical outlets with the work indicated on these drawings.

B. No electrical outlets shall be located in an inaccessible location or in a location where the installation of other trades or equipment shall interfere with its use. Any electrical outlet so located shall be relocated promptly by the Contractor at no additional cost to the Owner.

C. Note height of counters, equipment, shelving, etc., provided by others before setting outlet boxes for receptacles or any equipment. Check all Architectural Drawings for door swings, counters, etc. Outlets for equipment shall not be set until shop drawings are approved for equipment and/or definite requirements are known.

D. Install securely, in a neat and workmanlike manner, as specified in NECA 1.

E. Install devices plumb and level.

F. Install switches with OFF position down.

G. Install receptacles with grounding pole on bottom.

H. Connect wiring device grounding terminal to branch circuit equipment grounding conductor.

I. Install decorative plates on switch, receptacle, and blank outlets in finished areas.

J. Connect wiring devices by wrapping conductor around screw terminal.

K. Install galvanized steel or non-metallic plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface mounted outlets.

3.04 INTERFACE WITH OTHER PRODUCTS

A. Coordinate locations of outlet boxes provided under Section 26 0537 to obtain mounting heights specified.

B. Install wall switch 48 inches to center above finished floor.

C. Install convenience receptacle 18 inches to center above finished floor.

D. Install convenience receptacle 6 inches to center above counter or as required to clear backsplash.

E. Install telephone jack 18 inches to center above finished floor.

F. Install telephone jack for wall telephone at 48 inches above finished floor.

3.05 FIELD QUALITY CONTROL

A. Perform field inspection, testing, and adjusting in accordance with Section 01 4000.

B. Inspect each wiring device for defects.

C. Operate each wall switch with circuit energized and verify proper operation.

D. Verify that each receptacle device is energized.

E. Test each receptacle device for proper polarity.

F. Test each GFCI receptacle device for proper operation.

3.06 ADJUSTING

A. Adjust devices and wall plates to be flush and level.

3.07 CLEANING

A. Clean exposed surfaces to remove splatters and restore finish.

END OF SECTION

SECTION 26 2416 – PANELBOARDS

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Load centers.

1.02 RELATED REQUIREMENTS

A. Section 26 0526 - Grounding and Bonding for Electrical Systems.

B. Section 26 0553 - Identification for Electrical Systems.

1.03 REFERENCE STANDARDS

A. NECA 1 - Standard Practices for Good Workmanship in Electrical Contracting; National Electrical Contractors Association; 2006.

B. NEMA AB 1 - Molded Case Circuit Breakers and Molded Case Switches; National Electrical Manufacturers Association; 1993.

C. NEMA PB 1 - Panelboards; National Electrical Manufacturers Association; 2006.

D. NEMA PB 1.1 - General Instructions for Proper Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less; National Electrical Manufacturers Association; 2007.

E. NFPA 70 - National Electrical Code; National Fire Protection Association; 2008.

1.04 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.

B. Products: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Eaton Electrical/Cutler-Hammer: www.eatonelectrical.com .

B. GE Industrial: www.geindustrial.com .

C. Square D: www.squared.com .

D. Siemens: www.sea.siemens.com/power/default.html .

2.02 LOAD CENTERS

A. Description: Circuit breaker load center, with bus ratings as indicated.

B. Minimum Integrated Short Circuit Rating: 10,000 amperes rms symmetrical.

C. Molded Case Circuit Breakers: Plug-on type thermal magnetic trip circuit breakers, with common trip handle for all poles; UL listed.
   1. Type SWD for lighting circuits.
   2. Arc fault interrupter circuit breakers where required by the NEC.
   3. Do not use tandem circuit breakers.

D. Enclosure: General Purpose.

E. Box: Surface type with door, and pull ring and latch on door. Finish in manufacturer's standard gray enamel.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install panelboards in accordance with NEMA PB 1.1 and NECA 1.

B. Install panelboards plumb. Install recessed panelboards flush with wall finishes.

C. Height: 6 feet to top of panelboard; install panelboards taller than 6 feet with bottom no more than 4 inches above floor.

D. Provide filler plates for unused spaces in panelboards.

E. Provide typed or neatly handwritten circuit directory for each branch circuit panelboard. Revise directory to reflect circuiting changes.

F. Ground and bond panelboard enclosure according to Section 26 0526.

3.02 ADJUSTING

A. Measure steady state load currents at each panelboard feeder; rearrange circuits in the panelboard to balance the phase loads to within 20 percent of each other. Maintain proper phasing for multi-wire branch circuits.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Lamps.

1.02 REFERENCE STANDARDS

A. ANSI C82.1 - American National Standard for Lamp Ballast - Line Frequency Fluorescent Lamp Ballast; 2004.

B. NECA/IESNA 500 - Standard for Installing Indoor Commercial Lighting Systems; National Electrical Contractors Association; 2006.

C. NFPA 70 - National Electrical Code; National Fire Protection Association; 2008.

1.03 QUALITY ASSURANCE

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS FOR INTERIOR LIGHTING FIXTURES

A. Provide products that comply with requirements of NFPA 70 and NFPA 101.

B. Provide products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

C. Provide accessories and fittings as recommended by manufacturer to properly and completely install and wire fixtures.

D. Electrical Characteristics: 120 volts, 60 Hz, unless otherwise indicated.

E. Lamps: Contractor shall furnish and install permanent lamps and replace burned out lamps immediately prior to Substantial Completion. All interior bulbs to be compact fluorescent type.

2.02 FIXTURE TYPES

A. Furnish products as indicated in Schedule included at the end of this section.

2.03 LAMPS

A. Lamp Types: As specified for each fixture.

B. Fluorescent Lamps:
   1. Product: compact fluorescent, refer to light fixture schedule at the end of this section for lamp schedule.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install fixtures securely, in a neat and workmanlike manner, as specified in NECA 500 (commercial lighting).

B. Surface Mounted Fixtures: Install plumb and square and aligned with building lines and with each other; secure to prevent movement.

C. Wall Mounted Fixtures: Install at height as indicated on the drawings.

D. Install accessories furnished with each fixture.

E. Make wiring connections to branch circuit using building wire with insulation suitable for temperature conditions within fixture; use flexible conduit.

F. Bond products and metal accessories to branch circuit equipment grounding conductor.

G. Interface with air handling accessories furnished and installed under Section 23 3600.

3.02 FIELD QUALITY CONTROL

A. Operate each fixture after installation and connection. Inspect for proper connection and operation.

3.03 CLEANING

A. Clean electrical parts to remove conductive and deleterious materials.

B. Remove dirt and debris from enclosures.

C. Clean photometric control surfaces as recommended by manufacturer.

D. Clean finishes and touch up damage.

3.04 CLOSEOUT ACTIVITIES

A. Replace failed lamps immediately prior to Substantial Completion (all bulbs to be CFL).

3.05 SCHEDULE - See Below

Manufacturer for all lighting: Patriot Lighting & Heath / Zenith

Bedrooms: 2-PK 3-light 15” cc51615bn	(Bulb 2)
Closets: 2-PK 1-light 11” cc51611bn	(Bulb 2)
Dining Room: Saturn 5-light CH29905bn	(Bulb 1)
Kitchen (over sink): 2-PK 2-light 13” cc51613bn	(Bulb 2)
Bathroom (vanity): Sevilla 5-light vl52375ch	(Bulb 1)
Hall/Foyer: 2-PK 2-light 13” cc51613bn	(Bulb 2)
Garage interior (2 lights minimum) / Mechanical Room: Ceramic Base	(Bulb 3)
Laundry Room: 2-PK 3-light 15” cc51615bn	(Bulb 2)
Exterior Wall Mount: Patriot Dual Head Motion E9201WH (White)	LED
Exterior Surface Mount: Heath Zenith SL-4305-WH (White)	(Bulb 3)

*All quantities per plans. Garage interior to receive two light fixtures regardless of plan quantity. All bulbs to be provided/installed by Contractor per schedule below.

Bulb / Lamp Schedule:

Bulb 1: 15w 3500k Globe Standard Base
Bulb 2: 13w 2700k Twist Standard Base
Bulb 3: 23w 2700k Twist Standard Base

END OF SECTION

SECTION 27 1010 – COMMUNICATIONS AND DATA DEVICES

General Building Construction

1.01 SECTION INCLUDES

A. Communication and data processing structured cabling systems, enclosures and accessories.

B. Audio/visual connector systems, enclosures and accessories.

1.02 RELATED SECTIONS

A. Section 16100 - Basic Electrical Materials and Methods.

1.03 REFERENCES

A. National Fire Protection Association, 1nc., NFPA 70: National Electric Code (NEC), 2005.
1. NEC Article 250: Grounding and Bonding.
2. NEC Article 300: Wiring Methods.
3. NEC Article 388: Surface Non-Metallic Raceways.
4. NEC Article 800: Communications Circuits.
5. NEC Article 725: Remote Control, Signaling, and Power-Limited Circuits.

B. Underwriter's Laboratory, Inc. (UL).
1. UL-5C: Standard for Surface Raceways and Fittings for Use with Data, Signal, and Control Circuits.
2. UL-50: Standard for Enclosures for Electrical Equipment.
3. UL-94-V0: Tests for Flammability of Plastic Materials.
4. UL1863: Standard for Safety - Communications Circuit Accessories, 4th Ed, 2004.

C. National Electrical Manufacturer's Association (NEMA).
1. ANSI/NEMA WD-6-2002: Wiring Devices - Dimensional Requirements.
2. NEMA 250-2003: Enclosures for Electrical Equipment.

D. ANSI-J-STD-607A, Commercial Building Grounding and Bonding Requirements for Telecommunications, 2002.

E. Federal Communications Commission (FCC), Code of Federal Regulations, Part 68: Connection of Terminal Equipment to the Telephone Network, 1998.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Minimum of 2 years experience installing products specified in this Section.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

1.06 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturer: Leviton

B. Substitutions: Not permitted.

C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.02 CABINET, RACKS, FRAMES AND ENCLOSURES

A. Cabinets: Size and components
1. Leviton 14” Structured Media Enclosure model: 47605-140 with Cover. Contractor to leave cover loose for inspection until punchlist has been completed.
2. Leviton Structured Media Basic Telephone and Video Panel model: 47606-BTV

2.03 COPPER HORIZONTAL CABLING

A. Category 5e Cable Performance and Design Requirements:
1. Cable shall exceed Category 5e transmission requirements specified in ANSI/TIA/EIA-568-B.2, and shall be tested to 300 MHz.
2. Cable shall exceed IEEE 802.3af DTE Power specification to 4 times the rated current limits with no degradation of performance or materials.
3. Cable shall be error free Gigabit Ethernet performance to IEEE 802.3ab.
4. Cable shall meet or exceed the 4-connector channel performance requirements of Category 5e, per the ANSI/TIA/EIA-568-B.2 standard.
5. Product: Construction shall be four twisted pairs of 24 AWG insulated solid conductors, with a ripcord, surrounded by a tight outer jacket. UTP Standard Riser, Category 5e as manufactured by Hubbell-Premise, Inc.

B. Cabling Requirements:
1. Telephone Cable Wiring: 24/4 CAT5E
2. Television Cable / Satelite Wiring: RG6

2.04 FACEPLATES AND CONNECTORS

A. Faceplates
1. Phone Jack: Leviton model: R02-40539-PMW or Equal Color: White
2. Phone Jack for kitchen wall mounted phone: Leviton model: 40914-W or Equal Color: White
3. CATV Wall Jack: Leviton model: R22-40539-OMW or Equal Color: White

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates and supporting structures have been properly prepared.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Phone: Contractor shall terminate all phone connections to structured media panel, and shall run 1 feed to the exterior for phone company installation to D-Mark Box. Seal any penetrations.

C. TV / Satellite Contractor shall terminate wiring accordingly:

D**. Multifamily Projects: Two satellite feeds through roof per unit or as directed by Project Management. Feeds through roof shall be in a gooseneck conduit enclosure with conduit boot to ensure leak free performance. Cables are to extend 10’ from the gooseneck and be labeled for the unit serviced. Tie cables individually in a coil and lay loose on roof. Contractor shall coordinate with CMD Project Management before installation to ensure proper orientation.**

E. **Single Family Projects: Two satellite feeds terminated to the exterior. Contractor shall coordinate with CMD Project Management for determination if feeds will be through exterior wall, or through roof. Contractor shall provide gooseneck if location is determined through roof.**

F. Contractor shall provide the following TV / Phone Basic system:

Bedrooms: 1 phone, 1 TV (per drawing location)

Living / Family Rooms: Dual phone/TV (per drawing location)

Kitchen: 1 wall mounted phone @ 54" a.f.f. (per drawing location)

Structured Media panel shall be located per drawings. If location is not indicated, coordinate location with CMD Project Management.

Label Structured Media Cabinet identifying location for exterior TV / Satellite location.

3.03 QUALITY CONTROL - COMMUNICATION CABINET TESTING

A. Verify the cabinet wall location according to contract drawings.

B. Verify grounding and bonding to applicable standards and codes.

3.04 QUALITY CONTROL - PATCH PANEL TESTING

A. Verify the cabinet wall location according to contract drawings.

3.05 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

C. Leave low voltage panel cover off at the time of punchlist inspection for verification of connection terminations.

END OF SECTION

SECTION 28 3100 – FIRE DETECTION AND ALARM

General Building Construction

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Smoke and CO alarms for Residential Units.

1.02 RELATED REQUIREMENTS

A. Section 07 8400 - Firestopping: Materials and methods for work to be performed by this installer.

1.03 REFERENCE STANDARDS

A. IEEE C62.41 - IEEE Recommended Practice on Surge Voltages in Low-Voltage Power Circuits; 1991 (R1995).

B. NFPA 70 - National Electrical Code; 2008.

C. NFPA 72 - National Fire Alarm Code; 2007.

D. NFPA 101 - Code for Safety to Life from Fire in Buildings and Structures; 2006.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Firm with minimum 3 years documented experience installing fire alarm systems of the specified type and providing contract maintenance service as a regular part of their business.

1.05 WARRANTY

A. Provide installer's warranty that the installation is free from defects and will remain so for 1 year after date of Substantial Completion.

PART 2 PRODUCTS

2.01 RESIDENTIAL SMOKE AND CARBON MONOXIDE ALARMS

A. The combination smoke and carbon monoxide alarm shall be a BRK Model SC9120B or approved equal and shall provide at a minimum the following features and functions:
   1. An ionization smoke sensing chamber and an electrochemical CO sensor.
   2. Powered by 120V AC, 60Hz and have a monitored 9V battery backup and a solid state piezo horn rated at 85dB at 10 ft. and shall be capable of self restoring.
   3. The unit shall perform self diagnostic tests and issue a malfunction warning (three chirps) if the unit malfunctions.
   4. A visual power-on indicator to confirm unit is receiving AC power or has switched to battery backup mode. Separate LED 's to indicate a smoke or CO alarm.
   5. The CO sensor is adjusted not to detect CO levels below 30 PPM and will no alarm when exposed to constant levels of 30 PPM for 30 days. It will alarm at the following levels: 400 PPM CO between 4 and 15 minutes, 150 PPM CO between 10 and 50 minutes and 70 PPM CO between 60 and 240 minutes.
   6. A test/silence button to check all alarm functions and to silence any nuisance alarms. In addition, the unit shall have a low battery silence feature to quiet the low battery chirp for up to eight hours.
   7. Two Locking features - tamper resistant locking pins that lock battery drawer and/or alarm to mounting bracket.
   8. The unit shall be capable of operating between 40°F (4°C) and 100°F (38°C) and relative humidity between 10% and 95%.
   9. The unit shall have a plug in connector and be capable of interconnection of up to 18 alarms, 12 of which can be smoke alarms.
   10. The unit shall at a minimum meet the requirements of UL217 and UL2034, CSFM, NFPA 72, NFPA 720, and the ICC.

B. The smoke alarm shall be BRK Model 9120B or approved equal and shall provide, at a minimum, the following features and functions:
   1. A dual ionization smoke sensing chamber.
   2. The unit shall be capable of self restoring.
   3. A screened sensing chamber to prevent entry of small insects thereby reducing the probability of unwanted nuisance alarms.
   4. Powered by 120V AC, 60Hz and have a monitored 9V battery backup.
   5. A visual LED (green) power-on indicator to confirm unit is receiving power. A visual LED (red) indicator to confirm unit has switched to battery backup mode or is in alarm.
   6. A single button test/silence feature. Test button should check all alarm functions by simulating a smoke condition, causing the unit to alarm. The silence feature to temporarily silence unwanted alarms.
   7. A solid state piezo horn rated at 85dB minimum at 10 ft.
   8. The unit shall be capable of operating between 40°F (4°C) and 100°F (38°C) and relative humidity between 10% and 90%.
   9. The unit shall center mount to any standard electrical junction box up to 4 inches octagonal without screw removal and shall be listed for wall or ceiling mounting.
   10. The unit shall have a locking mechanism to deter battery removal and /or theft of the unit.
   11. The unit shall have a gasketless base for easy installation and be capable of keeping alarm secure over a wide rotation range to allow for true alarm alignment.
   12. The unit shall have a plug in connector and be capable of interconnection of up to 18 alarms, 12 of which can be smoke alarms.
   13. A dust cover shall be provided to keep alarm clean during construction.
   14. The unit shall at a minimum meet the requirements of UL217, CSFM, NFPA 72, NFPA 101, and ICC.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with applicable codes, NFPA 72, NFPA 70, and the contract documents.

B. Conceal all wiring, conduit, boxes, and supports where installed in finished areas.

C. Obtain Owner's approval of locations of devices, before installation.

D. Install instruction cards and labels.

3.02 INSPECTION AND TESTING FOR COMPLETION

A. Perform inspection and testing in accordance with NFPA 72 and requirements of local authorities; document each inspection and test.

B. Correct defective work, adjust for proper operation, and retest until entire system complies with contract documents.

END OF SECTION

SECTION 31 0000 – ELEVATIONS/HOUSE SETTING

General Building Construction

1. SITE ELEVATIONS
    i. The contractor is to follow these procedures for setting site elevations:
        1. Contact CMD Project Management staff to schedule on-site meeting.
        2. Prior to meeting, have laser level set-up and front house corners set (if applicable).
    ii. CMD Project Management staff will set a benchmark, which will be used for building and earthwork.

2. HOUSE LOCATION
    i. The contractor will set up the front corners of the house pad using construction stakes.
        1. House must be set back at least 50’ from closest edge of road.
    ii. The CMD Project Management staff must approve the house location prior to excavating.

* Check bid posting, elevations and house location may have already been set.

END OF SECTION

SECTION 31 1000 – SITE CLEARING

General Building Construction

1. SITE CLEARING

a. Contractor may be required to conduct site clearing, see bid posting.
b. If site clearing is mandated, contractors must adhere to the following:
    i. Protect and maintain benchmarks and survey points.
    ii. Install erosion and sedimentation control measures before clearing the site.
        1. Silt fences must be installed in the front right-away, near any drainage-ways, and wet lands.
        2. Protect established trees not being removed.
        3. Cut trees 6” diameter or larger into 8’6” sections and pile neatly where directed by Project Coordinator for DNR removal from site.
        4. Contractor shall be responsible for stump removal.
c. Protect site improvements to remain from damage. Restore any damaged item.
d. CMD Project Mgmt staff will indicate any trees to be cleared.
    i. Approval must be received from the CMD Project Mgmt staff before cutting any tree.
e. Locate, identify, disconnect, and seal/cap off utilities indicated to be removed.
f. Dispose of waste materials (trash, debris, excess top soil) off of the property. Burning waste materials on-site is not permitted.

END OF SECTION

SECTION 31 2000 – EARTH MOVING

General Building Construction

1. EARTHWORK

a. Contractors conducting earthwork must adhere to the following:
   i. Install erosion and sedimentation control measures.
      1. Silt fences must be installed in the front right-away, near any drainage-ways, and wet lands.
   ii. Work will stop completely if site excavation reveals human remains or Native American artifacts. CMD Project Mgmt staff must be immediately notified.
   iii. Contractor will use only satisfactory soils, including: Soil Classification Groups GW, GP, GM, SW, SP, and SM. All need to be free of rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, and vegetation.
   iv. Contractor will use only satisfactory drainage fill. Drainage fill will be washed mixture of crushed stone/gravel or uncrushed gravel (ASTM D 448, Size 57).
   v. In clay soil conditions, contractor shall excavate house foundation interior to footing depth and in-fill with satisfactory fill material. This condition will be identified at the pre-bid site meeting.

END OF SECTION

SECTION 31 2200 – GRADING AND FILL

General Building Construction

1. GRADING AND FILL

a. When grading residential homes sites, the finished grade slope must be away from all buildings walls to a minimum of 6” of drop over 10’. Slope shall not exceed 12” in the first 10’.
b. Finished elevations (lawn) must be no closer than 6” to the building side. Any exception must be elevated by the Building Official and would need to be relocated to a unique situation in order to be approved.
c. Site fill other than required materials for concrete and drain tile work must be consistent with the approved soil types and less than two inches rock size (minus two) for materials placed within the top 12” of finished grade. This applies to import fill and excavated fill from the site. Larger rocks may be used as fill but must no be placed in the top 12”.
d. It is the contractors’ responsibility to properly assess the overall project to determine all soils or fill quantities necessary to complete the project prior to submitting bids. This includes quantities that may need to be removed and hauled away rather than spread on site.

2. RADON MITIGATION

a. install a 4-inch layer of clean gravel gas permeable layer underneath the lowest level floor slab
b. install a plastic sheeting on top of the gas permeable layer to help prevent the soil gas from entering the home
c. seal and caulk all openings in the concrete foundation floor, as soon as the concrete floor cures and install a vent pipe from the gas permeable layer to the roof to vent radon above the house
d. install an electrical receptacle box near the vent pipe in the attic space for future installation of an in-line radon fan.
e. see link for further info: http://www.epa.gov/radon/pdfs/buildradonout.pdf

* See bid posting for any additional requirements.

END OF SECTION

SECTION 32 9000 – PLANTING

General Building Construction

1. LAWNS AND GRASSES

i. **UNLESS OTHERWISE NOTED**, the Contractor will **not** be required to establish lawns. If the Contractor is asked to perform work under this section, it will be as follows:

1. Contractor to use sod up to 10' around the entire perimeter of the house.
    a. Sod to be fresh, clean, new crop. Quality is to be approved by Project Coordinator.
2. Contractor to use grass seed and mulch around the remaining yard (up to 100' around the building).
    a. Grass seed to be fresh, clean, dry, new-crop seed. Quality is to be approved by Project Coordinator
    b. Verify appropriate seed mixture for soil type, shade, and site condition.
    c. Contractor to water, fertilize, weed, mow, trim, and establish lawns for a minimum of 60 days after sod is layer/seed is planted.

ii. Contractors required to use the following soils and amendments:

3. Topsoil: ASTM D 5268, free of stones 1" or larger.
4. Lime: ASTM C 602, Class T, agricultural limestone.
5. Peat Humus: Finley dived or granular texture, consisting of partially decomposed moss peat, peat humus, or reed-sedge peat.
6. Commercial Fertilizer: Commercial-grade complete fertilizer.
7. Straw Mulch: Clean, mildew and seed free salt hay or threshed straw.

END OF SECTION

SECTION 33 2000 – WELLS

General Building Construction

PART 1 - GENERAL

SUMMARY

A. This section includes the installation of submersible pumps, drop pipe, electrical cable and controls, pressure tanks, service lines, and pitless units from the well to the household.

RELATED WORK

A. I.H.S Section 01119 – Revisions to Standard Specifications
B. I.H.S Section 02315 – Excavation, Trenching and Backfill
C. I.H.S Section 02525 – Individual Well Drilling

REFERENCES

A. ASTM A 53 – Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
B. ASTM D 1785 – Polyvinyl Chloride (PVC) Plastic Pipe, Schedules 40, 80, and 120
C. AWWA C901 – Polyethylene (PE) Pressure Pipe and Tubing, 1/2 Inch Through 3 Inch, for Water Service
D. National Electric Code (NEC)

PART 2 - PRODUCTS

SUBMERSIBLE PUMPS

A. Submersible pumps shall be sealed and constructed of all corrosion resistant materials including all exposed parts of both the pump and motor.
    1. Impellers and diffusers shall be constructed of bronze, stainless steel or plastic.
    2. Pump shaft shall be hexagonal or splined stainless steel and connected to the motor shaft with a splined coupling.
    3. Pump casing shall be bronze, brass or stainless steel.
    4. Motor adapter and pump discharge head shall be bronze, brass or other corrosion resistant material.
    5. Motor casing and end caps shall be stainless steel, brass, bronze or other corrosion resistant material.
B. Pump Requirements:
    1. Pump Design for 3 Wire Installation unless specified otherwise in Section 01119
    2. High Torque Motor
    3. 230 Volt Operation
    4. Overload Protection
    5. Solid State Starting Switch
    6. NEMA Standard for Universal Motor Replacement
    7. 1/3 horsepower pumps shall have a pumping capacity of 8 gpm against a total head of 150 feet.
    8. 1/2 horsepower pumps shall have a pumping capacity of 8 gpm against a total head of 200 feet.
    9. 3/4 horsepower pumps shall have a pumping capacity of 8 gpm against a total head of 280 feet.
    10. A check valve shall be installed in the pump.
C. The pump to be installed will be sized by the engineer based on test pump data and well log.
D. Lightning protection shall be built into the pump motor or a submittal for the arrestor and installation method shall be provided.

SUBMERSIBLE PUMP CABLE

A. Use RHW insulated and jacketed, U.L. approved, rated at 600 volts, manufactured in accordance with the NEC and be a minimum size of No. 12.
    1. Submersible pump cable shall be Essex CPE, MilSpec Milpreme double insulated or approved equal.

2. TW insulated and jacketed pump cable meeting the above requirements such as Centerline HILO Supreme or approved equal may be substituted for the RHW standard.

B. Allowable voltage drop through the cable, from the electrical service to the pump motor, shall be in accordance with pump manufacturer's recommendation.

C. Waterproof splice shall be in accordance with pump manufacturer's recommendation.

DROP PIPE AND FITTINGS

A. Steel Drop Pipe
   1. Conform to ASTM A 53
   2. Pipe shall be Schedule 40 galvanized steel with a nominal size of 1-inch.
   3. Galvanized steel couplings shall be used to connect pipe sections.

B. PVC Drop Pipe
   1. Conform to ASTM D 1785
   2. Pipe shall be threaded Schedule 80 with a nominal size of 1-inch.
   3. Couplings shall be machined from extruded, not molded, PVC.

C. PE Drop Pipe
   1. Conform to AWWA C901
   2. Pipe shall be ultra-high molecular weight, IDR 7, 1-inch IPS with a minimum pressure rating of 160 psi.
   3. Torque arrestor shall be equal to Merril No. STA-48.
   4. Cable protector centering device shall be equal to Merril No. CG-46.

D. Check valves shall be equal to Clayton Mark No. 6300.

E. Flow control valves shall be equal to an Eaton Dole Valve, G series flow regulator.

WATER SERVICE LINE

A. Conform to AWWA C901.

B. Ultra-high molecular weight, PE 3406 or 3408, IDR of 7 or 9 with a minimum pressure rating of 160 psi.

COPPER TUBING

A. 3/4-inch seamless, thick-wall type L copper tubing with a wall thickness of 0.045 inches for freezeless risers.

PRESSURE TANK

A. Supply pressure tanks pre-charged in accordance with the manufacturers' recommendations, for a 30 to 50 psi operating range, having a sealed container or diaphragm that prevents contact of water with air.

B. Tanks shall be lined with a noncorrosive material that does not impart taste or odor to the water and provide a minimum of 8.9 useable gallons of draw down.

C. Tanks shall be equal to Well-X-Trol Model WX-203 or Champion Model CM-8003. Well-X-Trol Model WX-202 may be used where space is limited. Approve with Project Coordinator before proceeding.

D. Pressure switches shall be equal to Square D Model FSG2.

E. Supply Water Meter.

WATER METERS

A. Meter
   1. 5/8" x ¾" disc type water meter, bronze main case, cast iron bottom plate, conforming to AWWA C700-90.
   2. Roll sealed register with low flow indicator.
   3. Register Capacity: 10 U.S. gallons per revolution; 10,000,000 gallons total.
   4. Operating Pressure: 150 psi.

B. Touch-type remote reading system.
   1. Programmable, oil filled encoder register.
   2. ABS remote receptacle.
   3. Compatible with water meter.

C. Tamper-proof features provided for the meter bottom, meter register, and remote receptacle.
D. Manufacturers
    1. Neptune model T-10 with Pro-Read Absolute Encoder Register.
    2. Approved equivalent

BURIED CABLE

A. Underground wiring shall be type UF for direct burial with a minimum size of No. 12.
B. Size underground wiring to limit the total voltage drop from the electrical service to the pump motor in accordance with manufacturer's recommendations.

FREEZELESS RISERS

A. No galvanized fittings are allowed when connecting the freezeless riser.
B. Risers must be provided with a swing joint and be equal to True–Temp Positive Purge Model 7PPDB with copper riser pipe or Thermaline model 15.
C. Freezeless riser manufacturer shall supply the thermostatically controlled heat tape unless riser shut off valve is installed above floor grade.
D. Use compression type or an adapter with union connections for copper pipe.
    1. Acceptable manufacturers are Hays Manufacturing Company, A.Y. McDonald, Mueller Company or Ford Meter.

PITLESS ADAPTER AND CAP

A. Steel Cased Wells: Weld-on type, equal to Maass Model J, with 1-inch size water outlet.
B. PVC Cased Wells: Equal to Safe-T-Seal, with a 1-inch water outlet.
C. Cap
    1. Vented, weather and vermin proof cap with gasket. All nuts and bolts shall be made of non-corrodible material.
    2. Screened downward facing vent not less than ¼-inch in diameter.
        a. Screen shall be made of non-corrodible material.

PART 3 - EXECUTION

PITLESS ADAPTER

A. Steel Cased Wells
    1. Weld onto casing 8 feet below grade.
    2. Seal with neoprene o-ring.
    3. Conform to state and local codes.

B. PVC Cased Wells
    1. Install onto casing 8 feet below grade.
    2. Connection shall be watertight.

WELL CAP

A. Install well cap tightly to top of well casing to provide sanitary seal.
B. Seal any unscreened openings until conduits are connected.

PUMP AND DROP PIPE

A. Install drop pipe and submersible pump as directed by the Project Coordinator.
    1. If a change in pump size is required, the Contractor and contracting officer shall negotiate a new pump price.
B. Install a check valve in drop pipe greater than 100 feet as directed by Project Coordinator.
C. Use tape or approved joint compound on all threaded connections.
D. The depth limitation for using Schedule 80 PVC is 400 feet.
E. PE Pipe
    1. Install PE pipe in one single length (no couplings) from the pitless unit to the submersible pump.
    2. Install an approved torque arrestor at the pump.

3. Install cable protector devices every 50 feet above the pump to center the PE pipe in the casing.
4. The depth limitation for PE pipe is 300 feet and the maximum pump size is 1 horsepower.

F. If required by the Project Coordinator, install flow control valve between the pitless spool and the drop pipe unless specified otherwise in Section 01119.

SUBMERSIBLE CABLE

A. Securely attach submersible pump cable to the drop pipe every 10 feet, using tape or other method approved by the Project Coordinator.
B. Provide an extra 12 inches of cable under the well cap.
C. The only splice allowed in the pump cable will be at the motor and the splices shall be made using taped, mechanical or resin splices.
D. Test cables for leakage or shorts using an ohmmeter or megger.

TRENCH EXCAVATION AND BACKFILLING

A. Refer to Section 02315 for excavation and backfilling requirements.

WATER SERVICE LINE

A. Bury water service lines 8 feet deep unless otherwise noted in section 01119.
B. Connect water service line to the pitless adapter with a brass or bronze swing joint connection as shown on the plans.
C. If the water from the house has been installed, connect the water line to the stubbed out line from the house, otherwise extend and connect into the plumbing for the hydro pneumatic tank.
D. Make connections with brass insert adapters and two stainless steel hose clamps or non-flare brass compression fittings.
E. Where designated by the Project Coordinator, terminate the water service line 5 feet from the house and cap.
    1. Mark the end with a 2 by 4-inch stake painted blue extending 1-foot above grade and 4 feet below grade.

UNDERGROUND UTILITY CONFLICTS

A. Refer to I.H.S Section 02315.

BURIED CABLE

A. Install underground cable in accordance with local utility regulations, the NEC, applicable state and local codes and the attached drawings.
B. No underground splices are allowed.
C. Control power to each unit with a fused disconnect switch or manually reset circuit breakers placed in the home, where possible, or otherwise on a power pole near the well.
D. Provide disconnecting means located in site of controller location.
E. Connect underground wiring to the pump cable under the well cap. Provide an extra 12 inches of slack cable under the well cap.
F. Securely attach the ground wire to the casing with a threaded metal screw tapped into or drilled through the casing.
G. Ground the submersible pump and well casing to the panel in accordance with the NEC.
H. Install wiring in a rigid galvanized steel or Schedule 80 PVC conduit at the electrical entrance and the wellhead to 2 feet below ground.
    1. Conduit end shall be smooth and free of sharp edges
    2. Snuggly fit the conduit end into the well cap. Maintain sanitary seal.
    3. Bushings are required as shown on the detailed drawing.
I. Provide sufficient slack in the wire to prevent separation of the cable.
J. Underground wire may be placed in the same trench and located at the same depth as the water service line.
K. For trailers and houses without basements, install underground wire in rigid conduit when placed below the structure.

FREEZELESS RISER

A. Install freeze less risers below each mobile home and other homes where required at the locations established by the Project Coordinator.
B. Install directly below the point of connection to the house plumbing, whenever possible.
C. Set risers vertical except for mobile homes.

Set mobile home risers at an angle that will allow for the removal of the interior components of the riser without moving the mobile home or excavating the freeze less riser.

For homes requiring freeze less risers install copper tubing from the riser to the house plumbing.

At 90 degree bends install elbows or make long radius bends.

D. No kinks in the copper tubing will be permitted.
E. Make solder joints with lead free solder.
F. Risers with shut off valves installed above floor grade shall be equipped with non thermostatically controlled heat tape.

BACTERIOLOGICAL SAMPLE

A. Provide a coliform bacteria, nitrate and arsenic sampling for water system after system has been installed and flushed, which they will then submit to a certified laboraty for analysis.
B. No payment will be made for water system until satisfactory coliform bacteria, nitrate and arsenic sample results have been received by the Owner.

PRESSURE TANK AND FITTINGS

A. Place tanks inside home as located by the Project Coordinator and the homeowner.
B. Install tanks as shown on the attached drawings, including pressure gauge, pressure switch, brass tank cross, hose bibb, gate valve and all miscellaneous fittings and adapters.
C. Use leveling blocks or hangers when installing tanks.
D. Connect tank to existing plumbing if available.
E. Install tank so that it can be connected to house plumbing.
F. For tanks with a steel inlet fitting use a dielectric union, installed between the inlet pipe and the brass cross.
G. Install tank and cross such that the tank can be easily removed.
H. Install pressure relief valve if required.
I. Install in-line water meter after exterior supply feed. This is to be utilized by the Owner for septic system monitoring.

WELL SEALING

b. Abandon unused or contaminated wells where directed by the Project Coordinator.
c. Wells shall be sealed in accordance with MN Chapter 4725.
5. Well contractor shall complete and submit a Notification of Well Sealing and Well Sealing Record to the Minnesota Department of Health.

AS-BUILTS

A. Provide as-built information on each system. Include well log, and water testing reports to the Owner. As-builts shall include the following information:
1. Well location with setbacks shown to structures, property boundaries, road right-of-way and septic system;
2. Well depth;
3. Pump Manufacturer and Model.

END OF SECTION

SECTION 33 1000 – WATER UTILITIES

General Building Construction

PART 1
SUMMARY

A. This section includes the installation of water service lines complete with corporation stops, curb stops, curb boxes, freezeless risers and other appurtenances for community water systems.

RELATED WORK (as applicable)

A. I.H.S. Section 01780 – Closeout Submittals
B. I.H.S. Section 02315 – Excavation, Trenching and Backfill
C. I.H.S Section 02510 – Water Distribution

REFERENCES

A. AWWA C901 – Polyethylene (PE) Pressure Pipe and Tubing, 1/2 Inch through 3 Inch, For Water Service.
B. ASTM B 88 – Standard Specification for Seamless Copper Water Tube.

SUBMITTALS

A. Water Service Line
B. Fittings
C. Corporation Stops
D. Saddles, Tees or Tapped Couplings
E. Curb Stops and Boxes with Stationary Rod
F. Freezeless Risers
G. Copper Tubing/Pipe
H. Water Testing Lab

ACCEPTANCE

A. Work covered by this section will not be accepted until satisfactory backfilling and testing is complete.

PART 2 - PRODUCTS

WATER SERVICE LINE AND APPURTENANCES

A. Polyethylene Pipe
    1. IPS or CTS size pipe with a minimum pressure rating of 160 psi. Pipe shall conform to AWWA C901.
    2. CTS size pipe: DR 9 or DR 7.
    3. IPS size pipe: IDR 7.
    4. High density, ultra high molecular weight polyethylene pipe compound PE-3408 or 3406.
    5. Stainless steel stiffeners on compression couplings made for DR 9 pipe.
    6. Approved manufacturers
        a. Driscopipe Ultra-Line
        b. Excel
        c. Approved equal
B. Saddles
    1. Stainless steel single bolt saddle clamp for use with PVC water main.
    2. 2-inch minimum bandwidth, with type 304 stainless steel hardware.
    3. 1-inch AWWA Taper threads.
    4. BUNA-N rubber gasket.
    5. Ford model FS101 or approved equal.

C. Corporation Stops
   1. Ballcorp type, brass corporation stop.
   2. AWWA Taper threaded inlet; Pack joint outlet
   3. ” size, or as indicated on the Bid Schedule
   4. Manufacturers
      a. IPS Plastic Pipe
         1) Ford model 1001-4
         2) A.Y. MacDonald model 4701B-33
         3) Approved equal
      b. CTS Plastic Pipe
         1) Ford model 1000-4
         2) A.Y. MacDonald model 4701B-22
         3) Approved equal

D. Curb Stops
   1. Brass Minneapolis pattern curb stops.
   2. Pack joint inlet and outlet.
   3. 1” size, or as indicated on Bid schedule.
   4. Manufacturers
      a. IPS Plastic Pipe
         1) Ford model B66-444M
         2) A.Y. MacDonald model 6104-33
         3) Approved equal
      b. CTS Plastic Pipe
         1) Ford model B44-444M
         2) A.Y. MacDonald model 6104-22
         3) Approved equal

E. Curb Boxes with Stationary Rod
   1. Cast iron Minneapolis pattern, two piece, curb stop with stationary rod.
   2. 8-foot minimum length.
   3. Plug style lid with pentagon bolt
   4. Manufacturers
      a. Ford model EM2-80-46-78R
      b. N.Y. MacDonald model 5610 with 5607L lid

WATER METERS

E. Meter
   5. 5/8” x ¾” disc type water meter, bronze main case, cast iron bottom plate, conforming to AWWA C700-90.
   6. Roll sealed register with low flow indicator.
   7. Register Capacity: 10 U.S. gallons per revolution; 10,000,000 gallons total.
   8. Operating Pressure: 150 psi.

F. Touch-type remote reading system.
   4. Programmable, oil filled encoder register.
   5. ABS remote receptacle.
   6. Compatible with water meter.

G. Tamper-proof features provided for the meter bottom, meter register, and remote receptacle.

H. Manufacturers
   1. Neptune model T-10 with Pro-Read Absolute Encoder Register.
   2. Approved equivalent

FREEZELESS RISERS AND FITTINGS

A. No galvanized fittings are allowed.
B. Provided with a swing joint and be equal to True–Temp Positive Purge Model 7PPDB with copper riser pipe or Thermaline model 15.
C. Non-thermostatically controlled heat tape supplied by freeze less riser manufacturer.
D. Copper tubing: ¾-inch seamless, thick-wall type L with a wall thickness of 0.045 inches

E. Compression type connections or adapter with union used for copper pipe equal to those manufactured by Hays Manufacturing Company, A.Y. McDonald, Mueller Company or Ford Meter Company.

PART 3 - EXECUTION

WATER SERVICE LINE AND APPURTENANCES

A. Install water service line of the size and material indicated on the Bid Schedule.
B. Install at the locations shown on the drawings or as directed by the Project Coordinator.

C. Refer to Section 02315 for excavation, trenching, backfilling, compaction, separation distance, and insulation requirements.
D. Install service line:
    1. From the main to a location into or near each home.
        a. Connect to the homes existing water stub out if provided outside the home.
        b. If sleeve provided, run water line through the sleeve and leave a minimum of 12-inches of piping in the home. Seal space between piping and sleeve to prevent groundwater from entering the home.
        c. If no stub-out is provided, cap service line and mark with stake.
    2. With a minimum bury depth of 8 feet.
    3. Splices are not allowed in the service line without the written permission of the Project Coordinator.
    4. Use compression couplings for all connections.
E. Install saddle at each corporation stop tapping location.
    1. All connections shall be live tapped through the corporation stop with an approved tapping machine, unless specified below.
    2. Dry taps are allowed only during new water main installation, before main disinfection.
F. Curb stops and boxes with stationary rod
    1. Set curb stops on a solid concrete block 4 inches thick by 8 inches wide by 16 inches long placed on undisturbed earth.
    2. Install stationary rod on curb stop.
    3. Set the top of curb boxes flush with finished grade elevation.
    4. Support curb box during the backfilling operation to prevent movement and maintain a vertical position.
    5. If service line not extended into home, protect outlet of curb stop using pipe wrap, plug, or other suitable method.

UTILITY CONFLICTS

A. Refer to I.H.S Section 02315.

FREEZELESS RISERS

A. Install freeze less risers below each mobile home and other homes where required at the locations established by the Project Coordinator.
B. Install directly below the point of connection to the house plumbing whenever possible.
C. Set risers vertical except for mobile homes.
    1. Set mobile home risers at an angle that will allow for the removal of the interior components of the riser without moving the mobile home or excavating the freeze less riser.
D. Install copper tubing from the riser to the house plumbing.
E. Install elbows or make long radius bends at 90-degree bends.
F. Kinks in the copper tubing are not allowed.
G. Solder joints with lead free solder.

TESTING

A. Turn on each corporation stop and apply main pressure to the service line in the presence of the IHS representative before backfilling.
    1. Option: If a new water main is pressure tested, test the water service lines at the same time and pressure as the water main.
B. Repair all visible leaks and retest the line until test is successfully completed at no cost to the owner.

AS-BUILTS

A. Provide as-built information on each system to include the following information:
    Swing tie measurements from:
        a. House to curb stop;
        b. Cleanouts.
    Drawing, as close to scale as possible, showing the location and layout of the connection to the water/ wastewater system.

END OF SECTION

SECTION 33 3000 – SANITARY SEWERAGE UTILITIES

General Building Construction

PART 1 - GENERAL

SUMMARY

A. This section includes sewer service lines, connection to sewer mains (wyes), service cleanouts, and abandonment of existing septic tanks.

REFERENCES

A. ASTM D 3034 – Type PSM Polyvinyl Chloride (PVC) Sewer Pipe and Fittings
B. ASTM D 3212 – Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
C. ASTM F 477 – Elastomeric Seals (Gaskets) for Joining Plastic Pipe
D. ASTM F1336 – PVC Gasketed Sewer Fittings

SUBMITTALS

A. Sewer Service Line Pipe and Fittings
B. Sewer Wyes and Saddles

ACCEPTANCE

A. The work will not be accepted until satisfactory pipe backfilling and clean up is complete.
B. If the work does not meet the specified requirements of this section and related sections, remove, and replace at no additional cost.

PART 2 - PRODUCTS

POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS

A. Conform to ASTM D 3034
B. Pipe Class: SDR 35
C. Bell ended joints conforming to ASTM D 3212
D. Elastomeric gaskets conforming to ASTM F 477

E. 4-inch nominal diameter unless otherwise indicated.
F. Each length of pipe shall be clearly marked with the following:
    1. Manufacturer
    2. Nominal Pipe Size
    3. The PVC Cell Classification
    4. Type PSM PVC Sewer Pipe
    5. ASTM Designation
    6. Pipe Class

SEWER WYES

A. Connection to New Sewers:
    1. In-line fittings conforming to ASTM F1336.
B. Connection to Existing Sewers:
    1. PVC Sewer Mains:
        a. PVC conforming to ASTM 3034, watertight with gasket.
        b. Two stainless steel bands and connectors for securing to the main.
        c. GPK Products, Fargo, ND, or approved equal.
    2. Asbestos-Cement, Concrete, or Vitrified Clay Sewers: Neoprene rubber boot with stainless steel bands for concrete, asbestos-cement or vitrified clay sewer main.
        a. Submit other saddle wyes to the Project Coordinator for review and approval.

CLEANOUTS

A. SDR 35 PVC riser pipe conforming to ASTM D 1785.
B. SDR 35 PVC pipe and fittings conforming to ASTM D 3034.
C. Inspection port plug shall be Sch 40 PVC and threaded if installed above ground. Plug shall be cast iron and threaded if installed below ground.

PART 3 - EXECUTION

EXAMINATION

A. Verify that dimensions and elevations are as indicated on the Drawings.
B. Verify that all products are in new condition.
C. Inspect pipe and fittings for defects.
D. Remove materials from the site that are defective, damaged, used, unsound, or that otherwise do not meet the specifications.

UTILITY CONFLICTS

A. Refer to Section I.H.S 02315.

SEWER SERVICE LINE INSTALLATION

A. Sewer Wyes and Saddles:
    1. Connection to New PVC: Furnish and install wyes at the locations indicated by the plans or by the Project Coordinator.
    2. Install a solvent weld cap or a plug and leave in place until service line construction begins.
    3. Properly reference, record and stake wye locations to permit ready relocation, in accordance with Section 01780, and provide information to the Project Coordinator.
    4. Connection to Existing PVC:
        a. Install saddle wyes at the locations indicated by the plans or by the Project Coordinator.
        b. Repair damage caused during the tapping process at no additional cost.
    5. Rotate the branch or wye of the saddle no more than 45 degrees from horizontal.

B. Risers:
    1. Extend riser from sanitary wye to an elevation that will allow for a service line to be laid at specified grades.
    2. Install riser at an angle equal to or less than 45 degrees measured from horizontal.
    3. Risers in Rock Trenches:
        a. Install riser pipe in the sewer trench.
        b. Install riser pipe approximately vertical.
        c. Encase the bottom of riser, wye and 1/8 bend in crushed rock or sand.
        d. Extend bedding the full width of the trench as excavated and not less than 18 inches in length from either side of the center of the riser.
        e. Place bedding material to a point 12 inches above centerline of the sewer main at the location of the wye.
    4. No separate payment will be made for risers.
C. Service Lines:
    1. Furnish and install sewer service lines at the locations on the plans or as directed by the Project Coordinator.
        a. Connect to the existing home sewer stub out if present underground outside the home.
        b. Cap sewer service, and stake if no connection is made.
    2. Follow general pipe installations requirements of Section 02315 – Excavation, Trenching and Backfill.
    3. Minimum slope for sewer service lines is 1/8-inch per foot (1%).
    4. Maximum slope for sewer service lines is ½-inch per foot (4 %).
    5. Ninety-degree bends are not allowed between the house and the sewer main.
    6. Connection of Sewer Service Lines to Manholes:

a. Connect to manholes only where permitted and approved by the Project Coordinator.

D. Sewer Service Line Cleanouts:
1. Two-Way Cleanouts: Install at the locations indicated on the drawings or as directed by the Project Coordinator.
2. One-Way Cleanouts:
   a. Install one-way cleanouts at a spacing not to exceed 100 feet.
   b. Install one-way cleanouts so that the service can be rodded or snaked in the direction of flow.
3. Construct as shown on the standard details.
4. Install a 4-inch sewer wye in the sewer service line and connect risers of the same material from the wye to the ground surface.
   a. Attach a schedule 40 PVC adapter and threaded plug to the end of the riser.
   b. Label cleanout cover.
5. The Project Coordinator may specify that cleanouts be buried 3 to 6 inches below grade and be fit with a threaded cast iron plug.

EXISTING SEPTIC TANK ABANDONMENT

A. Abandon existing septic tanks and/or wet wells where directed by the Project Coordinator.
B. Pump tanks prior to abandonment. Dispose the contents in accordance with state and federal requirements.
C. Remove and dispose of any interior pipes, plumbing, or pumps.
D. Remove and dispose of concrete tank cover, risers, and inspection pipes.
E. Backfill interior of the tank with suitable, compactable soil material.
F. Conform to section 02310 – Grading, and section 02920 – Topsoiling, Seeding, Fertilizing and Mulching.
G. Locate abandoned septic tanks on the as-built drawing.

AS-BUILTS

A. Provide as-built information on each system to include the following information:
1. Certificate of compliance for onsite septic systems either from the Band DNR on Trust lands or local agency on Fee lands.
2. Submittal of pumps and alarms installed.
3. RECORD DRAWINGS for water and wastewater systems following I.H.S. spec listed below.

01/01/08 01780 Closeout Submittals – 2 of 4

A. Provide record data in one of the following manners:
   1. On a set of project drawings, neatly draw tie measurements and changes.
   2. On separate 8½ X 11 sheets, neatly draw site sketches, structure sketches, etc., indicating the necessary information.

B. Provide three (3) swing tie measurements to all buried utility objects that may need to be located in the future, including, but not limited to:
   1. Gate valves
   2. Corporation stops
   3. Curb stops
   4. Water main fittings
   5. Couplings to existing water systems.
   6. Cleanouts
   7. Sewer wyes.
   8. Utility crossings.
   9. Septic tank manholes and access covers.
   10. Corners of drainfields

C. Provide offset measurements for buried utilities (e.g. water main) installed parallel to roads.

D. Provide revised elevation data for all items that have elevations shown on the plan drawings, including, but not limited to, the following:
   1. Manhole inverts (inlet and outlet)
   2. Manhole rims
   3. Lift station invert

4. Lift station top
5. Lift station pipe penetrations
6. Float elevations
7. Septic tank elevations
8. Elevations of pipe entering and leaving structures
9. Elevation of sewer service line stub (if terminated at right of way)
10. Other elevations indicated on profiles.

E. Provide installed bid schedule items quantities for individual facilities on 8½ X 11 sheets.

1. Project Coordinator may supply standard forms for use by the Contractor.

3.02 WARRANTIES

A. A. Submit all warranty information regarding the materials installed.

END OF SECTION

SECTION 33 3600 – SEWAGE TREATMENT SYSTEMS

General Building Construction

PART 1 - GENERAL

SUMMARY

A. This section covers the requirements for design and installation of onsite sewage treatment systems.

RELATED WORK

A. I.H.S Section 01119 – Revisions to Standard Specifications
B. I.H.S Section 01780 – Closeout Submittals
C. I.H.S Section 02315 – Excavation, Trenching and Backfill
D. I.H.S Section 02440 – Drainfields
E. I.H.S Section 02441 – Pressure Dosed Mound System

REFERENCES

A. ASTM D 1785 – Polyvinyl Chloride (PVC) Plastic Pipe Schedule 40, 80 and 120.
B. ASTM D 3034 – Type PSM Polyvinyl Chloride (PVC) Sewer Pipe and Fittings.
C. Minnesota Pollution Control Agency, Chapter 7080 – Individual Sewage Treatment Systems
D. State of Wisconsin, Industry and Human Relations Committee. Chapter 83, Private Onsite Wastewater Treatment Systems. Chapter 84, Plumbing Products.
E. State of Michigan, Western Upper Peninsula District Health Department, Superior Environmental Health Code.
F. State of Michigan, Public Health Code, Act 368.

SUBMITTALS

Septic design with soil boring logs and/or perc test results and site plan.
Management Plan
Monitoring plan, if applicable
Manufacturer and model of tank(s), pump, effluent filter and alarm, including manufacturer spec sheets for tank and pump.

DESIGN STANDARDS

Systems shall be designed by a professional holding at minimum a current Designer license thru the MPCA.
All systems for flows up to 5,000 gpd shall be designed in accordance to MN Chapter 7080.
All systems shall be sized at minimum for flows of a Classification I Dwelling plus one-bedroom larger than each of the houses that the system is to be connected.

PERMITTING & INSPECTION

1. All systems shall be permitted by both the applicable LGU and the MLB DNR.
2. All required inspections shall be conducted by both the local LGU and MLB DNR.

1. Contact Ryan Rupp at (320) 532-7422 for a list of the inspections required by the MLB DNR; or to schedule inspections.

QUALITY ASSURANCE

Septic tanks and other materials shall meet minimum requirements of the appropriate state agency regulating onsite septic systems.

PART 2 - PRODUCTS

Note: All products installed shall be in accordance with the approved design. Any substitutions must be approved by the designer of said approved design.

SEPTIC TANKS

A. Septic Tank Requirements
   1. Sewage tanks servicing ISTS must meet or exceed applicable requirements of 7080.1910 to 7080.2030 unless otherwise approved by a licensed professional engineer and approved by the local unit of government.

B. Joints below the liquid level shall be of monolithic construction or have interlocking V-notch, shiplap or tongue and grove joints.

C. Inlet and Outlet
   1. Provide tanks with inlet and outlet connections for 4-inch Schedule 40 PVC.
   2. Provide “boss” stops on all inlet and outlet openings to prevent the insertion of the sewer piping beyond the inside wall of the tank.
   3. Provided an open-end coated sanitary tees or baffles made of approved materials at the inlet.
   4. Tees or baffles shall extend at least 6 inches above and 9 inches below the liquid level, but not exceed 1/3 of the liquid depth.
   5. Provide at least 2 inches of clear space over the top of tees or baffles.
   6. The bottom of the outlet opening shall be at least 2 inches lower than the bottom of the inlet.

D. Manhole Risers and Covers
   1. Provide at least one manhole opening, no less than 24 inches square or 24 inches in diameter, with each single or multiple compartment tanks, situated over the outlet pipe and filter.
   2. Manhole riser shall be cast in place polyethylene (HDPE) with gasketed connections or other approved water-tight material.
   3. Covers shall be of the same material as the rise; at least 24 inches in diameter; be designed to be secured by at least four (4) screws; be rated for at least 1,000 lbs,; and be affixed with a warning label, printed with information regarding the hazards present when entering a septic tank affixed or supplied by the manufacturer.

E. Inspection Pipes

D. Provide an airtight inspection opening consisting of Schedule 40 PVC at least 4 inches in diameter, over the inlet baffle.

E. The upper end of the pipe shall terminate 6 inches above final grade and be securely capped.

SOLID SEWER PIPE, CLEANOUT AND FITTINGS

A. Schedule 40 PVC riser pipe shall conform to ASTM D 1785.

B. SDR 35 PVC pipe and fittings shall conform to ASTM D 3034.

C. Inspection port plug shall be PVC and threaded if installed above ground. Plug shall be cast iron and threaded if installed below ground.

EFFLUENT FILTER

A. Rated for 3,000 gpd flow rate.

B. Maximum filter opening, 1/16 inch.

C. Polylok PL-122, Zabel A100-12 series, Zoeller 170-0023, Zoeller 170-0058, or approved equal.

D. Filter must be installed with an alarm.

TANK ALARM

2. SJE Rhombus AB Duo
3. Septronics TM2
4. If conditions should require outdoor installation, use SJE Rhombus Duo.
5. Install tank alarm in mechanical room. (Poplar, Butternut, Alder, Walnut models shall be installed inside of the garage by the electrical panel.

PART 3 - EXECUTION

SOLID SEWER PIPE and CLEANOUTS

A. Install solid sewer pipe from the house to the septic tank.
    1. Connect to the existing home sewer stub out if present underground outside the home.
    2. Cap sewer service, and stake if no connection is made.
B. Minimum cover over solid sewer pipe is 12-inches.
C. Minimum slope between the house and the septic tank is 1/8-inch per foot or 6 inches, which ever is greater.
D. There shall be no 90-degree bends in the pipe between the house and the Septic tank.
E. Install two-way cleanouts approximately 5 feet from the outside wall of each home or mobile home.
    1. Cleanout shall allow rodding the sewer line both towards the home and towards the septic tank.
    2. Fit cleanout with a threaded plug 6" above final grade and label "Septic".
    3. Install cleanout so the top is flush with the ground or as specified by the Project Coordinator.
F. Properly seal pipe connections to tanks to prevent groundwater infiltration.
G. Terminate inspection opening 6 inches above final grade and securely cap.
H. Solvent weld all joint connections.

TANK INSTALLATION

A. Place tanks in excavations at the locations and elevations designated on the plans or by the Project Coordinator.
B. Refer to Section 02315 for excavation, backfill, and grading requirements.
C. Place tanks level.
D. Install tanks in accordance with manufacturers' recommendations.
E. Seal joints when the tank is set with an epoxy based sealing compound or Rub-R-Nek flexible gasket, as manufactured by the Henry Group (formerly K.T. Snyder Company Inc.), Houston, Texas, or equal.
F. Seal inlet and outlet with temporary plugs until connections are made to the inlet and outlet lines.
G. Tanks shall be installed in accordance to 7080.2000 with access provided in accordance to 7080.2010.
H. Do not drive over the tank during and after construction.

EFFLUENT FILTER

A. Center filter under the outlet manhole opening.
B. Solvent weld to 4-inch PVC Schedule 40 outlet pipe. Extend a minimum of 12-inches beyond the outside of the septic tank before connecting to SDR 35 pipe.
C. Conform to manufacturers installation instructions.

PUMP AND CONTROLS

A. Pump to be installed as specified in the design.
B. An event counter shall be installed along side the pump control box, which will be utilized by the Owner for septic system monitoring.

SOIL TREATMENT AREA

1. Soil treatment area shall be installed in accordance to the approved design and MN Chapter 7080 requirements.
2. Treatment shall not be covered until all requirement inspections have been conducted by the local LGU and MLB DNR.
3. Elevation of the bottom of the distribution media shall be documented.
4. Supplier of the clean sand and rock shall be documented.

EXISTING SEPTIC TANK ABANDONMENT

A. Abandon existing septic tanks and/or wet wells where directed by the Project Coordinator.
B. All solids and liquids must be removed and disposed of according to part 7080.2450, subpart 6, by a licensed maintenance business.

C. Remove and dispose of any interior pipes, plumbing, or pumps.
D. Remove and dispose of concrete tank cover, risers, and inspection pipes.
E. All electrical devices and devices containing mercury must be removed and disposed of according to applicable regulations.
F. Abandoned tanks or any other underground cavities must be removed or remain in place and crushed with the remaining cavity filled with soil or rack material.
G. Conform to section 02310 – Grading, and section 02920 – Topsoiling, Seeding, Fertilizing and Mulching.
H. Locate abandoned septic tanks on the as-built drawing.
I. Contractor shall provide the owner with a signed record of abandonment that states that the system was abandoned according to 7080.2500.

REMOVAL OF EXISTING SOIL TREATMENT SYSTEM

1) Removal of existing soil treatment systems where directed by the Project Coordinator.
2) Removal of the system shall be completed by the contractor in compliance with 7080.2500.

AS–BUILTS

B. Provide as-built information on each system to include the following information:
1. Certificate of compliance for onsite septic systems from the Band DNR on Trust lands; and from both the Band DNR and applicable local unit of government on Fee lands.
2. Submittal of manufacturer and model information for tank(s), pump, effluent filter and alarm installed.
3. Submittal of supplier information for clean sand and/ or rock media installed.
4. Drawing, as close to scale, as possible to show:
a. Location of system components, such as tank(s) and soil treatment area and setbacks from:
B. Structures;
C. Property boundaries;
D. Road right-of-way;
E. Neighboring or on property well(s);
F. Neighboring bodies of water;
G. Alternate soil treatment area site;
H. Any abandoned system components.
Elevations for:
i. Benchmark;
ii. Limiting layer;
iii. Depth of tank (s);
iv. Depth of the bottom of the soil treatment system’s distribution media.
Soil treatment area type and sizing, including:
c. For trenches or beds: width, length and depth.
d. For mounds or at-grades: depth of sand, rock bed sizing and final mound dimensions.
Any deviations from the approved design.

3.02 WARRANTIES

B. A. Submit all warranty information regarding the materials installed.

END OF SECTION

SECTION 33 3700 – FOUNDATION DRAINAGE PIPING

General Building Construction

1. DRAIN TILE – FOUNDATION DRAINAGE PIPING
    a. Contractor is to install foundation drainage on both sides of the footings.
        i. Contractor to use 6” perforated, geotextile fabric sock covered, polyethylene pipe and fittings.
            a. When pipe is installed it must have a minimum of 1% slope.
            b. Contractor shall install filter fabric over filtering material prior to installation of drain tile.
            c. Install rock drainage fill and cover with geotextile filter fabric to protect drainage fill from soil contamination.
        ii. Contractor to use sump basket with a 24” diameter. Use 36” deep fiberglass anti-floatation device. (Sites where natural gravity discharge is not present.)
        iii. Contractor to use heavy-duty submersible sump pump with a float switch and 1 ¼” discharge connection.
            a. Use Weil Series 1400 – 1/3 hp, or approved equal by CMD Project Management staff.
        iv. On sites where natural gravity drainage is available, contractor shall daylight draintile, and mark location. Include measurements from corner of house on sewer or septic as-built documents.

    b. Contractor must use the following qualities of soil materials:
        i. Impervious fill: Clayey gravel and sand mixture capable of compacting to dense state.
        ii. Filtering materials: Evenly graded mixture of uncrushed/crushed gravel or crushed stone and natural sand, with 100% passing (1 ½”) sieve and not more than 5% passing (No. 50) sieve.
        iii. Drainage fill: Washed, evenly graded mixture of crushed stone, crushed/uncrushed gravel (ASTM D 448), coarse aggregate, Size #57, with 100% passing (1 ½”) sieve and not more than 5% passing (No. 8).

END OF SECTION

Frost Depth
Appendix A

FROST DEPTH

NO CHANGES EXCEPT NEW RULE NUMBER
MSBC RULES 1303.1600 REPLACES 1300.5500

SNOW LOAD
Appendix B