City of Portland, Maine – Building or Use Permit Application 389 Congress Street, 04101, Tel: (207) 874-8703, FAX: 874-8716

Location of Construction:	Owner:	Phone:
555 Forest Ave	Government Employees Credit Union	

Owner Address:	~~Lessee~~/Buyer's Name:	Phone:	BusinessName:
	Thomas, Leslie A.		Forest Ave Assoc., LLC

Contractor Name:	Address:	Phone:
DLM Corp	P.O. Box 52 Portland, ME 04112	871-1660

Past Use:	Proposed Use:	COST OF WORK:	PERMIT FEE:
Office	Same	$ 94,000.00	$ 490.00

FIRE DEPT. ☑ Approved ☐ Denied	INSPECTION:
Signature:	Use Group: B Type: BOCA 96
	Signature:

Proposed Project Description:

Make Interior Renovations to include new elevator shaft

PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)

Action: Approved ☐
Approved with Conditions: ☐
Denied ☐

Signature: Date:

Permit Taken By:	Date Applied For:
Mary Gresik	27 March 1998

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal rules.
2. Building permits do not include plumbing, septic or electrical work.
3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..

PERMIT ISSUED WITH REQUIREMENTS

CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provisions of the code(s) applicable to such permit

David McDonald P.O. Box 52 Portland, ME 04112 27 March 1998

SIGNATURE OF APPLICANT David McDonald ADDRESS: DATE: PHONE:

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE PHONE:

White–Permit Desk Green–Assessor's Canary–D.P.W. Pink–Public File Ivory Card–Inspector

Permit No: 980294

PERMIT ISSUED
Permit Issued: MAR 31 1998
CITY OF PORTLAND

Zone: B-2 CBL: ~~126-D-001~~ 126-D-001

Zoning Approval: 3/27/98

Special Zone or Reviews:
☐ Shoreland
☐ Wetland
☐ Flood Zone
☐ Subdivision
☐ Site Plan maj ☐ minor ☐ mm ☐

Zoning Appeal
☐ Variance
☐ Miscellaneous
☐ Conditional Use
☐ Interpretation
☐ Approved
☐ Denied

Historic Preservation
☑ Not in District or Landmark
☑ Does Not Require Review
☐ Requires Review

Action:
☐ Appoved
☐ Approved with Conditions
☐ Denied

Date: 3/27/98

CEO DISTRICT

BUILDING PERMIT REPORT

DATE: 3/30/98 ADDRESS: 555 Forrest Ave 126-D-001

REASON FOR PERMIT: renovations

BUILDING OWNER: Government Employees Credit Union

CONTRACTOR: D I M

PERMIT APPLICANT: David McDonald

USE GROUP _____ BOCA 1996 CONSTRUCTION TYPE _____

CONDITION(S) OF APPROVAL

This Permit is being issued with the understanding that the following conditions are met:

Approved with the following conditions: *1 *8 *14, *17 *20, *24 *26 *27

X 1. This permit does not excuse the applicant from meeting applicable State and Federal rules and laws.

2 Before concrete for foundation is placed, approvals from the Development Review Coordinator and Inspection Services must be obtained. (A 24 hour notice is required prior to inspection)

3. Precaution must be taken to protect concrete from freezing.

4. It is strongly recommended that a registered land surveyor check all foundation forms before concrete is placed. This is done to verify that the proper setbacks are maintained.

5. Private garages located beneath habitable rooms in occupancies in Use Group R-1, R-2, R-3 or I-1 shall be separated from adjacent interior spaces by fire partitions and floor/ceiling assembly which are constructed with not less than 1-hour fire resisting rating. Private garages attached side-by-side to rooms in the above occupancies shall be completely separated from the interior spaces and the attic area by means of ½ inch gypsum board or the equivalent applied to the garage means of ½ inch gypsum board or the equivalent applied to the garage side. (Chapter 4 Section 407.0 of the BOCA/1996)

6. All chimneys and vents shall be installed and maintained as per Chapter 12 of the City's Mechanical Code. (The BOCA National Mechanical Code/1993).

7. Sound transmission control in residential building shall be done in accordance with Chapter 12 section 1214.0 of the city's building code.

X 8. Guardrails & Handrails: A guardrail system is a system of building components located near the open sides of elevated walking surfaces for the purpose of minimizing the possibility of an accidental fall from the walking surface to the lower level. Minimum height all Use Groups 42" , except Use Group R which is 36". In occupancies in Use Group A, B, H-4, I-1, I-2 M and R and public garages and open parking structures, open guards shall have balusters or be of solid material such that a sphere with a diameter of 4" cannot pass through any opening. Guards shall not have an ornamental pattern that would provide a ladder effect. (Handrails shall be a minimum of 34" but not more than 38". Use Group R-3 shall not be less than 30", but not more than 38".) Handrail grip size shall have a circular cross section with an outside diameter of at least 1 1/4" and not greater than 2".

9. Headroom in habitable space is a minimum of 7'6".

10. Stair construction in Use Group R-3 & R-4 is a minimum of 10" tread and 7 3/4" maximum rise. All other Use group minimum 11" tread. 7" maximum rise.

11. The minimum headroom in all parts of a stairway shall not be less than 80 inches. (6' 8")

12. Every sleeping room below the fourth story in buildings of use Groups R and I-1 shall have at least one operable window or exterior door approved for emergency egress or rescue. The units must be operable from the inside without the use of special knowledge or separate tools. Where windows are provided as means of egress or rescue they shall have a sill height not more than 44 inches (1118mm) above the floor. All egress or rescue windows from sleeping rooms shall have a minimum net clear opening height dimension of 24 inches (610mm). The minimum net clear opening width dimension shall be 20 inches (508mm), and a minimum net clear opening of 5.7 sq. ft.

13. Each apartment shall have access to two (2) separate, remote and approved means of egress. A single exit is acceptable when it exits directly from the apartment to the building exterior with no communications to other apartment units.

X 14. All vertical openings shall be enclosed with construction having a fire rating of at lest one (1)hour, including fire doors with self closer's. (Over 3 stories in height requirements for fire rating is two (2) hours.)

15. The boiler shall be protected by enclosing with (1) hour fire-rated construction including fire doors and ceiling, or by providing automatic extinguishment.

16. All single and multiple station smoke detectors shall be of an approved type and shall be installed in accordance with the

provisions of the City's Building Code Chapter 9, Section 19, 920.3.2 (BOCA National Building Code/1996), and NFPA 101 Chapter 18 & 19. (Smoke detectors shall be installed and maintained at the following locations):

- In the immediate vicinity of bedrooms
- In all bedrooms
- In each story within a dwelling unit, including basements

In addition to the required AC primary power source, required smoke detectors in occupancies in Use Groups R-2, R-3 and I-1 shall receive power from a battery when the AC primary power source is interrupted. (Interconnection is required)

17. A portable fire extinguisher shall be located as per NFPA #10. They shall bear the label of an approved agency and be of an approved type.
18. The Fire Alarm System shall be maintained to NFPA #72 Standard.
19. The Sprinkler System shall maintained to NFPA #13 Standard.
20. All exit signs, lights, and means of egress lighting shall be done in accordance with Chapter 10 Section & Subsections 1023. & 1024. Of the City's building code. (The BOCA National Building Code/1996)
21. Section 25-135 of the Municipal Code for the City of Portland states, "No person or utility shall be granted a permit to excavate or open any street or sidewalk from the time of November 15 of each year to April 15 of the following year".
22. The builder of a facility to which Section 4594-C of the Maine State Human Rights Act Title 5 MRSA refers, shall obtain a certification from a design professional that the plans commencing construction of the facility, the builder shall submit the certification to the Division of Inspection Services.
23. Ventilation shall meet the requirements of Chapter 12 Sections 1210. Of the City's Building Code.
24. All electrical, plumbing and HVAC permits must be obtained by a Master Licensed holders of their trade.
25. All requirements must be met before a final Certificate of Occupancy is issued.
26. All building elements shall meet the fastening schedule as per Table 2305.2 of the City's Building Code. (The BOCA National Building Code/1996).
27. Ventilation of spaces within a building shall be done in accordance with the City's Mechanical Code (The BOCA National Mechanical Code/1993).
28. Please read and implement the attached Land Use-Zoning report requirements.
29. _____
30. _____
31. _____
32. _____

P. Samuel Hoffses, Code Enforcement

cc: Lt. McDougall, PFD
Marge Schmuckal

STRUCTURAL NOTES

FOUNDATIONS:

1. Bear footings on firm, undisturbed native soil or stone ledge at depth shown on plans.
2. Place foundation concrete only on clean, firm, inspected bearing material.

CONCRETE:

1. Concrete regular weight (144 pcf) with Type II cement per ASTM C150, aggregate per ASTM C33, and potable water. Aggregate size = 1". Minimum 28-day compressive strength = 3000 psi
2. Cure concrete with polyethylene for 5 days or with a curing compound approved by the Engineer.

COLDFORM METAL FRAMING:

1. Studs: Manufacturer's standard load-bearing steel studs of size, shape and gauge indicated, with 1-5/8 inch minimum flanges and flange return lip.
2. Materials:
   Fabricate metal framing components from structural quality sheet steel, ASTM A446 grade A galvanized members, minimum yield point of 33,000 psi.
3. Fasteners:
   a. Self-drilling, Self-tapping Screws, Bolts, Nuts and Washers: ASTM A90, hot dip galvanized.
   b. Anchorage Devices: Power driven and Drilled expansion bolts.

STRUCTURAL STEEL, BOLTS & WELDS:

1. Latest AISC Codes and Handbooks apply.
2. Rolled sections and plates: ASTM A-36, Fy = 36 ksi.
3. Structural Tube Columns: ASTM A 500, grade B, Fy = 46 ksi.
4. Bolts and plain anchors: ASTM A 307.

CONSTRUCTION NOTES:

1. Install and weld structural steel columns and beams prior to cutting and removing any existing concrete slabs or steel beams.
2. Verify all dimensions and conditions prior to starting work. Notify the Engineer of any discrepancies or inconsistencies.
3. Verify in field all existing conditions shown on drawings.
4. Provide all necessary temporary bracing, shoring, guying or other means to avoid excessive stresses and to hold structural elements in place during construction.
5. Details on the structural drawings are typical.

Title: BRADISH - YOUNG, INC. BUILDING

555 Forest Avenue

Portland, Maine

EDP
ENGINEERING DESIGN PROFESSIONALS
Consulting Engineers
P.O. Box 575, Freeport, Maine 04032 (207)865-9505

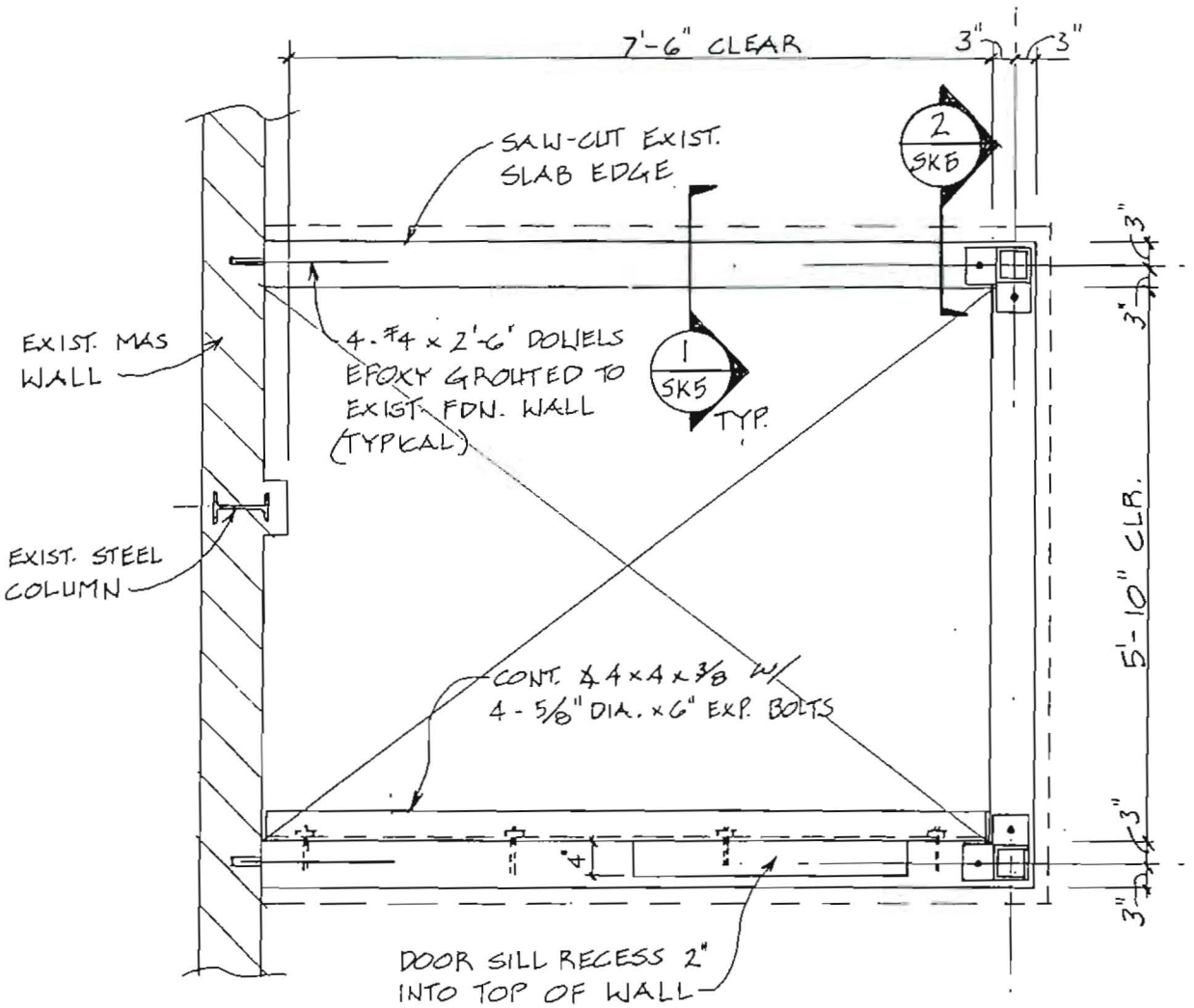
STATE OF MAINE
LARRY A. WICHROSKI #5990 REGISTERED
PROFESSIONAL ENGINEER

Job No: 00998

Date: 3 - 22 - 98

Name: L A W

Sheet: S - 1



ELEVATOR PIT PLAN @ GROUND FLOOR

1/2"=1'-0

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PORTLAND, MAINE

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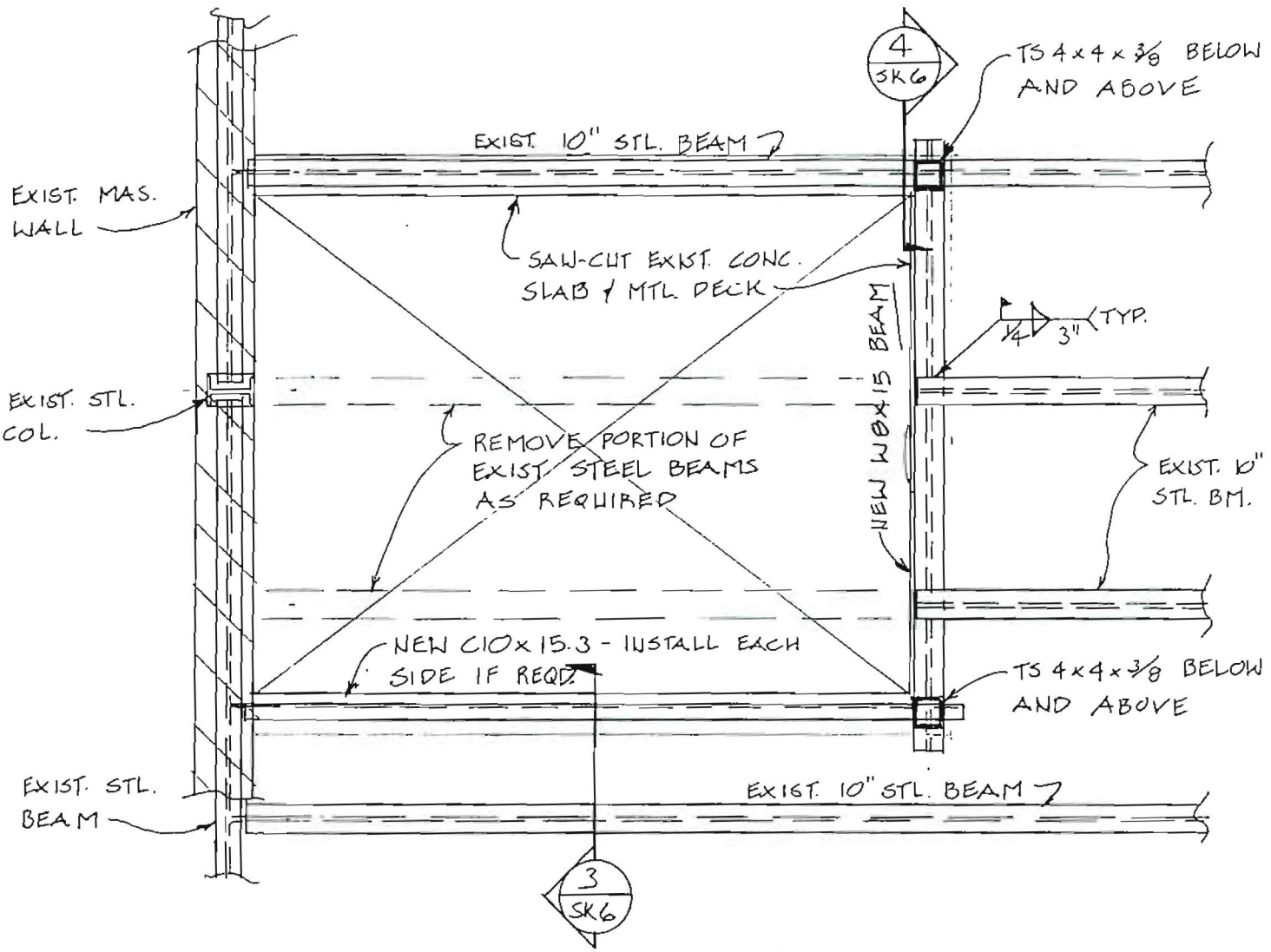
STATE OF MAINE
LARRY A. WICHROSKI
#5990
REGISTERED
PROFESSIONAL ENGINEER

Job No: 00998
Date: 3-22-98
Name: LAW
Sheet: SK-2



ELEVATOR OPENING @ 2ND FLOOR

1/2"=1'-0

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STATE OF MAINE
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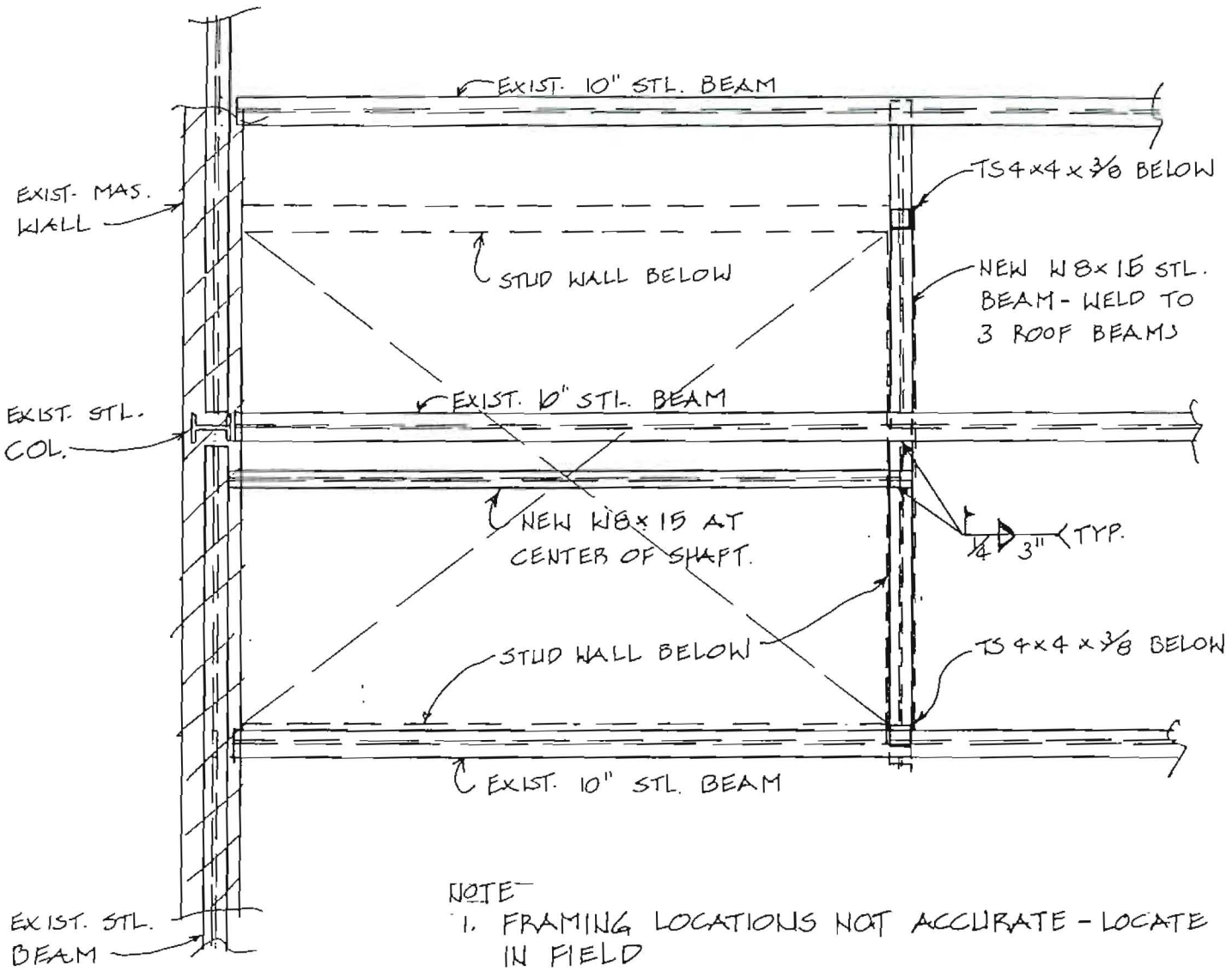
Job No: 00998
Date: 3-22-98
Name: LAW
Sheet: SK-3



NOTE

1. FRAMING LOCATIONS NOT ACCURATE - LOCATE IN FIELD

ROOF FRAMING ABOVE ELEVATOR SHAFT

1/2" = 1'-0

Title: BRADISH-YOUNG, INC. BUILDING 555 FOREST AVENUE PORTLAND, MAINE	STATE OF MAINE LARRY A. WICHROSKI #5990 REGISTERED PROFESSIONAL ENGINEER	Job No: 00998 Date: 3-22-98 Name: LAW Sheet: SK-4

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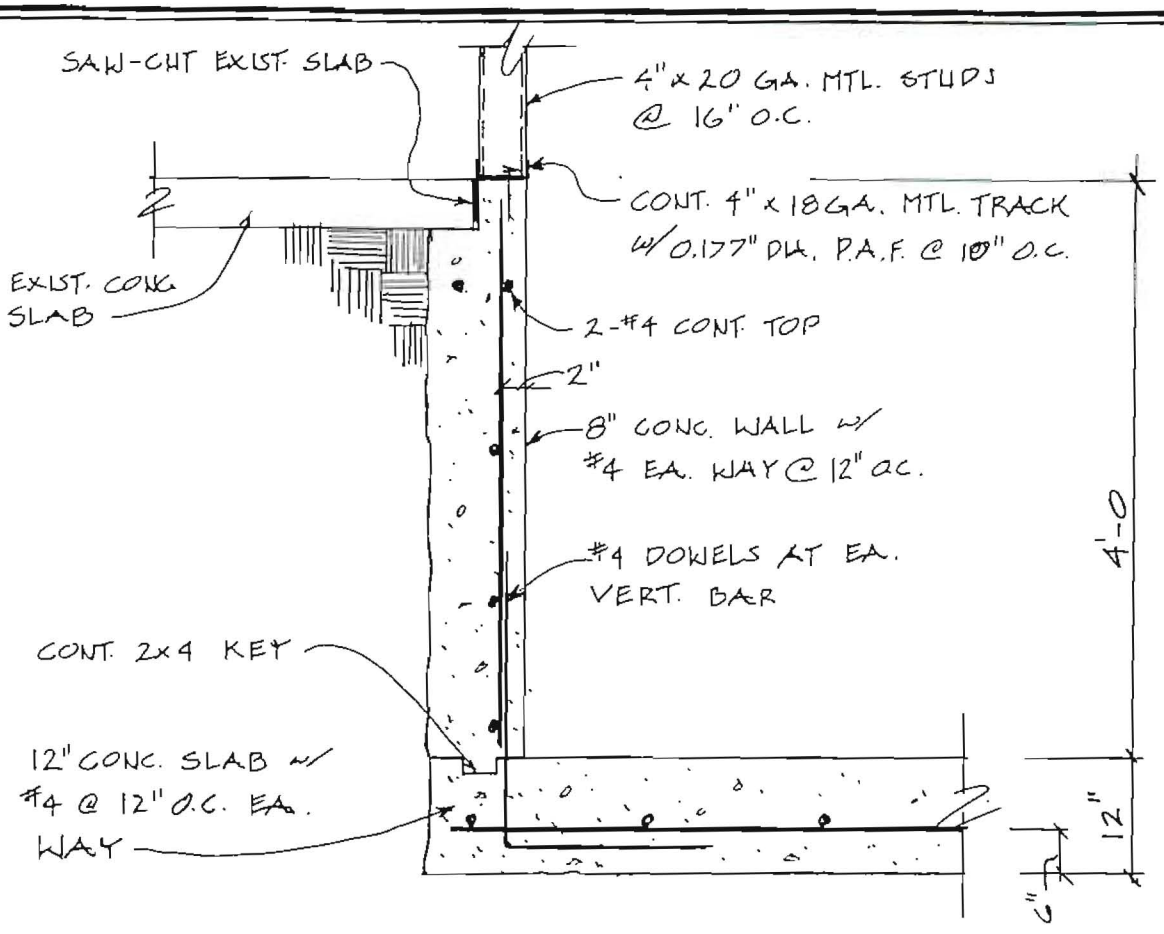
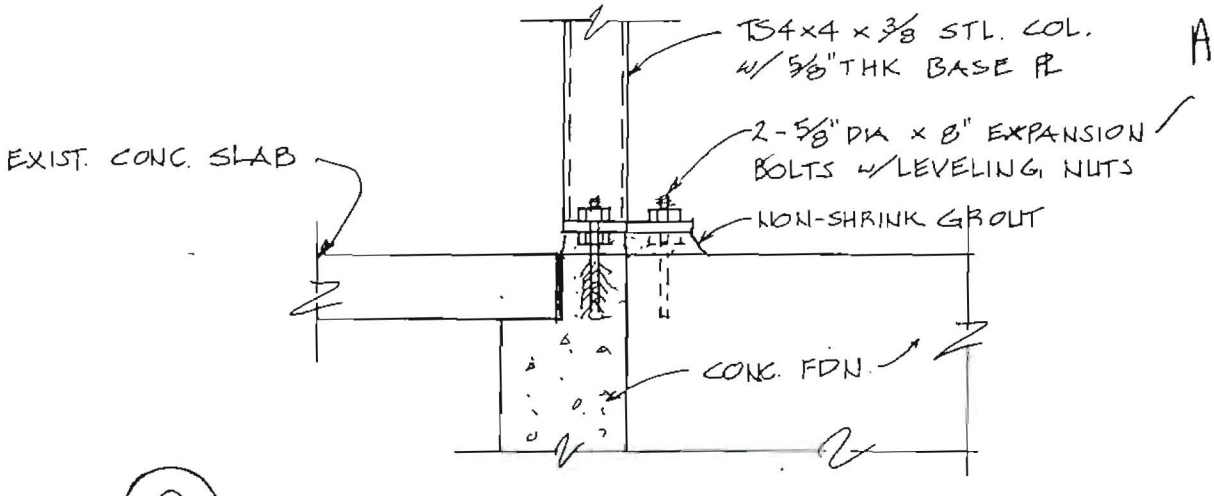


1

3/4"=1'-0



2

1"=1'-0

A-325

Title:	BRADISH-YOUNG, INC. BUILDING 555 FOREST AVENUE PORTLAND, MAINE
	STATE OF MAINE LARRY A. WICHROSKI #5990 REGISTERED PROFESSIONAL ENGINEER
Job No:	00998
Date:	3-22-98
Name:	LAW
Sheet:	SK-5

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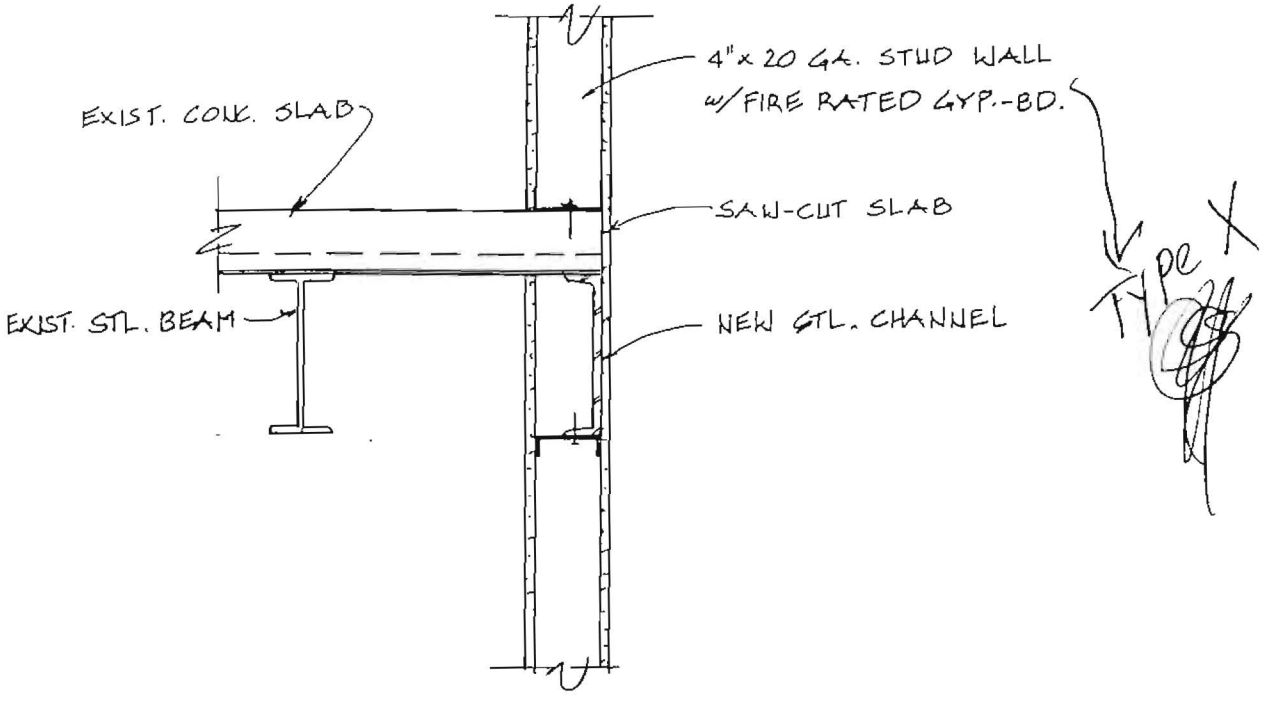
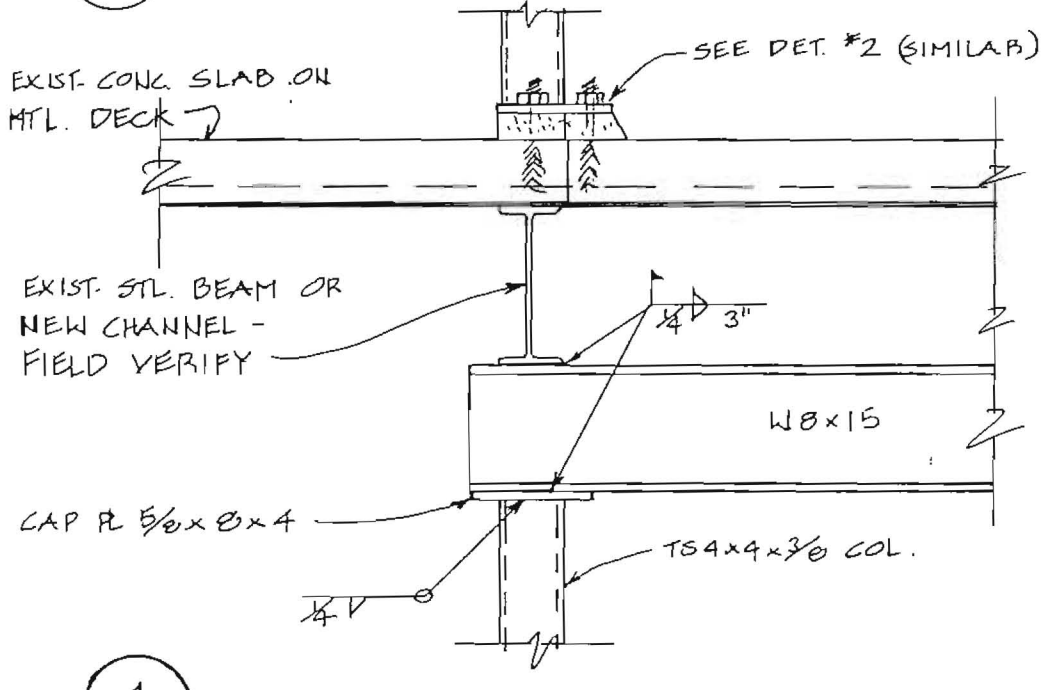


3

1"=1'-0



4

1"=1'-0

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STATE OF MAINE
LARRY A. WICHROSKI #5990 REGISTERED PROFESSIONAL ENGINEER

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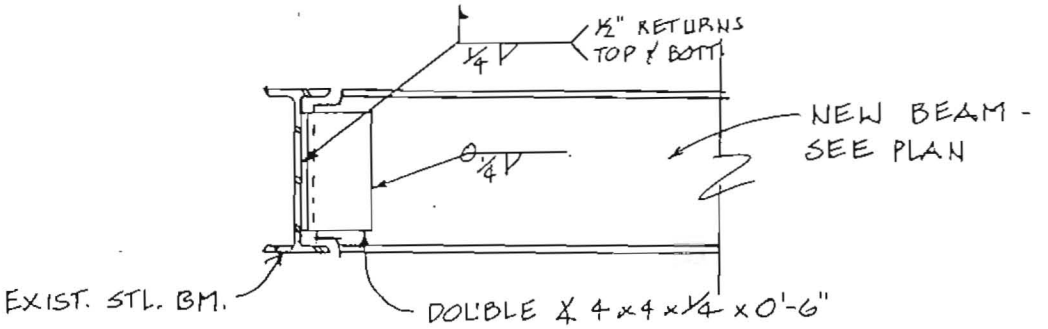

5

1" = 1'-0

Title: BRADISH-YOUNG, INC. BUILDING 555 FOREST AVENUE PORTLAND, MAINE	STATE OF MAINE LARRY A. WICHROSKI #5990 REGISTERED PROFESSIONAL ENGINEER	Job No: 00998 Date: 3-22-98 Name: LAW Sheet: SK-7

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STRUCTURAL NOTES

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1. Bear footings on firm, undisturbed native soil or stone ledge at depth shown on plans.
2. Place foundation concrete only on clean, firm, inspected bearing material.

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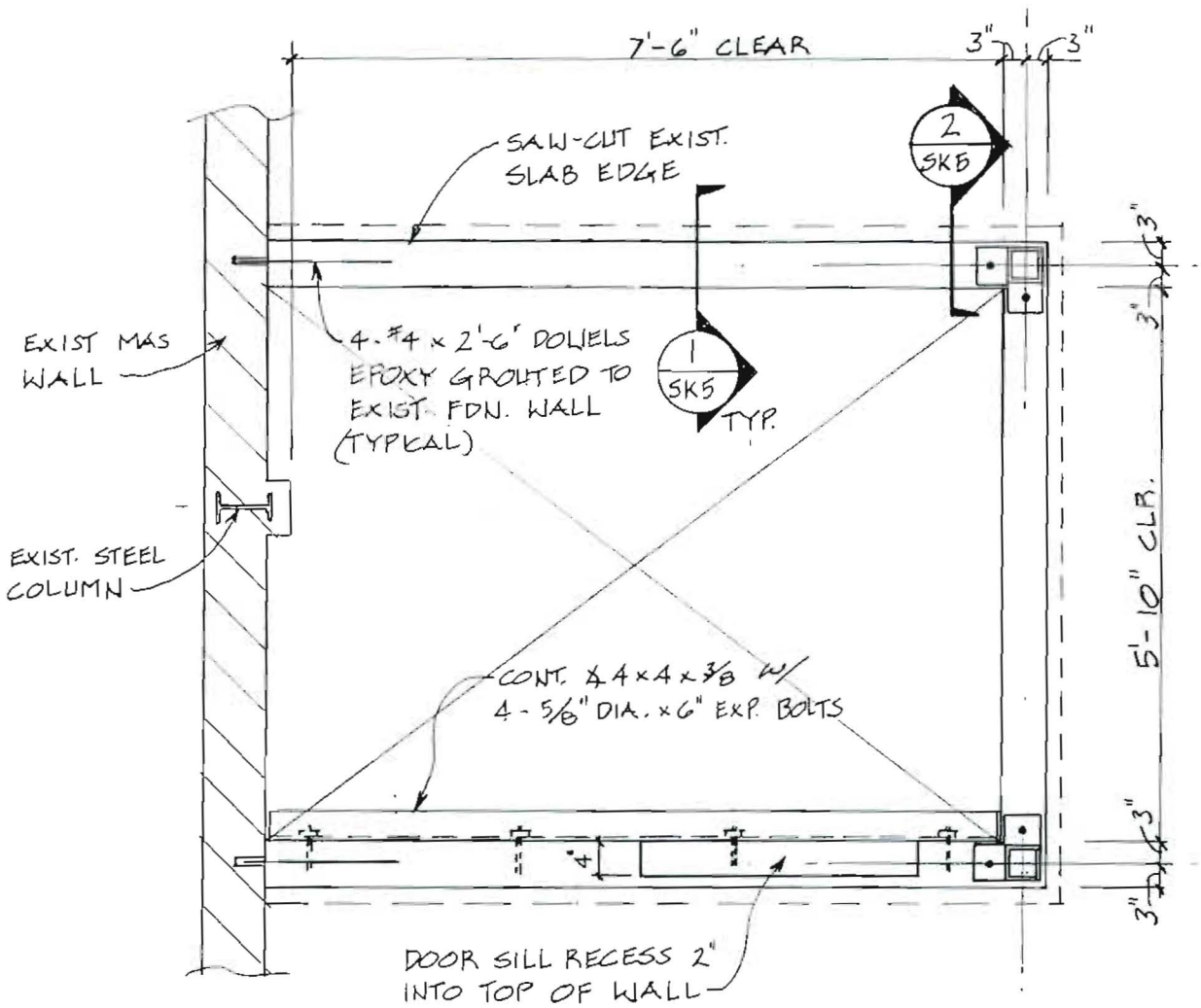

ELEVATOR PIT PLAN @ GROUND FLOOR

1/2"=1'-0

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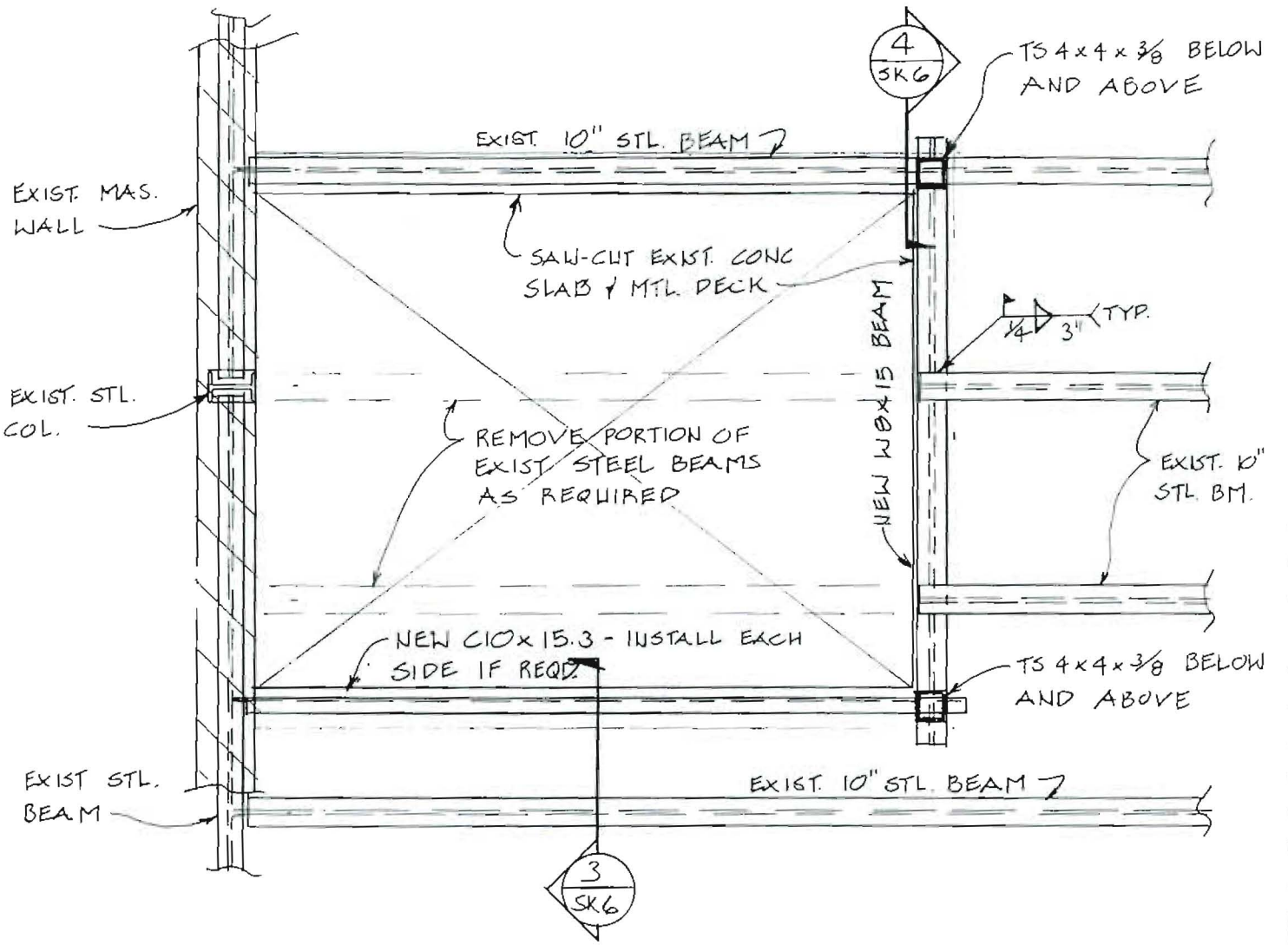

ELEVATOR OPENING @ 2ND FLOOR

1/2" = 1'-0

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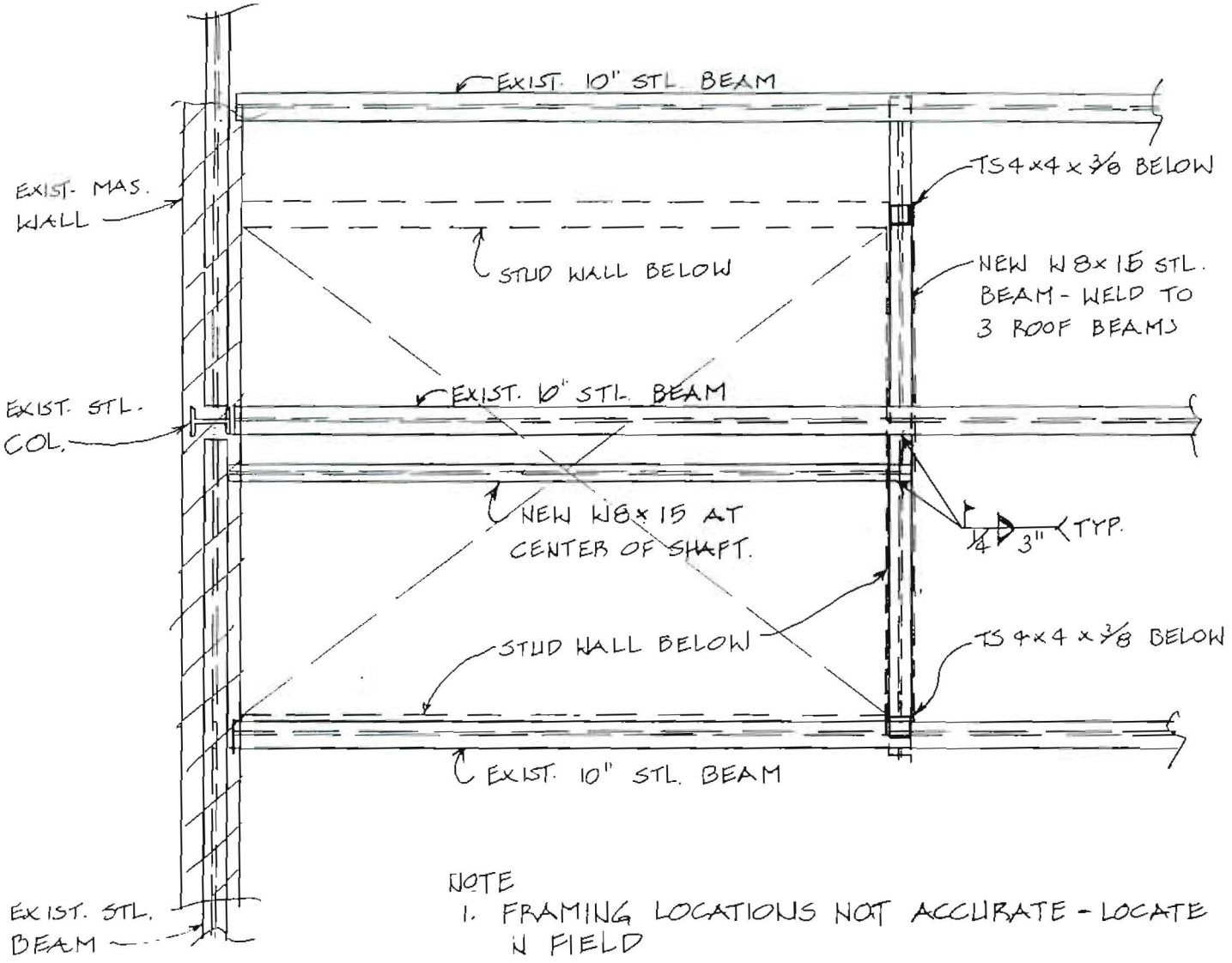

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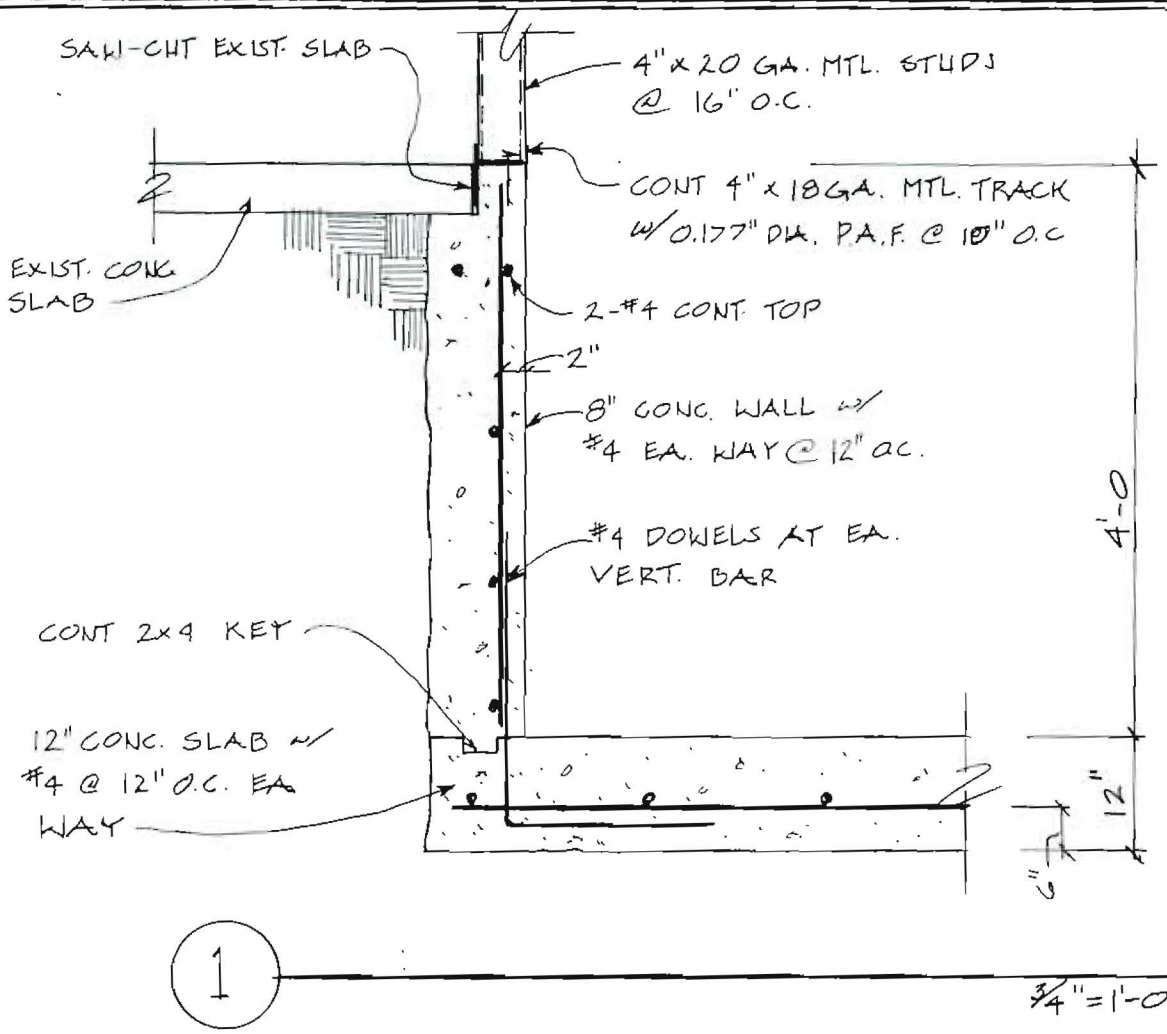
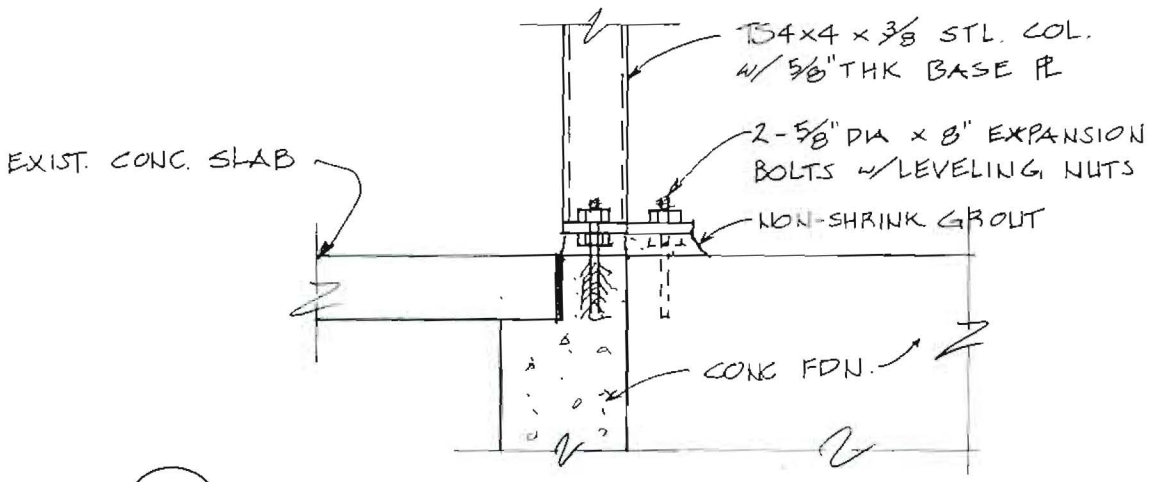


1

3/4" = 1'-0



2

1" = 1'-0

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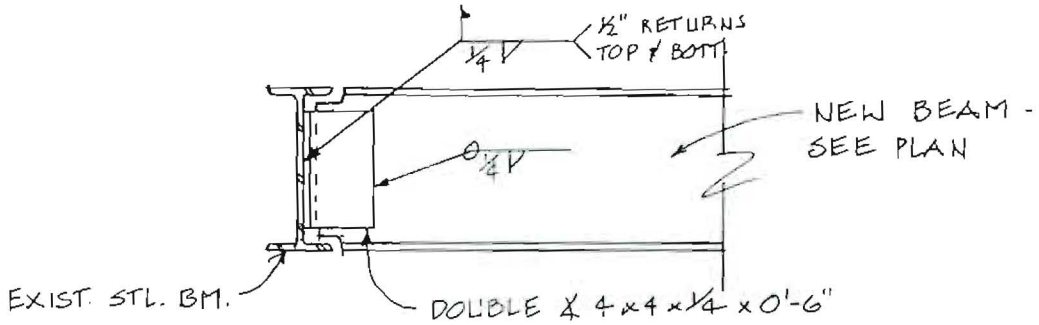

5

1"=1'-0

Title: BRADISH-YOUNG, INC. BUILDING 556 FOREST AVENUE PORTLAND, MAINE	STATE OF MAINE LARRY A. WICHROSKI #5990 REGISTERED PROFESSIONAL ENGINEER	**Job No:** 00198 **Date:** 3-22-98 **Name:** LAW **Sheet:** SK-7

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P.O. Box 575, Freeport, Maine 04032 (207)865-9505

ELEVATOR SPECIFICATIONS

PART I GENERAL

1.1 Related Work Specified Elsewhere

a. Complete and legal hoistway, reinforced concrete pit and machine room of dimensions and specifications required and shown on drawings.

b. 110 volt branch circuit to the terminals of the elevator controller for car light supply and 110 volt light and GFI outlet in the elevator pit, complete with switch adjacent to the pit ladder as shown on elevator drawings.

c. Extend the electrical service from power maine through a fused switch of ample capacity or shunt trip circuit breaker, to terminals of power unit controller and (if applicable) furnish shunt trip circuit breaker and heat detectors for sprinkler system.

d. Any cutting, patching or painting of walls and grouting under thresh-holds and hoistway frames.

e. Excavation and backfilling for trenches for piping or conduit.

f. Adequate supports for guide rail brackets with spacing per our drawings.

g. Sill supports for hoistway entrances.

h. Electrical current and lighting during erection and testing of equipment.

i. Necessary recesses to accommodate doors, sills, (min. 2 1/2" deep) and signal equipment such as indicators, push buttons, hall lanterns, etc.

j. Pit access ladder and/or 1 1/2 hour U.L. labeled pit access door complete with closer and one-way passage set.

k. General contractor to receive and store in the building approximately five (5) tons of elevator materials.

l. Smoke sensors in each elevator lobby including main floor and machine room complete with necessary wiring to elevator controller in accordance with A.N.S.I. A17.1 requirements, and (if required) at top of hoistway.

m. Others will provide means of two-way communication between elevator car and external receiver which is capable of receiving a call at all times. (Note; where specified, elevator contractor will furnish phone box complete with wiring to the machine room).

n. Proper machine room heating and ventilation necessary to maintain an operating temperature between 55 degrees F and 90 degrees F.

o. Proper hoistway venting in conformance with B.O.C.A. and ANSI Code when travel is 4 or more floors.

p. Heat detectors and shunt trip breakers for sprinkler system if required.

1.2 REGULATORY AGENCIES

Perform all work in accordance with the National Electrical Code, American Standard Safety Code and such State and local codes as may be applicable.

1.3 SUBMITTALS

a. Shop Drawings -
   (1) Submit six (6) blue print copies of elevator layout drawings to the architect for approval.
   (2) Upon completion submit to Owner, parts catalog and one set of wiring diagrams.

1.4 GUARANTEE

a. Elevator Contractor shall guarantee that materials and workmanship of apparatus installed by him under these specifications shall be first class in every respect; and that he will make good any defects not due to ordinary wear and tear or improper use which may develop within one (1) year from date of completion and installation.

b. In addition to the other requirements, inspection, test and remedies herein provided upon completion of elevator installation and before final approval and

final payment, Elevator Contractor shall make, in speed test with full maximum load on elevator to determine whether elevator equipment as installed meets the speed, capacity and all other requirements of the specifications.

c. In event equipment does not meet all requirements of specifications, Elevator Contractor shall promptly remove from the premises all work condemned by Architect as failing to conform to the contract and shall bear all expense of making good all work of other contractors destroyed or damaged by such removal or replacement. If Elevator Contractor does not remedy such condemned work within a reasonable time, fixed by written notice from Architect, General Contractor may correct such condemned work at expense of Elevator Contractor and withhold such cost from final payment under Contract price. In the event remainder due under Contract price is insufficient to cover such a cost, Elevator Contractor shall, immediately upon request, reimburse General Contractor in full.

1.5 PERMITS, TAXES AND LICENSES

a. All State permits, inspection fees and licenses necessary for the execution of the work shall be secured and paid for by the Elevator Contractor. Note: all local permits and fees are the responsibility of Owner or General Contractor.

1.6 TEMPORARY USE

a. The General Contractor, sub-contractors, Owners or others will not be permitted use of the elevators during construction except under a written agreement as stipulated by the Elevator Contractor.

PART II PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

a. Except as otherwise specified herein, or specifically approved by Architect, the Elevator Contractor shall regularly engage in installation of elevators of type specified herein, and shall be able to demonstrate at least three (3) installations of this type made by him within the State, which have provided satisfactory operation for a period of one (1) year prior to the date of receipt of General Bids for this project.

b. Demonstrate that he has provided satisfactory maintenance service for elevators of type specified

and that he has maintained a complete maintenance organization comprised of regularly employed inspectors and mechanics within the State for a period of at least one (1) year prior to the date of receipt of General Bids.

2.2 MATERIALS AND FABRICATION

a. Description of equipment: Holeless Hydraulic Passenger

Capacity:	2,000 lbs.
Speed:	100 fpm
Operation:	selective/collective
Platform Size:	7' 0"w x 5' 0"d
Travel:	12' or less
Power Supply:	208 volt, 3 phase, 60 cycle

Machine Location: approx 35' remote in basement

Stops & Openings: two (2) in line

Car Enclosure: Wood core walls finished on the interior with plastic laminate as selected from our standard color chart. The canopy will be white baked enamel. The finished car flooring by others under flooring section. Lighting for elevator cab will be direct fluorescent type over a suspended ceiling of acrylic panels in a brushed aluminum frame. Elevator car doors and return panels shall be plastic laminate. Signal fixtures and handrail (on rear wall) shall be stainless steel. Car will have a single speed exhaust fan.

Hoistway Door Frames: Hollow metal U.L. "B" labeled door, with square bolted frames, finish to be baked enamel as selected from our standard color charts.

Size & Type: Single-slide, side-opening type with a 3' 0" x 7' 0"h (clear opening) finish to be baked enamel as selected from our standard color chart.

Door operation: D. C. Power operation

Signals: Illuminated halo buttons, (braille) alarm bell. Car position indicator, hall position indicator at lobby, car traveling lantern with audible passing signal.

Motor HP: 20 hp, equipped with "soft-start", see deduct alternate for Y-Delta substitution.

b. JACK UNITS - HOLELESS HYDRAULIC TYPE

(1) The jack units shall be designed and constructed in accordance with the applicable requirements of the American Standard Safety Code for Elevators A-17. They shall be of sufficient size to lift the gross load the height specified. They shall be factory tested to insure adequate strength and freedom from leakage. No brittle material, such as grey cast iron shall be used in the jack construction.

(2) The jack units shall consist of the following parts: a plunger of heavy polished steel tubing accurately turned. A stop ring shall be electrically welded to the plunger to positively prevent plunger leaving its casing made of steel tubing and provided with a pipe connection and air bleeder.

c. PLATFORM AND SLING

(1) The platform and sling have a fabricated frame of formed and structural steel shapes, gusseted and rigidly welded. Flooring shall be wood top floor laid over wood sub-floor. Finished flooring shall be provided on top of the car platform by others.

(2) The sling shall consist of heavy steel channel stiles properly affixed to a steel crosshead and holster, with adequate bracing members to remove all strain from the car enclosure.

d. CAR DOORS

(1) The car entrance shall be provided with horizontal sliding doors. Panel rigidity to be obtained by suitable steel reinforcements. Doors shall be hung on sheave hangers with polyurethane tires and sheaves not less than 2 1/2" diameter running on a polished steel track and guided at the bottom by non-metallic shoes sliding in a smooth threshold groove.

e. ALARM BELL

(1) An emergency alarm bell shall be located in conformance with ANSI A.17 Code requirements and connected to a plainly marked pushbutton in the car. Alarm bell shall be connected to the emergency lighting power pack.

f. GUIDE AND GUIDE SHOES

(1) Guides for the elevator car shall be planed steel elevator guide rails, properly fastened to the building structure with steel brackets. The car stile shall be fitted at top and bottom with guide shoes with replaceable nylon gibs.

g. POWER UNIT

(1) Oil pumping and control mechanism shall be compactly and neatly designed with all of the components listed below combined in a self-contained unit; structural steel outer base with tank supports; floating inner base for mounting motor pump assembly; overhead oil reservoir with tank cover and controller compartment with cover; metal drip pan; and oil-hydraulic pump; and electric motor; and oil control unit with the following components built into a single housing; a high pressure relief valve; a check valve; and automatic unloading up start valve; a lowering and leveling valve; and a magnetic controller.

(2) The pump shall be especially designed and manufactured for oil-hydraulic elevator service. It shall be of the positive displacement type, inherently designed for steady discharge with minimum pulsations to give smooth and quiet operation. Output of pump shall not vary more than ten percent (10%) between no load and full load on elevator car.

(3) Drive shall be direct coupled submersible motor and pump.

(4) Submersible motor shall be especially designed for oil-hydraulic elevator service, of standard manufacturer and of duty rating to comply with herein specified speeds and loads.

(5) Oil control unit shall consist of the following

components, all built into a single housing. Welded manifolds with separate valves to accomplish each function will not be acceptable under this specification. All adjustments shall be accessible and shall be made without removing the assembly from the oil lines:

a. Relief valve shall be externally adjustable and shall be capable of bypassing the total oil flow without increasing back pressure more than ten percent (10%) above that required to barely open the valve.

b. Up start and stop valve shall be externally adjustable, and designed to bypass oil flow during start and stop of motor pump assembly. Valve shall close slowly, gradually diverting oil to or from the jack unit, insuring smooth up starts and up stops.

c. Check valve shall be designed to close quietly without permitting any perceptible reverse flow.

d. Lowering valve and leveling valve shall be externally adjustable from drop-away speed, lowering speed, leveling speed and stopping speed to insure smooth "Down" starts and stops. The leveling valve shall be designed to level the car to the floor in the direction the car is traveling when slow down is initiated.

(6) Electric Controller shall be of the full magnetic type or solid state integrated circuitry. Silver to silver contacts shall be utilized on all relays and contactors. Thermal overload relays to be provided to protect the motor. All component switches to be mounted in a steel panel designed for wall to floor mounting.

h. MAINLINE STRAINER

(1) A mainline strainer of the self-cleaning type, equipped with a 40 mesh element shall be furnished and installed in the oil line.

i. FAILURE PROTECTION

(1) The electrical control circuit shall be designed so that if a malfunction should occur due to motor starter failure, oil becoming low in the system, or the car failing to reach a landing in the up direction within a predetermined time,

the elevator car will automatically descend to the lowest terminal landing. If power operated doors are used, the doors will automatically open when the car reaches the landing to allow passengers to depart. The doors will then automatically close and all control buttons, except the "door open" button in the car station shall be made inoperative.

j. SOUND ISOLATING COUPLING

(1) Install a minimum of one in the oil line in the machine room between pump and jack.

k. OIL-HYDRAULIC SILENCER (MUFFLER DEVICE)

(1) Install in oil line near power unit. It shall contain pulsation absorbing material inserted in a blowout-proof housing arranged for inspecting interior parts without removing unit from oil line. Rubber hose without blowout proof features will be acceptable.

l. VIBRATION PADS

(1) Mount under the power unit assembly to isolate the unit from the building structure.

m. AUTOMATIC TERMINAL LIMITS

(1) Place electric limit switches in the hatchway near the terminal landings. Designed to cut off the electric current and stop the car should it run beyond either terminal landing.

n. AUTOMATIC SELF-LEVELING

(1) Provide elevator with a self-leveling feature that will automatically bring the car to the floor landings. This self-leveling shall, within its zone, be entirely automatic and independent of the operating device and shall also be maintained approximately level with the landing irrespective of the load.

o. BUFFERS

(1) Furnish and install substantial buffers under the car in the elevator pit. They shall be mounted on continuous channels fastened to the elevator guide rail or securely anchored to the pit floor and substantial extensions will be provided if required. Buffers shall comply with ANSI A.17.1 Code requirements.

p. CAR TOP INSPECTION STATION

(1) A car top inspection station with an "emergency stop" switch and with constant pressure "up down" direction buttons shall make the normal operating devices inoperative and give the inspector complete control of the elevator.

q. DOOR OPERATION

(1) Furnish and install a direct current motor driven heavy duty operator designed to operate the car and hoistway doors simultaneously. Door movements shall be electrically cushioned at both limits of travel and the door operating mechanism shall be arranged from manual operation in event of power failure. The leading edge of the car door shall be provided with retractable reversal edge arranged to automatically return car and hoistway doors to the open position in event the doors are obstructed during closing cycle. Doors will then resume closing cycle. Doors shall automatically open as the car arrives at the landing and shall automatically close after an adjustable time interval or when the car is dispatched to another landing. Direct drive geared operators, A.C. controlled units with oil checks, or other deviations from the above are not acceptable.

r. INTERLOCKS

(1) Equip each hoistway entrance with an approved type interlock tested as required by Code. The interlock shall be designed to prevent operation of the car away from the landing until the doors are locked in the closed position as defined by Code and shall prevent opening the doors at any landing from the corridor side unless the car is at rest at the landing or is in the leveling zone and stopping at the landing. Interlocks shall bear Underwriters' Laboratories "B" Label of approval.

s. HOISTWAY DOOR UNLOCKING DEVICE

(1) Provide hoistway door unlocking devices as specified by the ANSI A.17.1 Code to permit authorized persons to gain access to hoistway when elevator car is away from the landing.

t. DOOR HANGERS AND TRACKS

(1) For each hoistway sliding door, furnish and install sheave type two point suspension hangers and tracks complete. Sheaves shall be 2 1/2" in diameter and have polyurethane tires with ball bearings properly sealed to retain grease. Hangers shall be provided with an adjustable slide to take the up-thrust of the doors. Tracks are to be drawn steel shapes, smooth surface and shaped to conform to the hanger sleaves.

u. HOISTWAY ENTRANCES

(1) Hoistway entrances of the hollow metal, horizontal sliding type shall be furnished and installed complete at each of the hoistway openings. Note that entrances must be at least minimum legal width for wheelchair use.

a. Entrances shall be manufacturer's standard design and shall bear Underwriters' Laboratories "B" Labels. They shall consist of frames, sills, doors, hangers, hanger supports, hanger covers, fascia plates and all necessary hardware. Finish to be as specified previously.

b. The entire front wall of the hoistway is to be left open or a rough opening provided which is 12" greater in width and 6" greater in height than the finished opening, until after entrances are installed. After guide rails are set and lined, the entrance frames shall be installed in perfect alignment with the guide rails. Finish walls will then be completed by others.

v. OPERATION (SELECTIVE-COLLECTIVE AUTOMATIC PUSH BUTTON)

(1) Control of the elevator car shall be automatic in operation by means of a push button in the car marked for each of the landing levels served and "up-down" button at each intermediate landing with a call button at each terminal landing, wherein all stops registered by the momentary pressure of landing or car buttons shall be maintained until the car answers the call. An emergency stop switch shall be provided in the car push button station which, when in the off position, will render the elevator inoperative

and which will enable attendant or passenger to stop the car at any point during its travel. Opening of this switch shall not cancel registered calls and when the switch is closed the car will continue to answer calls that have been registered. Each landing station shall contain an illuminated push button which shall "light-up" when pressed to indicate that a call has been registered to bring the car to that particular landing. A time delay non-interference feature shall be incorporated in the control mechanism to allow ample time for opening and closing the car and hoistway doors before it is again placed in motion.

D.L.M. CORP.
P.O. Box 52
Portland, ME 04112
(207) 871-1660

City of Portland
Attn.: Sam Hoffsas
Mike Nuggent

RE: 555 Forest Ave. interior petitions fit-up.

Dear Gentlemen:

The following Labor and Material Specifications are a boiler plate for 555 Forest Ave. Currently, the first floor is vacant and the second floor is occupied by Bradish-Young Insurance. We propose renovating the first floor and adding one handicap bathroom for Braddish-Young. There will be no change of use or exterior work to the building. Renovations include the following:

1). Interior demolition (See demolition Plan)
2). New Interior Walls 5/8" sheetrock. Steel Studs will be used. (See Floor Plan)
3) 1 2000 lbs elevator with 2 layers of 5/8" sheet rock on the inside and one layer on the outside. (See Elevator and Structural Plans).
4). New electrical wiring with BX cable. BX is needed because the building is precast concrete and has a non-combustable roof. (See Material specs.)
5). Existing lighting to be reused with existing exit signs..
6). New drop ceiling.
7). New carpet.

The building is steel framing with Precast concrete. The Roof is steel with concrete and is non cumbistible therefore BX wiring will be used.

If you have any questions please Page myself or Tom Callahan at 823-6008.

Thankyou for your time.

Sincerely,

David L. McDonald
President
D.L.M. Corp.

LABOR AND MATERIAL

SPECIFICATIONS

FOR

555 FOREST AVE.

OWNER:

555 FOREST AVE. ASSOCIATES, LLC
555 FOREST AVE.
PORTLAND, ME. 04102

GENERAL CONTRACTOR:

DAVID L. MCDONALD
D.L.M. CORP.
DESIGN/BUILD GENERAL CONTRACTORS
P O. BOX 52
PORTLAND, ME. 04112

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DIVISION I - CONTRACT DOCUMENTS

SECTION 2 05

2.01

OWNER/CONTRACTOR AGREEMENT

GENERAL

The " Standard Form of Agreement between Owner and Contractor", AIA Document A101, Twelfth Edition, 1987 shall be executed by the Owner and the Contractor.

Basis of payment shall be Stipulated Sum Construction financing based on a turn-key project.

DIVISION I - CONTRACT DOCUMENTS

APPLICATION AND CERTIFICATION FOR PAYMENT

GENERAL

Project is based on a turn-key proposal. Contractor shall provide a base price plus contingencies. Financing construction will be based on interest payments and points paid by the Owner on a monthly basis.

DIVISION I - CONTRACT DOCUMENTS

SECTION 4.03

TEMPORARY FACILITIES:

TEMPORARY SERVICES

The Contractor shall maintain an office large enough for the review of Plans and proper facilities for storage of materials to be kept on the site. The office shall provide desk and file space for a Project Representative.

The Contractor shall provide adequate temporary toilet facilities and electric service.

TEMPORARY HEAT.

The Contractor shall responsible for providing all temporary heat, including necessary heating of concrete during cold weather as specified under.
DIVISION II - THE SPECIFICATIONS·

SECTION 0301 CONCRETE WORK.

The Contractor shall pay all costs of temporary heating.

JOB TELEPHONE:

The Contractor shall provide and maintain at his own expense a job telephone located in his temporary office.

DIVISION I - CONTRACT DOCUMENTS

SECTION 4.06

FINAL INSPECTION

FINAL INSPECTION These items must be obtained: 1. BUILDERS WARRANTY - signed and dated the same day as substantial completion. Serial numbers for all appliances and equipment to listed on the reverse.

2. ALL OTHER GUARANTEES - which are for more than one year, such as roof, siding, heating equipment, etc

3. CERTIFICATES OF INSPECTION

A. Plumbing - interior and exterior B. Electrical - local and state C Building inspector D. Oil burner man (when oil heat is installed) E. Blown insulation certification F. Water quality test

4. ARCHITECT'S CERTIFICATE - as to satisfactory completion and compliance with contract documents and with MPS.

5. CERTIFICATE OF SUBSTANTIAL COMPLETION - dated and signed with an attached sheet which describes work left to be done, (broken down to trades, amounts and materials), siting the overall cost. Also, stating date for completion. Wording should reference appropriate drawings and specifications the work.

6 FINAL CHANGE ORDER - the exterior work shall be summarized in a final change order which will state a new time and amount.

7. ALL PRIOR CHANGE ORDERS - at this time will be reviewed to see if action has been taken.

8. FINAL INSPECTION REPORT- must be completed and signed by the owner and contractor. Owner's Clerk of the Work or Architect is to review all prior inspection reports and certify to the project's completion.

9. AS-BUILT DRAWINGS - must be prepared and sent to all parties.

10. LETTER OF PUNCH LIST COMPLETION - Clerk of Work or Architect is to write this letter and it is to be verified by our inspection. Occupancy will await our final inspection.

11. EXTRA MATERIALS - to be left in small quantities to assist owner in normal maintenance of the project.

12. LANDSCAPING MANUAL - must be given to the owner describing how to maintain the lawns, shrubs and trees, etc.

13. FINAL PAYMENTS - to contractor and architect will be made at this time if the above are in order.

14. FINAL PAYMENT RECEIPT

15. LIEN WAIVERS - from all subcontractors, suppliers, materials men, etc

The list shall be reviewed for completeness by the Clerk of Works.

DIVISION I - CONTRACT DOCUMENTS

BUILDER'S WARRANTY

GENERAL

The General Contractor at substantial completion of the project shall submit signed and dated copies of the Builder's Warranty. The Builder's Warranty shall be signed and date the same day as substantial completion.

Serial numbers and all appliances and equipment shall be listed as indicated on the reverse side of the form.

DIVISION II - THE SPECIFICATIONS

SECTION 0101 GENERAL REQUIREMENTS

1.01 CODES AND STANDARDS

All work shall comply with applicable State and local codes.

Codes have been used as a minimum design criterion and no reduction will be permitted.

All work shall conform, meet and/or exceed the requirements set forth in the B.O.C A code.

1.02 DESIGN FEATURES

All design and design features that are particular to this project are the property of the Design/Build General Contractor and intended for this building only. They may not be reproduced in any form without the expressed written permission of the D.L.M. Corp.

1.03 PREPARATION FOR WORK

The General Contractor shall provide the Architect with the following:

A cost breakdown by trade sections of all work

A proposed progress schedule to establish the sequence and timing of each phase of the work.

A complete list of Sub-contractors.

Evidence of insurance with cancellation notice as called for in the General Conditions.

The Contractor shall provide Superintendent or Project Manager who is responsible for all work done. No Subcontractor work shall proceed without his control.

The Contractor shall employ only workers skilled in all work they perform.

All materials and equipment shall be new and function properly.

Where specific items are not called for, assume good serviceable grade as required for a complete installation.

Substitution for specified materials will be reviewed by the Architect upon submission of complete information. Substitutions after the Contract award shall be made only on the approval of the Owner, lender and the Architect.

The Site shall be maintained clean, neat, well-drained and safe at all times. All work shall be

performed and/or installed to conform to all the requirements of the Occupational Safety and Health Act of 1970, and all Amendments thereto

1 04 DELIVERY AND STORAGE

All materials shall be in marked containers or other easily distinguishable form, stored off the ground, under cover and protected from the weather, damage and theft.

1.05 SAMPLES AND SHOP DRAWINGS

Shop drawings, where called for or needed for thorough understanding of the work, shall be submitted in three minimum copies to the Owner or Architect. Shop drawings shall be submitted thirty days of the award of the Contract and shall be returned within five working days. If resubmission is required, the Architect will endeavor to return the submission within five days.

Before submission, the General Contractor must check all submissions.

Samples showing color and quality range of materials shall be submitted within thirty days of the Contract award.

TEMPORARY FACILITIES

Refer to Division I

PROJECT SIGN

The General Contractor shall provide and erect a project sign as specified with Contractor's name and company office telephone numbers.

1.08 PROJECT CLOSE-OUT

Refer to Division I for Final Inspection Requirements.

1.09 BUILDER'S WARRANTY

The General Contractor shall submit the Builder's Warranty as specified under Division I.

DIVISION II - THE SPECIFICATIONS

SECTION 0102 ALLOWANCES

1.01 GENERAL

It is understood that the General Contractor shall include the following allowances in the Contract price

1.02 PLANTING ALLOWANCE

The General Contractor shall include an Allowance of $3,000.00 to furnish and install Landscaping, trees, and shrubs as shown and specified.

DIVISION II - THE SPECIFICATIONS

SECTION 0201 WORK EMBRACED

2.01 SITEWORK

The Contractor shall do all work and furnish all the materials, tools, equipment and machinery necessary as proper for the performance and completion of the work herein specified. The site work shall include, but not limited to, all excavation, gravel, loam and common fill, bituminous concrete, piping, drainage facilities, grading and any other work necessary to produce a complete and satisfactory job whether specifically called for or not within the limits of work shown on the PLANS.

2.02 GENERAL

All structures, including paving, walks, gravel or street surfaces, underground facilities and lawn areas, etc., that may be damaged or destroyed by the Contractor's operation, shall be repaired and replaced by him at his own expense.

The Contractor shall accurately locate and lay out the work in the field from the information supplied on the PLANS. Architect's approval of layout shall be obtained before excavation is begun.

The Owner shall be responsible for all fees and permits in connection with sewer entrance, road opening road access, etc., with the Town, State and/or Utility companies.

All work shall conform to all applicable State and local codes, regulations and permits.

DUST CONTROL: Adequate measures shall be taken to assure that excessive dust from construction activities is not allowed to create a nuisance or otherwise adversely affect the area adjacent to the construction site.

2.03 SITE PREPARATION

DESCRIPTION: Site preparation shall consist of supplying all labor, materials and equipment necessary to prepare the site for excavation and/or construction. It shall include clearing, grubbing and stripping.

GENERAL: Included in this section shall be the removal of all material in the areas designated on the PLAN. Vegetation shall be totally removed and disposed of in a satisfactory manner. Soils stripped from any designated areas shall be stockpiled for reuse unless such soils are classified as unsuitable by the Architect

CONSTRUCTION METHODS: in vegetated areas designated for clearing, grubbing and stripping, the Contractor shall cut and remove all trees, brush and undergrowth, but shall protect

all vegetation outside the limits of areas designated and any trees so designated within the area Any branches which must be removed from standing trees shall be removed in a manner in accordance with established arborists' practices. All scars and cuts in standing timber shall be painted with a bituminous paint.

In areas to be stripped, the Contractor shall strip the surface to a sufficient depth to expose a uniform subgrade of soil.

2.04 STRUCTURE EXCAVATION

DEFINITION: All excavation for foundations and subsurface structures shall be covered by this specification and shall be classified as either earth or ledge excavation.

Earth excavation shall consist of removal of all grades of soil sufficiently friable to be worked with an excavator. This shall include any other material less than one cubic yard in volume

Ledge excavation shall consist of removal of all material not classified as earth and more than one cubic yard in volume. Contractor shall carry a ledge clause in builders specification and material list.

Structure excavation shall include furnishing all equipment, labor and materials necessary to perform the excavation and backfill as indicated on the plans and herein specified.

GENERAL: All structure excavation shall provide sufficient working area to construct the structure. The Contractor shall provide all sheeting, shoring, bracing and cofferdamming necessary to insure the stability of the sides of the excavation. The Contractor shall provide all pumping and/or drainage necessary to maintain a dry, firm bottom.

UNSUITABLE MATERIAL: Where unsuitable material is encountered it shall not be incorporated into the work. Unsuitable materials shall be replaced with suitable material.

BLASTING AND LEDGE EXCAVATION: The Contractor shall remove all overburden from any ledge encountered and shall contact the Architect prior to it's removal.

All blasting shall comply with all Federal, State and Local regulations. Warning signs shall be posted whenever blasting occurs. No blasting shall be permitted without blasting mats or sufficient soil overburden.

All ledge removed shall be considered unsuitable. If overblasting occurs, the Contractor shall replace this ledge with suitable material at the Contractor's expense. If material is required to replace ledge removed, its cost will be considered incidental to the ledge removal price.

CONSTRUCION METHODS: The Contractor shall at all times keep the excavation free of water and saturated soil. Water removed from the excavation shall be disposed of so not to interfere with adjacent areas. The bottom of the excavation shall be kept dry and firm at all times.

No backfilling around concrete walls shall be permitted until they have attained sufficient strength to support all loads to which they are subjected. Compaction of backfill around structures shall be accomplished by waterjetting, puddling, tamping or rolling. Backfill shall be compacted to a density of 95% of the optimum density as determined by the modified proctor test.

OVER EXCAVATION. Any excavation beyond the proscribed limits, as shown on the PLANS or specified herein, shall be filled with crushed stone to the necessary grade at the Contractor's expense.

2.05 TRENCH EXCAVATION

GENERAL: This contractor shall provide trench excavation as shown and specified.

Information on underground structures and utilities shown on Plans is not guaranteed for accuracy nor completeness, therefore, when excavation approaches such utilities, manual excavation shall be used to locate them. The Contractor shall be held liable for responsible excavation practices throughout the project. This responsibility shall include the undisturbed main tenance of all structures, above or below grade, which may be affected by the excavation.

CONSTRUCTION METHODS: All trench excavations shall be extended to at least 6" below the bottom of the pipe and backfilled to the required grade with crushed stone. This bed stall be thoroughly compacted by approved means before any pipe is laid. Trench width shall be at least 16" greater than the diameter of the pipe, but in no case less than 36" and no greater than 60".

After the pipe has been positioned at the correct slope, alignment and elevation, crushed stone shall be placed and compacted in 6" layers to at least 6" over the top of the pipe. This encasement shall be thoroughly compacted before final backfilling. The trench shall be kept free of water at all times.

SHORING AND BRACING: All earth excavation over 4 feet in depth shall be shored and braced or sloped in an acceptable manner. In areas which are suitable and acceptable the Contractor may open cut by sloping the sides of the trench back at a 1 to 1 slope.

BLASTING AND LEDGE EXCAVATION: Refer to paragraph 2.04 of this section.

2.06 BACKFILLING

GENERAL: The scope of work entailed in backfilling shall include furnishing all labor, equipment and materials necessary to completely fill any excavation.

Backfilling shall be defined as replacement and compaction of soil in excavation for the purposes of protecting under ground construction construction, maintaining grades, or providing stable foundation material for above ground construction

MATERIAL: generally the excavated soil shall be suitab] as backfill and shall be replaced in the

excavation. exceptions include frozen fill, containing large stones, stumps or other rubble, and any material deemed unsuitable by the Architect.

When unsuitable material is encountered, the Contractor shall replace it with fill acceptable to the Architect This shall also apply to any additional fill required except to replace ledge

CONSTRUCTION METHODS: Backfilling shall proceed as possible after all underground construction has been completed. Underground construction includes encasement of pipe, removal of any formwork and removal of all trash and debris. Fill shall be placed in layers not to exceed 12" and compacted to a density equal to at least 95% of the optimum density determined by the modified proctor test. Compacting may be done by hand, vibrating compactor, roller, water or any combination. With any method the Contractor shall take care not to damage or disturb any structure including his own, being backfilled and shall be held liable for any damage. Backfill shall be extended to the grades indicated on PLANS, compacted and graded. Excavations in paved areas shall be paved according to specifications as soon as possible. Other areas shall be loamed and seeded or otherwise restored to a condition equal to or better than that of adjacent areas. Any backfilling which does not conform to these specifications, or which settles differentially, shall be excavated to a depth sufficient to correct the problem and refilled as required.

2 . 07 PAVING AND SURFACING

GENERAL: The work of this section includes the furnishing all labor, materials and equipment necessary for paving and surfacing of roadways, drives, parking areas and sidewalks as shown and specified.

MATERIALS:

Common Borrow: Common borrow shall consist of earth suitable for fill. It shall meet the following criteria.

Moisture content	Less tha 4% above optum
Particle size	75mm - .005mm
D/10 (effective size)	.06mm - .04
Uniformity coefficient	6 - 10

Gravel: Gravel shall be screened or crushed gravel of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The maximum stone size is 6". The gradation of the part that passes a 3 inch sieve shall be an even gradation and meet the requirements of the following table

Sieve Designation	% by Weight Passing
1/4"	25 - 70
No. 40	0 - 30
No 200	0 - 5

Screened Gravel: This material shall consist of clean hard, durable particles ranging in size from 1Omm to 20mm unless otherwise specified. Screened gravel shall be free or dirt, vegetation, disintegrated or laminated soils and other unsuitable material. Crushed stone may be substituted for screened gravel providing the grading and size are comparable.

Binder Course: The binder course shall be a high bi luminous pavement. Its gradation shall conform to a Grade "B" mix as delineated in Section 703 - Aggregates Subsection 703.09 of the Maine Standard Highway Specifications. The Contractor shall provide adequate shoring on existing parking lot. Excessive grass in existing cracks shall be killed and liquid tar shall fill any and all cracks.

Wearing Course: Not Required.

INSTALLATION.

Layout of Work· The work shall be laid out to true lines and grades in accordance with the drawings. Grades and staking shall be the Contractors responsibility

Clearing: All clearing operations shall conform to Section 201 of the Maine Standard Highway Specifications Subsection 201.01 through 201.10 inclusive.

Excavation and Embankment: After the designated areas have been cleared, checked and approved, excavation and embankment operations shall be performed in accordance with Section 203 of MSHS, Subsections 203.01 through 203.12 and 203.15 through 203.17 inclusive.

Gravel: After subgrade has been constructed to grade, compacted, checked and approved, gravel shall be placed in accordance with Section 304 of the MSHS, Subsection 304.03 through 304.05 inclusive

Screened Gravel: After the gravel has been constructed to grade, compacted, checked and approved, screened gravel shall be dumped and spread as required. The quantity of screened gravel shall be limited to the amount necessary to fill the voids and minor low areas in the gravel. The screened gravel shall be completely rolled by a rubber tired roller (truck rolling acceptable) and water applied. Temporary Erosion Control: During construction the Contractor shall install temporary erosion checks, berms, dumped stone, hay mulch or jute mesh as required

2.08 LOAM AND SEED

GENERAL: Furnish and install all loam and seeding work were the Contractor has damaged existing property. It is the intent of this specifications that the Contractor be responsible for providing a health grass cover over the areas as designated on the plans and areas disturbed by construction. Such responsibility shall extend 12 months from project completion.

MATERIALS

Grass seed shall have the following composition by weight:

20% Kentucky Blue Grass
10% Red Top
20% Stalren Rye Grass
45% Creeping Red Fescue
5% Dutch White Clover

Lime shall be ground limestone containing not less than 85% total carbonate. At least 90% shall pass through a No. 20 sieve and at least 50% shall pass through a No 100 sieve.

Fertilizer shall be a commercial fertilizer with the following minimum percentages:

10% available nitrogen (5% organic) 10% available phosphoric acid 10% available potash

Topsoil shall be natural, friable clay loam free of stones weeds and other vegetable matter, roots rubble and other material which might hinder the planting, growth or maintenance of the areas. The minimum depth of loam shall shall be 4".

Mulch shall be clean hay not more than one year old.

WORKMANSHIP:

The recommended seeding periods are from April 1 to June 1 and from August 15 to October 1. The Contractor may seed at other times, but he shall be resposible for a full growth of grass When directed, he shall re-fertilize and re-seed areas on the project which do not develop a satisfactory growth of grass.

Fertilizing and liming shall be done when the soil is in a moist condition and at least 24 hours before sowing the seed. The fertilizer and lime shall be applied to the soil by means of a mechanical spreader or approved method capable of maintaining a uniform rate of application and shall be thoroughly harrowed, raked, or otherwise mixed with the soil to a depth of not less than 1 inch.

Grass seed of the required mixture and quality shall be sown by a mechanical seeder or other method which will sow seed uniformly at the required rate over the entire area to be seeded. The mechanical seeder shall be capable of being operated to avoid the growth of grass in rows and shall be so operated. After seeding all areas shall be lightly raked by hand to mix the seed and topsoil and shall be rolled with a light lawn roller

All seeded areas shall be mulched with hay applied at the rate of 40-45 lbs. (1 bale) to approximately 300 sq. ft. of area. The result shall be a firm sod with healthy grass growth sufficient to prevent any erosion of the soil.

2.09 EROSION CONTROL

GENERAL. Erosion control shall consist of supplying all equipment, labor and materials necessary to prevent erosion from occurring on areas as may be designated on the plan.

It is the intent of this specification that the Contractor shall be responsible for providing interim protection on disturbed areas until sufficient vegetative cover has been established. Erosion control shall be considered incidental to appropriate items of the Contract.

MATERIALS: Jute mesh shall meet specifications of Soil and Water Conservation Service

Bales of hay shall have minimum dimensions of 1'-6" x 1'-6" x 3'-6" and shall weigh at least 40 lbs.

CONSTRUCTION METHODS: The Contractor shall place the jute mesh on all disturbed swales at 150' intervals and at all catch basins.

2.10 CLEANUP

GENERAL: Cleanup shall consist of all work required to maintain all work areas in a neat and orderly condition. Cleanup shall be considered incidental to the appropriate items of the Contract.

The Contractor shall remove all debris and surplus material resulting from the work, and shall maintain all property, both public and private, in a condition acceptable to the party having jurisdiction. Cleanup of trench areas shall be done concurrently with pipe installation.

END OF SECTION

DIVISION II - THE SPECIFICATIONS

SECTION 0202 TREES, SHRUBS AND LANDSCAPING

2.01 GENERAL

Furnish and install trees, shrubs and landscaping as shown and specified.

This Contractor shall protect all trees and shrub under this work until accepted by the Owner

All trees and shrubs shall be guaranteed for a minimum of one year.

The Contractor shall include in his contract price the sum of $3,000.00 for planting allowance

2 02 PROTECTION

This Contractor shall take all necessary precautions to avoid damage to underground utilities.

2.03 TESTING AND SOIL TREATMENT

This Contractor shall be responsible for analyzing the soil for the suitability of species planted in regard to the soil's physical and chemical composition and to the incidence of harmful animal, fungus or bacterial life.

This Contractor shall provide soil treatment as required by the planted species. Should unsuitable conditions be found which would affect proper growth and survival of the trees or shrubs, notify the Architect.

2.04 MATERIALS AND WORKMANSHIP

Refer to the PLANTING PLANS for required trees and shrubs.

All planting shall be done in accordance with State and County recommendations and good horticultural practices for each species

This Contractor shall provide all necessary fertilizer and cultivation as required All planting, lime, fertilizer, and mulching shall be of the finest quality.

This Contractor shall instruct the Owner in proper maintenance of trees and shrubs, as well as watering requirements, and shall make periodic inspections as required to ensure proper growth and survival of the trees and shrubs until final inspection by the Owner.

WOOD MEMBERS: All wood members (except cedar) placed in contact with or below ground shall be pressure treated.

DIVISION II - THE SPECIFICATIONS

SECTION 0203 SITE UTILITIES

2.01 GENERAL

Site utilities for Electrical, Sewer, Telephone Service is already Existing. The Contractor shall provide (One) Two thousand lbs. Propane Gas Tank and line.

Site utility work shall include but not limited to the following:

Water Mains and Service
Sanitary Sewer
Electric Service
Telephone Service
Television Service

2.02 CODES

All work shall conform to all applicable state and local codes. This Contractor shall pay all necessary fees, licenses and permits.

2.03 RECORD DRAWINGS

The Contractor shall keep on the job a set of blue line prints on which he is to record the "as-built" conditions as the work progresses. At the conclusion of his work, he shall turn the record drawings over to the Owner.

2.04 RELATED WORK SPECIFIED ELSEWHERE

SITEWORK
PLUMBING
ELECTRICAL

2.05 VERIFYING MEASUREMENTS

The Contractor shall verify all scale measurements indicated on plans with the existing work and conditions found on the site, and accommodate work thereto.

2.06 SEPTIC TANK (NOT REQUIRED)

2.07 SANITARY SEWER PIPING (NOT REQUIRED)

Gravity sewer pipe shall conform to ASTMD-3034 equal to Johns-Manville "Ring Tite" PVC

sewer pipe. Refer to plans for required sizes.

2.08 WATER PIPE

Underground service piping shall consist of type "K" copper tubing, acrylonitrile-butadiene - styrene (ABS), Polyvinyl chloride (PVC) or polyethylene rated for minimum pressure of 150 psi. Fittings shall be suitable for the type of pipe used.

Curb valves shall be cast brass conforming to ASTM designations B-62 with copper service threads conforming to AWWA specifications C-800-66, table 2. Valves shall have "O" ring seals of synthetic rubber conforming to ASTM designation D-2000. Valves shall have a working pressure of 175 lbs per inch. Provide one shut-off rod for valves.

Cast iron curb boxes for 1 inch to 2 inch valves shall be extension type curb boxes. Curb box lids shall have steel upper section held in place with a bronze spring. Curb box lids shall have a brass plugs with pentagon shaped heads, and lids marked "water". Each curb box shall have a cast iron foot piece to support the curb base. Provide one pentagon key for removal of plugs.

2.09 SANITARY MANHOLES (NOT REQUIRED)

2 10 FOUNDATION DRAINAGE (NOT REQUIRED)

2.11 TRENCHING (NOT REQUIRED)

2.12 LAYING PIPE

All excavations are to be kept dry and free of ice and frozen soil while pipe is being laid. No pipe shall be laid in water, on frozen trench bottom or when the trench conditions or the weather are unsuitable for work.

The pipe and accessories shall be inspected for defects prior to lowering into the trench. Any defective, damaged or unsound materials shall be replaced. All foreign matter or dirt shall be removed from the interior of the pipe and accessories before lowering into position in the trench. Exposed ends of all pipes shall be protected with approYed stopper to prevent earth and other substances from entering the pipe. Pipe shall be clean during and after the laying.

All pipe, fittings and accessories shall be carefully lowered into the trench using suitable equipment, in such a manner as to prevent damage to pipe and fittings. Under no circumstances shall the pipe or accessories be dropped or dumped into trench.

All pipe shall be laid with extreme care as to grade and alignment. The ends of pipes to be jointed, the gaskets, and inside of sleeves or bell ends to be wiped clean immediately before jointing the pipes Each pipe shall be laid as to form a close joint with the next adjoining pipe and to bring the inverts continuously to the required grade. The bell end shall be toward the rising grade and each section of pipe shall have a firm bearing throughout its length. Suitable coupling holes shall be dug

to provide ample space for making joints. No blocking shall be used.

The assembly of the coupling shall be as recommended by the manufacturer. The end of the pipe which enters masonry shall be neatly cut to fit the inner face of the masonry.

Inorder to insure a minimum amount of movement or dis turbance, no more than two lengths of pipe may be laid before backfilling to a minimum of 12 inches over the pipe. No walking upon or working over the pipes after they are laid will be permitted until they are covered earth to a depth of at least 12 inches, except as may be necessary in tamping the earth and backfilling.

The pipe shall be bedded in sand of uniform density, carefully shaped to fit the lower part of the pipe exterior for at least 10% of its overall height. Where rock in either ledge or boulder formation is encountered it shall be removed to a line 6 inches below the bottom of the pipe barrel. No part of any rock remaining in the trench shall come within 6 inches of any portion of the pipe. Pipe shall be embedded in sand from 6 inches below the pipe to 6 inches above the pipe. Each layer shall be moistened and then compacted by rolling or by tamping with mechanical rammers. Comppaction with iron hand tampers having a tamping face not exceeding 25 sq. in. in area, but only after permission is given by the Architect. Special care shall be taken to thoroughly compact fill under haunches of the pipe. This method of filling and compacting shall be continued until the material is level with the top of the pipe. The remainder of the filling shall consist of suitable material placed in successive layers not more than 6 inches in depth. Each layer shall be thoroughly compacted as specified above. Puddling the backfill will not be permitted. Trenches crossing roads, walks and parking areas shall be back filled with gravel borrow and compacted to not less than 95% of the maximum dry density.

Water line installation of copper tubing and plastic pipe shall be in accordance with the manufacturer's recommendations.

Sewer line installation of asbestos cement pipe, plastic pipe or ABS pipe shall be in- accordance with the manufacturer's recommendations.

2.13 SEWER TESTING (NOT REQUIRED)

The Owner shall be responsible for testing the sewer line. After placement of a pipe between two man holes and prior to backfilling, the Contractor shall check the horizontal and vertical alignment of the pipe. The Contractor shall relay all sewer pipe which is out of alignment.

The local plumbing inspector shall be notified sufficiently in advance of all test in order to observe them.

2.14 WATER LINE CLEANING AND TESTING

CLEANING: All piping shall be blown out and made clean from scale, water or sledge. The Contractor shall be responsible for all sterilization of water piping required by State and Local codes. The Contractor shall make arrangements for such sterilization and all State and Local

authorities required by code shall be informed in writing one week prior to the sterilization work, inorder that they may be present during this work.

TESTING: The Local plumbing inspector shall be notified sufficiently in advance of all tests in order to observe them. Water line piping shall be tested to a hydrostatic pressure of 150 lbs. per square inch and it shall hold tight for a period of two hours. All joints of pipe being tested shall remain exposed until testing is completed and and all leaks are located and repaired.

2.15 ELECTRIC TELEPHONE AND TELEVISION SERVICE

Electric, telephone and television service shall be as shown and specified in accordance with the Electric Plans and Specifications. All work shall be in accordwith the local electric company specifications and requirements.

DIVISION II - THE SPECIFICATIONS

SECTION 0301 CONCRETE WORK

3.01 GENERAL

The work covered by this section is to include the providing all plant, labor, materials and equipment necessary to construct all plain and reinforced concrete work, as indicated on the Drawings and/or herein specified.

The work covered by this section shall include, but is not restricted to the following:

Concrete slab-on-grade.

Finishing of exposed concrete.

Cutting, patching, and the installation of inserts, anchors, dowels, bolts and sleeves embedded in concrete.

3.02 APPLICABLE SPECIFICATIONS

The latest issue of the following specifications and practices shall become a part of these specifications unless superseded by a particular requirement of this specification or the Drawings.

"Manual of Standard Practice" of the Concrete Reinforcing Steel Institute.

"ACI Building Code" of the American Concrete Institute.

"American Society of Testing Materials", referenced sections.

3.03 SHOP DRAWINGS

Submit to the Architect five minimum copies of shop and erection drawings for approval. All shop drawings shall conform to ACI 315-65 and shall be complete in all details. No work shall be fabricated without approval.

3.04 FORMWORK

Formwork shall be constructed in accordance with ACI 347, latest edition recommendations. The removal of forms shall be done in such a manner as to assure the complete safety of the structure, and forms shall not be removed until the concrete has sufficient strength to safely carry its own weight and all loads which will be put on it.

3.05 REINFORCEMENT

Concrete reinforcement shall be in accordance with the "Manual of Standards for Reinforced Concrete Construction" as published by the Concrete Reinforcing Steel Institute.

Reinforcing steel shall be accurately positioned and secured against movement by iron wire ties, clips or welding. Heating bars to facilitate bending shall not be allowed. Clean reinforcement of scales, rust, dried mortar, and mud before covering with concrete.

Reinforcing bar clearances shall be 3" when unformed face of concrete is in contact with earth, 2" where formed face of concrete is in contact with earth and 1" at slabs, beams and piers.

3.06 PROPORTIONING

The proportions of cement, fine and coarse aggregate and water shall be determined by trial mixes to give the specified strengths in accordance with these specifications. A :opy of the mix design and results of laboratory gradation and compressive strength tests shall be submitted to the Architect prior to starting construction. Mix design shall be certified by a professional engineer. The concrete mix design shall be air entrained.

TYPE OF CONSTRUCTION	COMPRESSIVE STRENGTH REQUIRED IN PSI	SLUMP IN INCHES MAX.	MIN.
FOOTINGS	2500	5	1
PIERS AND WALLS	3000	5	1
SLAB ON GRADE	3000	4	1
EXTERIOR SLABS	3500	4	1

3.07 TESTS

Prepare standard test cylinders in accordance with ASTM C-31. Cylinders shall be properly marked, cured, and shipped to a laboratory for testing and the result shall be sent to the Owner or Architect in duplicate. Cost of testing shall be included in the cost of concrete.

Make two test cylinders for each day's pour in excess of five yards. Maintain a log showing cylinder designation and exact location of concrete represented. Test one cylinder at seven days and one at twenty eight days.

Slump tests shall be made on each load of readymixed concrete in accordance with ASTM C143.

3.08 MIXING

Concrete shall be ready-mixed concrete, mixed and delivered in accordance with ASTM C-94.

All concrete shall be discharged from truck mixers within 1i hours, or before the drum has been revolved 300 revolutions, which ever comes first after the introduction of mixing water to the cement aggregates.

3.09 PLACING

Prior to placing concrete, clean all equipment used for mixing and transit of concrete, remove all debris form place to be occupied and accurately position forms.

Construction and control joints shall be placed where shown and in no case more than 80 feet apart in walls and slabs. Reinforcement shall be continuous through the construction joint. All construction joints shall be subject to approval of the Architect.

Concrete shall be conveyed from mixer to place of deposit by methods which will prevent separation of materials.

Concrete shall be placed as nearly as practicable in final position. The use of mechanical vibrators to move concrete laterally will not be allowed.

Concrete shall be placed in lifts not exceeding 18 inches. The concrete shall not be allowed to drop freely more than 4 feet. Internal vibrators shall be used to consolidate all concrete sections of more than 12 inches in depth.

3.10 CURING

Forms shall be left in place until the concrete has attained a compressive strength of at least 500 psi, or until the concrete can support immediate loads, whichever is greater.

Exposed concrete surfaces shall be kept moist for at least 7 days after deposited.

Concrete slabs shall be treated with a curing compound in accordance with the manufacturer's recommendations.

During cold weather, the concrete shall be protected by maintaining the air around the concrete at 50^F for the first 3 days after placing and protecting from alternating freezing and thawing for at least 7 days after placing.

3.11 TEMPORARY HEAT

Temporary heating shall be provided for protecting the concrete during freezing or near freezing weather. The equipment shall distribute the heat evenly, and shall not be positioned directly onto fresh concrete. provide adequate ventilation.

3.12 FINISHING

All floor slabs shall be screeded and immediately darbied or bull floated. After all water has left the surface, the slab shall be steel troweled to a true, dense, smooth finish.

Finish concrete floor surfaces shall be within a tolerance of 1/2" in 10'-0".

All walls and concrete surfaces shall have all fins removed and depressions filled upon removal of forms. Patching cement shall be one part Portland cement and two parts sand floated flush with the concrete surfaces.

Exposed floor surfaces shall receive three coats of floor hardner applied as recommended by the manufacturer.

Exterior concrete slabs and pads shall have a non-skid broom finish.

3.13 CONSTRUCTION AND CONTROL JOINTS (NOT REQUIRED)

3.14 MATERIALS

CEMENT: Shall be Portland cement conforming to the latest requirements of ASTM C-150, Types I, II, or III.

FORMS: (NOT REQUIRED)

REINFORCEMENT: (NOT REQUIRED)

WATER: Fit to drink.

CURING COMPOUND: Shall be Horn Clear Seal as manufactured by Grace Co. or equal.

ADMIXTURES: Air entraining ASTM C-260. No other admixtures shall be allowed without written approval by the Architect.

FLOOR HARDENER: Hornolith or Hornstone, Grace Co., Lapidolith, Sonneborn or equal.

FORM OIL: Non-staining type.

VAPOR BARRIER: Under slabs - 2 milt black polyethylene "Moistop" as manufactured by American Sisalkraft Co., "plybar" as manufactured by Glas-Craft or approved equal.

JOINT FILLER: 1" thick premolded type, asphalt saturated fiber.

DAMP-PROOFING: (NOT REQUIRED)

DIVISION II - THE SPECIFICATIONS

SECTION 0401 MASONRY

4.01 GENERAL

Furnish and install all masonry work as shown or specified.

4.02 WORK BY OTHERS

Before proceeding with masonry work, contact other trades and arrange to build in all anchors or other items coming in contact with masonry.

4.03 WORKMANSHIP

Masonry shall be kept perfectly plumb and true to a line and shall be laid in straight and uniform courses with the units in the course above breaking joints with the course below.

Mortar to be machine mixed, two minutes each batch. Water shall be kept to a minimum and accurately measured. Mortar containing cement shall be laid within thirty minutes from the time it leaves the mixer.

4.04 MATERIALS

BRICK: Facing brick, grade SW were indicated on plans.

No brick repointing will be done excluding were fixed Air Handilers will be replaced with brick. Contractor shall remove all lose debris and match mortar replaced.

CONCRETE MASONRY UNITS: Shall be grade A, Portland cement with sand and gravel aggregate.

MORTAR: Type B, masonry type II. Mix 1:3
Type B, cement. Mix 1:1:6

WATER: Fit to drink.

FLUE LINING: (NOT REQUIRED)

DIVISION II - THE SPECIFICATIONS

SECTION 0501 METALS

5.01 GENERAL

Furnish and install all structural and miscellaneous metals as shown or specified.

5.02 STRUCTURAL METALS

SHOP DRAWINGS:

Submit for approval four minimum prints of shop and erection drawings. Drawings shall be complete in all details. No work shall be fabricated without this approval. ALL SUBMITTALS SHALL CONSIST OF EXISTING STRUCTURAL. At this time the contractor is not moving any structural lally columns.

STANDARD PRACTICE:

All design, fabrication and erection of structural steel shall be in accordance with the specifications for the "Design, Fabrication and Erection of Structural Steel for Buildings" adopted Feb. 12, 1969.

QUALIFICATION OF WELDERS:

All welders and welding operators shall be qualified, and shall be certified welders who have been previously qualified by test as prescribed in the Standard Code for Arc and Gas Welding in Building Construction of the American Welding Society.

ANCHOR BOLTS:

All anchor bolts are to be furnished under this section of the Specifications and Shall be set by the Concrete Contractor or as required by the work.

FABRICATION:

Fabricate in accordance with the best modern practices. Tolerances shall be within industry standards. Base fabrication on field dimensions.

All exterior materials or those exposed to wet conditions to be galvanized, especially all fastenings.

Consult mechanical trades for access panels to be provided for valves and other maintenance items.

All welders shall be certified and shall perform all welding in accordance with Standard Code for Arc and Gas Welding in Building Construction, latest edition, as formulated by the American Welding Society. Welds shall be ground smooth ready for paint where exposed.

All fabricated materials to be based on field measure and to be accurate within 1/8" total tolerance.

Provide all necessary bracing and anchorage.

5.03 MISCELLANEOUS METALS

Steel for miscellaneous structural shapes shall be ASTM A-36 with a minimum yield point of 36,000 psi. Steel to be shop painted with red oxide primer. Touch up in field where marred.

Provide chrome finish escutcheon plates as required to conceal gaps at all wall, floor or ceiling penetrations. Escutcheon plates furnished under mechanical and electrical trades to conform.

Furnish, fabricate and install all steel, aluminum, etc. angles, clips, plates, tubes, shields, pipes, inserts, reinforcing wire and other miscellaneous shapes as shown or called for on the Construction Documents, or which may be required to make the building complete.

Louvers shall be aluminum type with screening of type suitable for the intended use. Refer to Drawings for sizes. Mechanical louvers shall be furnished and installed under Division II - Section 1500.

Eave vents shall be formed of aluminum with 1/8" per forations with white mill finish. Vents shall be SOFVENT as manufactured by Leslie-Locke or approved equal.

Ridge vents shall be as specified under DIVISION II SECTION 0701.

DIVISION II - THE SPECIFICATIONS

SECTION 0601 CARPENTRY AND MILLWORK

6.01 GENERAL

Furnish and install all carpentry and millwork as shown or specified.

All lumber and plywood shall bear grade and trade marks under whose rules it is produced and a mark of mill identification. All lumber shall be kiln dried. Finished lumber shall not exceed 12%, framing lumber shall not exceed 18%. All lumber shall be free of stains, animal life, blemishes, be sound, well manufactured, and free of warp within limits of grading rules. All lumber shall be dressed finished.

All lumber and plywood shall be worked to sizes and profiles as shown or specified.

6.02 WORKMANSHIP

Install carpentry, millwork and factory items in strict accordance with details on Drawings or as per manufacturer's directions. Use thoroughly skilled experienced mechanics.

6.03 ROUGH CARPENTRY

All framing shall be closely fitted, accurately set to required lines and levels. No splicing, unless shown on the Drawings. All studs, joists, blocking, grounds, nailers and cants, etc., shall be securely nailed, bolted, wired, glued, Ram shot, or anchored in place.

6.04 FINISH CARPENTRY

Execute all job and shop fabricated work in accordance with details making modifications only on approval of the Architect. Bevel all splices in woodwork, splice only where shown using longest lengths available. All surfaces shall be straight, plumb, level, clean and permanently held. Glued joints shall be clamped until set. All excess glue shall be removed from exposed surfaces. Nails shall be small as practicable and set below the surface. Blind nail where possible. Screws shall be screwed home. All joints splined and glued.

6.05 MILLWORK ITEMS

All items shall be installed, set level, plumb and rigidly secured in place. Joints shall be made in an approved manner to conceal shrinkage and to be tight, neat, clean and permanently held. All units shall be in perfect alignment, free of warp and twists. Scribe strips coped to adjoining surfaces. Fasteners shall be concealed.

Doors shall be hung free of warps and twists, and any other defects, and shall have jamb and head clearance the thickness of a new nickel after painting. Bottoms of doors shall fit within 1/8" to

sills, 1/4" to finish flooring. See Drawings for special conditions.

6.06 CLEANING AND PROTECTION

Upon completion, clean all carpentry items and leave in condition ready for paint and other finish. Protect all work during and after completion until painting and finishing is commenced. Keep building and job site free of excessive debris, waste materials, etc.

6.07 MATERIALS

ROUGH CARPENTRY:

Approve rough carpentry species are: Eastern Spruce, Structural; Norway Pine, Prime Structural Southern Pine, Prime Structural West Coast Douglas Fir, Standard

Minimum allowable stress fl200 for all joists, lintels, studs, posts, plates, girders, blocking, curbs, cants and miscellaneous structural wood framing.

PLYWOOD SHEATHING: Shall be Fir, DFPA, Commercial Standard CDX. Thickness shall be as shown on plans. Subflooring shall be 3/4" T & G Plywood.

FINISH CARPENTRY:

Trim and miscellaneous items; shall be Ponderosa Pine or Eastern White Pine, or Poplar, B Select or better.

Plywood: Exterior; Fir, DFPA Commercial Standard AC Exterior, thickness as shown on plans.

Plywood: Interior;

Fir, DFPA 7 ply, AB, Interior

Birch, unselect, rotary cut, glue line type III. Exposed surfaces good grade I; Unexposed surfaces sound grade II.

Plywood thicknesses shall be as shown on the plans.

Siding and Soffit Panels: Refer to DIVISION II, SECTION 0701.

Tack Boards: 5/8" Homasote board, refer to the drawings.

Plastic Laminate: 1/16" NEMA Standards, color as selected by the Architect.

Particle Board: Laminated resin impregnated wood chips, face filled, and shall comply with the National Particle Board Association standards.

Fastening Devices: Where required, shall be noncorrosive nails, screws, bolts, anchors, and similar items of type and size sufficient to draw and rigidly secure members in place.

Adhesive: Best of its kind and suited to its intended use as recommended by the adhesive manufacturer.

Glue: Where required, best quality available and suited to its intended use as recommended by the manufacturer of the glue.

Pine Paneling: Shall be 1"x4" tongue and groove Pine No. 1 or better.

END OF SECTION

DIVISION II - THE SPECIFICATIONS

SECTION 0602 TRUSSED RAFTERS

0.01 SCOPE **NOT APPLICABLE TO THIS PROJECT**

6.02 TRUSSES

All trusses referred to in this Section of the Specifications shall be existing. The Contractor shall provide adequate support with 45 and 60 degree bracing located at the corners of each HVAC roof top decking. This support shall carry the excessive weight of the units to other points in the original truss rafters.

6.03 MATERIALS

REFERENCED SPECIFICATIONS: The design and fabrication criteria of all wood trusses shall meet with "National Design Specifications for Stress Grade Lumber and Its Fastenings" by National Forest Products Association (latest revision); "Timber Construction Standards" by American Institute of Timber Construction (latest revision); And "Design Specifications for Light Metal Plate Connected Wood Trusses"; "Quality Control Manual"; and "Bracing Wood Trusses: Commentary and Recommendations" by Truss Plate Institute (latest revision); The same as if those specifications and all their references were set out in full herein.

LUMBER:

All lumber used for truss members shall conform to the published stress ratings for the species and grades as set out in the official grading rules of the appropriate lumber association or as listed in the reference specifications; except that, wherever this Specification or notes on the Plans or truss engineering design calls for lumber which exceed the minimum set forth therein, the Specifications, Plans and/or truss engineering designs shall be applicable, and information stated or shown in one shall be applicable the same as if in all of them.

The moisture content of all lumber shall be with the proper limits as stated in the reference specifications, but shall not, in any case, exceed 15% nor be less than 7% at the time of fabrication.

All lumber shall conform to the species grades and fully recognized nominal sizes shown on the Plans. Reductions in any of the above will not be permitted.

All members shall be cut from lumber which pears the proper grade mark stamp of a recognized grading association or licensed lumber inspection agency. No lumber shall be used which does not appear to conform to the proper dimensions andtor grades.

END OF SECTION

DIVISION II - THE SPECIFICATIONS

SECTION 0701 ROOFING, SIDING, INSULATION AND MOISTURE PROTECTION

7.01 GENERAL

Furnish and install roofing, siding, insulation and moisture protection work as shown and specified.

All materials shall be installed in a good workmanlike manner according to the best standards of the trade. Special products shall be installed according to the manufacturer's written instructions.

7.02 MATERIALS

ASPHALT SHINGLES:

The Contractor shall provide or replace any existing shingles which are damaged through the construction of the project. Otherwise, existing shingles shall not be removed or replaced.

Asphalt shingles shall be U.L. rated, Class C, 2341bs. per square. Shingles shall be self-sealing, wind resistant type with three tabs. shingle dimensions 36" long x 12" wide.

Exposure to be 5" with head lap 2" installed with a minimum of four nails per shingle. Installation of shingles shall be as recommended by the shingle manufacturer.

Shingles shall be as manufactured by Bird, GAF, JohnsManville or approved equal. Color shall be as selected by the Architect. Submit samples to the Architect for color selection.

INSULATION:

The Contractor shall provide adequate insulation were New HVAC units and duct work may eliminate or damage existing insulation.

Exterior walls; 5 1/2" friction fit Fiberglas blanket, R19 Fed. Spec. HH-1-521E, Type I.

Sheathing Board: (NOT REQUIRED)

Sound Walls and Ceilings: (NOT REQUIRED)

Attic Ceiling; Shall be existing. The Contractor shall provide the same type or greater R Value of insulation which may be demaged during construction.

Perimeter Foundation Walls and Slabs; (NOT REQUIRED)

FELTS: Roofing felt shall be 15 lb. asphalt coated felts.

VAPOR BARRIER: (NOT REQUIRED).

BUILDING PAPER: (NOT REQUIRED).

ROOFING CEMENT: Plastic asphalt cement, best of its kind.

METAL ROOF EDGE: The Contractor shall replace any damaged drip edge during construction. The drip edge shall match existing.

FLASHING: Fabric type, best of its kind.

FLASHING: Metal; .002, 16Oz. lead coated copper. .032, 20 ga. anodized aluminum.

RIDGE VENTS: (NOT REQUIRED)

END OF SECTION

DIVISION II - THE SPECIFICATIONS

SECTION 0702 CAULKING AND SEALANTS

7.01 GENERAL

Provide complete caulking and sealants as shown and specified.

Sealant compounds shall be as manufactured by a national manufacturer with a minimum of five years experience and have local representation. Polysulfide base sealants shall conform to ASA A116.1 - L.R.

Complete caulking and sealing for weatherproof building,

7.03 WORKMANSHIP

Minimum depth of Type I joints shall be i"; minimum size of Type II materials shall be 1t8" x 1/2".

Joints more than 3/4" deep to receive caulking shall be packed with oakum to within 3/4" of the surface. Polyethylene foam gaskets shall be installed where shown. Mop yarn shall be used instead of Oakum where contact is made with materials subject to stain.

Surface preparation is important. All metal and glass surfaces must be cleaned, and wood surfaces primed.

7.03 HEALTH PRECAUTIONS

In using Type I, observe ordinary hygiene principles. Wash hands with Boraxo Avoid prolonged contact with skin, breathing of solvent and/or primer vapor.

7.04 MATERIALS

Type I; Two-part Thiokol system or one-part G.E. Silicone rubber sealant. Solvent as recommended by the manufacturer. Application; gun type applied as per manufacturer's recommendations.

Type II; A one-package system consisting of a polymorized elastic, treated oils, synthetic rubber, pigments and fiber. Color; gray. Bleeding; none. Fed. Spec. TTC 598.

Type III; Elastic compound tape, 1/16" x 1/2", Color gray. Butyl, polyisobulylene or vinyl polymer base. Tapes shall contain a cloth or fiber insert to maintain dimensional stability.

Type IV; Elastic glazing compound acrylic terpolymer, mono., white.

END OF SECTION

DIVISION II - THE SPECIFICATIONS

SECTION 0801 DOORS, WINDOWS AND GLASS

8.01 GENERAL

Provide types and sizes as shown and specified.

In general, all doors, windows and glass shall be installed under Carpentry Section 0601.

8.02 EXTERIOR DOORS

Exterior doors shall be existing full glass doors. If glass is broken, contractor shall provide new lights..

Aluminum combination sill/threshold attached to and mortised into strike and hinge jambs of the door frames Doors shall be reinforced and prepared for 11/2" pair of 4" x 4" hinges which are inserted behind the door edge. Doors shall be reinforced and prepared for locks exit devices and hardware.

Provide glass lights where indicated. Glazing shall be factory installed and shall be tempered safety glass.

Frames shall be wood assembled head, hinge, and strike jamb with embossed molding. Frames shall be Ponderosa Pine, prime painted and weather stripped.

8.03 METAL DOORS AND FRAMES

Metal Frames; Special and combination type with trim and stops formed as an integral part of the units. Stops shall terminate 4" above the floor as indicated.

Profiles shall be press broke formed true and sharp with head and jambs accurately mitered, continuously welded and ground smooth.

Units shall be of the best quality, full cold rolled steel. Units shall be 16 gauge. Provide U.L. Label and anchors where indicated.

Hollow Metal Doors; Shall be flush (seamless) type, narrow style construction of sheet steel not less than #18 gauge. Provide U.L. Label doors where indicated on the Drawings. (refer to Door Schedule for design and sizes of doors.) Doors shall be constructed and reinforced inside with interlocking, continuous 20 gauge stiffeners approximately 5" on centers spot welded both sides. All doors shall be provided with suitable insulation to reduce metallic sound.

Anchors and Accessories; Provide all required miscellaneous shapes and accessories such as stops, clips special angles at jamb openings, screws, removable temporary steel channel spreaders,

fixed and adjustable anchors and punching.

Units shall be accurately mortised, reinforced, drilled, and tapped for finish hardware. Reinforcement plates for hardware shall be welded to the unit assembly and be of sufficient size to support loads imposed. Use a minimum of 9 gauge steel reinforcement plates for template hardware. A 3/16" minimum thickness steel reinforcement shall be provided for door closers and brackets. Dust and plaster covers shall be provided.

Finish; At the manufacturing plant, after fabrication is completed, the hollow metal units shall be thoroughly cleaned, inside and out. All irregularities shall be filled, rough spots and welds ground smooth. The units shall then be dip coated in red oxide primer followed with one spray coat of rust inhibitive primer baked on.

Erection; Erect all units plumb, level, square, and true, and securely anchored. Frames shall be filled solidly with plaster, mortar or wood as indicated by the surrounding construction.

8.04 INTERIOR HOOD DOORS

The Contractor has provide alternate prices for doors. Currently, the Contractor is carrying a line-item allowance of 20 solid Oak Veneer doors manufactured by Steel Craft.

4 or 6 Panel Pine Doors; (interior) or solid oak veneer with metal frames manufactured by Steel Craft. Construction shall meet Commercial Standards 171.58. Sizes shall be as indicated in the Door Schedule on the Drawings. Finish shall be urethane natural finish.

Guarantee; Doors shall be guaranteed by the manufacturer for the life of the installation against warping, twisting or manufactured defects. If defect develop as stated, the manufacturer shall replace, rehang and refinish without charge.

8.05 VINYL WINDOWS

The Contractor has provided pricing to replace existing windows as indicated in the Contractor's Contingency Clause. If the owner decides to replace the existing windows, the Contractor will provide the following:
Shall be manufactured by Kas-Kel of the size as indicated on the Drawings. Windows shall be complete with insulating glass, weatherstripping, flashing, locks and hardware and screens. Windows shall not be furnished with snap in grilles. Windows shall be 1 over 1 lights.

The Contractor is currently carrying prices to preplace the existing broken windows/ lights will using the original sashes. Existing windows will be refinished. Existing glazing and caulk will be removed. New glazing will be adquately installed as specified by manufacturer. Refer to window schedule on the drawings for window sizes and types.

8.06 GLASS AND GLAZING

Refer to Caulking and Sealants Section 0702 for glazing types.

Glass General;Tempered glass - 1/4" regular polish plate, clear. Wire glass - 1/4" U.L. approved standard wire glass. Sheet glass - Double strength, B grade, clear. Obscure glass - Insulating glass, serf pattern.

DIVISION II - THE SPECIFICATIONS

SECTION 0802 FINISH HARDWARE

8.01 GENERAL

Furnish hardware as shown, specified and as required.

Hardware and accessory items called for under this Section shall be installed under Carpentry Section 0601.

The work under this Section shall include the furnishing of all items of finishing hardware as hereinafter specified and scheduled or obviously required to complete the building. The Contractor shall provide schedules and listing of items which are to be incorporated into the building to the Architect.

All items of hardware shall be in strict conformance to manufacturer's recommended sizes for the purpose intended, and adjusted as directed by manufacturer's instructions.

Furnish template information direct to other manufacturers concerned (e.g., the manufacturers of metal doors, metal door frames or other comparable items). Also, where the door manufacturer must install the hardware on his product to comply with Underwriter's Label requirements, supply the hardware items direct to such manufacturer.

Items shipped to be properly packaged and tagged so as to conveniently identify the hardware and its intended location in the building.

Replace promptly and with proper material, without additional cost to the Owner, items damaged in shipment.

It is intended that the following list of hardware cover all hardware required to complete the Project. The Bidders shall check the Plans and advise the Owner/Architect of any omissions or discrepancies. A complete system shall be required within the Bid price.

8.02 GUARANTEE

Contractor shall guarantee that all materials specified in this Section shall be free from all defects and shall perform satisfactorily for a period of two years after it is installed and accepted. Contractor shall replace at his own expense including labor any items of hardware which may prove defective within this period. All materials shall be manufactured in the United States.

8.03 MANUFACTURER AND MATERIAL STANDARDS

All catalog numbers herein specified have been used for the purpose of establishing a basis for quality, finish, design and operational function and in order to establish such a basis of quality,

certain processes, types of equipment and kinds of material are specified by manufacturer's name, brand and catalog number.

Deviation from or modification of items will be permitted only for special instances caused by reason of construction characteristics and for the purpose of providing proper operational function. The Contractor shall be responsible for checking any necessary deviations in order that hardware shall fit and function properly.

8.04 TEMPLATES

The hardware supplier shall provide necessary templates of items being furnished. Template information shall be furnished to all trades requiring same in order that they may cut, reinforce or otherwise prepare their material or product to receive the hardware item, in the exact locations require for proper installation and operation.

8.05 DELIVERY

The General Contractor shall receive hardware when delivered at the Building. A room shall be set aside and under lock and key for purpose of hardware checking, indexing and storage.

8.06 SAMPLES

Samples may be required by the Architect for his observation before approval of schedules. The samples, if approved, may be used in the Building.

8.07 FINISH OF HARDWARE

Finish of items shall be as follows:

BUTTS	US26D
LOCKSETS	US26D
EXIT BOLTS	US27D
PUSH PLATES, PULLS	US32D
KICK PLATES, ARMOR PLATES	BRUSHED ALUMINUM/BRASS
FLUSH BOLTS, STOPS, HOLDERS	US26D
DOOR CLOSERS, PUSH BARS	SBL
MISCELLANEOUS ITEMS	US26D

The finish of items not specifically mentioned above nor set forth in the Schedule shall be USD26D, unless otherwise shown.

8.08 KEYING SYSTEM

All locks will be keyed differently and master keyed.

Supply 2 keys per lock and 6 master keys.

8.09 BUTT HINGES

Butt hinge size requirements:

DOOR THICKNESS	TRANSOM DOOR WIDTH	GAUGE	BUTT SIZE
1 3/4"	3 feet 8 less	.134	41/2 x 41/2
1 3/4"	over 3 feet	.180	extra heavy

All hinges on this Project are to be ball bearing.

All hinges to be used on the exterior doors, shall be non-ferrous material, brass, bronze chrome plated or stainless steel with non-removable pins.

Label doors to corridors where indicated, use #2060 Stanley spring hinges.

8.10 EXIT DEVICES

Push bar exit devices shall be Schalage 44 strike panic bar or equal as indicated on plans. Push bar devices shall be the horizontal bar type, with outside lever operation on the outside and push bar operation on the inside. Provide dogging feature, key locks or unlocks outside lever. Push bar and mechanism shall have bronze lacquer finish.

SEC. 0802-3

8.11 LOCKSETS

Cylindrical locksets shall be residential/commercial type with lever handles and rosette. The standard to be used as a base comparison shall be Schlage standard duty Levon design.

Doors dangerous to the blind or not intended for public use shall have knurled knobs.

FUNCTION:

A. Passage - By lever either side all times.

B. Lock - By turn button on inside lever and then by turning key in outside lever or by inside lever. Lock released by returning turn button.

C. Lock - Inside lever always works. Outside lever fixed, operates on outside by use of key only.

D. Privacy - Inside by lever at all times. Pushing button on inside lever locks outside lever. Turning inside lever releases locking function. Outside lever by emergency key when locked.

E. Lock - Outer lever locked and unlocked by key from outside, inner lever always free.

8.13 DOOR CLOSERS

Closers shall be rack and pinion construction with both rack and pinion of heat treated steel and with a cast hydraulic iron case. Aluminum case closers not acceptable.

All closers shall be surface applied with rectangular covers, projection not over 2 7/8" and capable of being applied on a 1 3/4" rail.

All door closers shall have a power adjustment feature. All doors with closers shall have a sweep period of at least 3 seconds to move the door from an open position of 70í to a point 3" from latch, measured

Fire doors shall have a minimum opening force allowable by the appropriate administrative authority.to the leading edge of the door.

All other doors shall have a maximum opening force for pushing or pulling the door open of 5 lbf.

Door closers shall be tested and listed under BHMA certification program for compliance with the performance test requirements for door closers in accordance with A156.4, grade I.

Acceptable and approved as follows (or equals);

RUSSWIN	CORBIN	LCN
BC2800 SERIES	BC 100	BC4030
2810 SERIES	110	4010
P2810B SERIES	P110B	4110

8.14 DOOR STOPS

Stops shall be supplied for all doors not equipped with holding stay devices.

Stops shall control the desired limit of opening to prevent damage to adjacent walls, equipment, the door or its hardware.

Floor stops shall be used except in areas where their location would impede traffic.

Wall stops or bumpers shall be used in areas where floor stops are prohibited.

Roller type stops shall be used in areas when interfering swing of one door may cause damage through contact with another door.

8.15 DOOR RELEASE DEVICES (NOT REQUIRED)

DIVISION II - THE SPECIFICATIONS

SECTION 0901 GYPSUM DRYWALL

9.01 GENERAL

Furnish and install gypsum drywall work as shown or specified.

Partitions and ceilings assemblies shown or required to have fire ratings shall conform to U.L. requirements.

Coordinate work with other trades.

Work under this section shall conform to current ASTM or Federal Specifications and shall be equal to materials as manufactured by National Gypsum of U.S. Gypsum companies.

9.02 WORK BY OTHERS

The following work is not included under this Section and shall be performed under other Sections:

Wood grounds and blocking - Refer to Carpentry Section 0601.

Insulation for walls and ceilings shall be furnished and installed under Section 0701.

9.03 STORAGE

All manufactured materials shall be delivered in the original packages or containers, unopened, bearing the name of the manufacturer and the brand and shall be kept off the ground, under cover and dry until ready to use.

9.04 PROTECTION AND CLEANING

Protect all work of other trades against soilage and damage.

9.05 INSTALLATION

GENERAL: Installation and finishing shall be by an approved, experienced applicator normally engaged in this trade.

WALLBOARD - SINGLE LAYER APPLICATION:

Gypsum wallboard shall be applied in maximum practical lengths. Edges and ends of board shall be brought into contact but not forced into place. End joints shall be staggered. Provide blocking as required.

Screws shall not be less than 3/4" from ends and edges of board and spaced not over 18" apart. Screws heads shall be dimpled slightly below surface of the wallboard, care being taken not to break the paper surface.

Corner beads shall be applied to all external corners. Casing beads shall be applied to all vertical edges, along top and bottom and around all openings. Provide control joints as recommended by the wallboard manufacturer and/or as indicated.

All joints and internal angles shall be finished using the tape joint system in accordance with the manufacturer's instructions. Finish joints, nail dimples, corners and edges using a three coat cement and tape system. Allow 24 hours for drying time between applications of cement. Sand the cement after the final coat is dry to a smooth surface effectively concealing the joints or nails.

WALLBOARD ON RESILIENT CHANNELS:

Position resilient channels at right angles to wood studs spaced at 16" on centers and attach with 1 1/4" Type "W" or "S", or 1" Type "S" screws driven through holes in channel mounting flange.

On walls, attach 1/2" x 3" wide continuous filler strip to bottom plate. Install channels with mounting flange down, top channel maximum 6" down from ceiling, bottom channel 24" up to floor. Extend channels into all corners and attach to corner framing. Position channels 6" maximum from wall-ceiling angle. Cantilever channel ends no more than 6".

Splice channel by resting directly over framing member screw attach through both flanges. Reinforce with screws located at both ends of splice.

Apply drywall panels with long dimension parallel to channel and fasten with 1" Type "S" screws spaced 12" on centers along channels.

Provide finishing, joint treatment, corner beads, etc., as specified in single layer application of this Section.

CEILING SYSTEM: (NOT REQUIRED)

9.06 MATERIALS

GYPSUM WALLBOARD: ON NEW WALLS; Shall be 5/8" Fire Rated with tapered joints. Wallboard shall conform to ASTM C-36, Type X, Fire-Shield as manufactured by National Gypsum Company or approved equal.

GYPSUM WALLBOARD: ON EXISTING WALLS: were wood paneling is existing, the contractor shall remove or cover with 1/4" wallboard.

BATHROOMS:

New bathrooms with shower units shall have "MR" to prevent any deterioration of gypsum board over time.

JOINT COMPOUND: Shall be ready mix type as manufactured by National Gypsum Company or approved equal.

JOINT REINFORCING: Shall be perforated type for joints as manufactured by National Gypsum Company or approved equal.

FURRING CHANNELS: Resilient furring channels as manufactured by the National Gypsum Company or approved equal.

BEADS: Corner and casing beads shall be galvanized steel with perforated flanges, 2" minimum width.

LAMINATING ADHESIVE: Adhesive Type "A" as recommended by the National Gypsum Company or approved equal. Laminating adhesive shall be used for laminating gypsum wall board to gypsum backer board.

FASTENINGS AND ACCESSORIES: As recommended by the wallboard manufacturer.

END OF SECTION

DIVISION II - THE SPECIFICATIONS

SECTION 0902 CARPETING

9.O1 GENERAL

Furnish and install carpeting as shown an specified.

9.02 SAMPLES

Submit samples of carpet and pad to Architect for approval. Color and patter shall be as selected by the Architect.

9.03 INSPECTION AND PREPARATION

The Contractor shall inspect all surfaces to receive carpet and notify the Architect of any reasons which would prevent a first class installation of the carpeting. Laying of carpeting constitutes full acceptance of subfloors.

9.04 INSTALLATION

Carpet with no Pad shall be installed on concrete and/or plywood floors as indicated. All carpet shall run in the same direction as instructed by the Architect.

Carpet shall be installed as recommended by the carpet manufacturer. All installation proceedings must conform the manufacturer's written instructions.

Carpet remnants and usable scrap to be packaged, identified, and left with the Owner.

9.05 MATERIALS

GENERAL: All carpet products shall be certified to be in compliance with the HUD/FmHA standards for carpet. Only carpet products certified to be in compliance with ETL Carpet Certification Program are considered acceptable. Contractor shall submit identification number and certification to the Architect. No material shall be ordered or installed until approval has been given by the Architect.

STANDARDS: All products shall conform to the standards as set forth in UM44C. This standard applies to products designed in commerce as first quality tufted, woven or knitted carpet, free from objectionable visual blemishes or physical defects. The Standard includes requirements for the backing, the structure of the yarns, color fastness, weights, density determinations or calculations and weight density of the yarn material.

CARPET: Carpet shall be Type II. The Carpet shall be limited to the following:

Low Level Loop; Single level uncut pile denser than conventional level loop.

Class 1; For moderate traffic use within dwelling units. NOT APPLICABLE.

Class 2; For heavy traffic use such as lobbies, stairs, public corridors and public areas.

Level Loop; Pile yarn fibers, Type III, Class 1, Nylon 20 oz./sq. yd. (3300/4) 77,000.

Level Loop; Pile yarn fibers, Type III, Class 2, Nylon 26 oz./sq. yd. (3300/4) 97,344.

Flame Spread Rating; Flame spread rating for all carpet shall be 0.75 minimum as determined by the Steiner Tunnel Test B.

CARPET CUSHIONING: Carpet cushioning shall be Urethane carpet cushioning and shall meet or exceed HUD "Minimum Property Standards" UM72. Cushioning shall be labeled or printed every 10 feet along the length of the roll indicating the manufacturer's code number, product classification and product class.

MODERATE TRAFFIC: CLASS I

HEAVY TRAFFIC: CLASS II

9.06 APPROVALS

The Contractor has submitted to the owner the color sample and manufacturer of the Carpet. The Owner shall provide the Architect samples and the manufacturer's specifications of all carpet for approval and color selection.

The Contractor shall note that only back stamped material shall be installed on the project. All carpet materials used on the job shall be properly back stamped. The Contractor shall not install any carpet until the Architect has been notified and has inspected the carpet materials for back stamping.

END OF SECTION

DIVISION II - THE SPECIFICATIONS

SECTION 0903 PAINTING

9.01 GENERAL

Furnish and install all painting, vinyl wall covering and finishing as shown and specified.

All materials shall be new and shall be applied and stored in accordance with the manufacturer's written specifications and directions for use, location and exposure.

Prepare, prime, smooth and fill all materials as needed for a permanent finish.

Materials shall be uniform and neat at all edges and provide complete coverage.

Protect all adjacent work during painting and clean all surfaces of any foreign paint or finish.

Maintain clean, neat supplies and protect from fire exposure.

Provide one gallon of each material for the Owner's use at the completion of the job.

9.02 SAMPLES

Provide complete samples as directed for color selection. Provide painted samples of actual materials to conform to selections made.

9.03 SURFACES NOT TO PAINT

Exterior concrete

All prefinished materials; paneling, aluminum, wall covering etc.

9.04 PAINT AND FINISH MATERIALS

Sherwin-Williams or as otherwise approved.

All paint colors shall conform to the color schedule as prepared by the Architect.

METAL "XE" (EXTERIOR)

First Coat; shop and field coats, kromik. Second Coat; Metalastic II. Third Coat; Metalastic II.

METAL "E" (INTERIOR)

First Coat; Kromik Second Coat; ProMar Alkyd Eg-Shel Third Coat; ProMar Alkyd Eg-Shel

WOOD (EXTERIOR)

Sherwin-Williams solid color exterior stain. Color as selected by the Architect.

First Coat; SWP exterior undercoat. Two Coats; SWP exterior gloss paint.

Weathering or exterior stain as approved.

SW enamel under

First Coat; coaler. Two coats; Pro-Mar Alkyd EgShel.

First Coat; Polyurethane gloss reduced one pint exolvent per gallon. Second Coat; Polyurethane gloss. Third Coat; Polyurethane satin.

Prepare and stain woodwork with color as selected by the Architect. Provide polyurethane natural finish as specified above.

DRYWALL

RAGS: Clean and sterile.

First Coat; Pro-Mar latex primer. Two Coats; Pro-Mar latex flat wall paint.

Shall be Sher-Tex ready mixed sand textured paint, medium texture, white. Spray applied Application and surface preparation shall be in accordance with the manufacturer's written instructions.

PUTTY: Pure linseed oil, ASTM D-317-33.

ALCOHOL: Denatured.

SPACKLE: Shall best of its kind and suited to the purpose used.

END OF SECTION

DIVISION II - THE SPECIFICATIONS

SECTION 0905 RESILIENT FLOOR COVERING

9.0 1 GENERAL

Furnish and install resilient floor covering work as shown and specified.

Concrete slabs placed under other sections shall have their surfaces inspected and the Contractor shall repor any reasons that would prevent a first class resilient floor covering installation in writing to the Architect

Installation of the floor covering shall constitute full acceptance of the sub-floor surfaces.

9.02 COLORS AND PATTERNS

The Architect shall select the resilient floor colors and patterns. The Contractor shall submit a full range of colors and patterns from one of the following manufacturers for approval and selection: Armstrong, Mannington or approved equal.

9.03 WORKMANSHIP

Concrete sub-floors shall have a smooth, steel troweled surface and shall be level. A calcium chloride crystal test shall be made to determine the presence of moisture.

Flooring shall not be laid until all other trades have completed their work in the area. Floor on which covering is to be laid shall be free of dirt and dust and other foreign matter. All cracks, low spots and expansion joints shall be filled with a plastic material. Before laying floor, the Architect shall be notified.

adhesives shall be spread with a properly notched trowel.

Contractor shall do all cutting and fitting of the flooring to fit neatly around pipes, pipes, outlets and equipment as may be necessary for a first class job. All joints shall be tight.

All flooring shall be uniform in color and pattern. Sheet flooring shall be smooth without blisters, tightly butted and rolled. Sheet shall be turned for end joints.

9.04 CLEANING AND PROTECTION

Upon completion, all excessive adhesives shall be removed. All excess chemical set cement shall be removed with water. After cleaning the flooring, the area shall be waxed and buffed with a buffing machine as recommended by the manufacturer of the flooring.

9.05 MATERIALS

FLOORING: SHEET GOODS, .070" vinyl corlon with hydrocord back or approved equal. Maximum widths as required.

ADHESIVES: As recommended by the flooring manufacturer. Waterproof type.

PRIMER: As recommended by the flooring manufacturer.

VINYL BASE: Cove type, vinyl - 4" high. Interior and exterior corners shall be preformed. Wrap around type corners will not be permitted.

WAX: (if required) Shall be as recommended by the flooring manufacturer.

END OF SECTION

DIVISION II - THE SPECIFICATIONS

SECTION 0906 CEILING TILE

9.01 GENERAL

Furnish and install ceiling tile work as shown or specified.

The installation shall be made a contractor thoroughly experienced in installing ceiling tiles.

This contractor shall furnish the hanger and tie rods, suspension system, and tiles. The contractor shall install the ceilings in accordance with the manufacturer of the ceiling tile, as detailed on the drawings and as specified herein.

9.02 SAMPLES

The contractor shall submit samples of tile for pattern and color selection. Tile and suspension system shall be approved by the Architect before placing order.

9.03 STORAGE AND DELIVERY

All materials shall be delivered in marked cartons, stored off the floor in the building away from damp areas and protected from damage.

9.04 PREPARATION

All areas shall be dried out to the satisfaction of the tile contractor and the Architect before work is started. All glazing shall be complete and exterior openings closed in. The tile contractor shall be responsible for the examination and acceptance of all surfaces and conditions effecting the the proper installation of his materials and shall not proceed until all unsatisfactory conditions have been corrected. Application of tiles shall constitute acceptance of base surfaces by this contractor.

9.05 APPLICATION

This contractor shall be responsible for the complete installation. Provide extra hanger rods at light fixtures (support all four corners 1' x 4' max.). Tiles shall be laid in exposed suspension system. All tiles and edge moldings shall be true to center, straight in alignment and level. Workman shall wear gloves and keep tile clean. Chalking of damage tile shall not be permitted.

Hanger rods or wires shall be securely fastened and tied to the ceiling system. Provide additional support where support members are not available. Hanger rods and wires shall be hung plumb.

the edge molding shall be installed by the tile contractor where ever the tile material abuts walls and other vertical surfaces.

All tile with damaged or dirty surfaces shall be removed and replaced. Cut and fit around all fixtures grilles, angle walls etc. as required. Suspension system shall be braced and strong enough to support all light fixtures.

9.06 COLOR AND SIZE

Materials shall be selected by the Architect from a full range of samples.

Ceiling tile shall be 24" X 48" X 5/8" thick. Color shall be white.

9.07 MATERIALS

CEILING TILE: Shall be mineral fiber, reveal edge type. Tile shall be Class A, non-combustible, fire resistant with 1 hour rating. Tile shall have a flame spread rating of not more than 25.

SUSPENSION SYSTEM: Shall carry the U.L. label for a 1 hour fire rating. System shall be complete with channels, main beams, cross tees, wall moldings, hold down clips. All exposed surfaces shall be white enamel. Main runners shall be cold rolled steel with a minimum gauge of .020" and a minimum depth of 1" Maximum allowable deflection 1/240 of span.

HANGER WIRE: Shall be 12 gauge steel wire, 18,000 psi, spaced 4'-0" on centers.

ACCESS PANELS: Provide U.L. approved access panels to attic space where shown. Access panels to be 24" X 48".

DIVISION II - THE SPECIFICATIONS

SECTION 1001 SPECIALTIES

1 0.01 GENERAL

Furnish and install specialties as shown and specified.

Submit complete list of specialties to the Architect for approval.

10.02 KITCHEN CABINETS: NOT APPLICABLE.

DIVISION II - THE SPECIFICATIONS

SECTION 1002 TOILET ACCESSORIES

1 0.01 GENERAL

Furnish and install toilet accessories as shown specified.

Blocking as required for toilet accessories and bars shall be provided under Carpentry Section 0601.

All shower curtain rods, towel bars, grab bars and accessories shall be installed to resist forces in excess of 250 pounds for five minutes.

Submit Toilet Accessories schedule to the Architect for approval.

10.02 ACCESSORIES

A. SHOWER RODS: 304 stainless steel.

B. TOWEL BARS:

C. TOILET PAPER HOLDER:

D. MEDICINE CABINETS (NOT REQUIRED0

E. TUB GRAB BARS: (NOT REQUIRED)

F. GRAB BARS: Only in handicap toilet fascilities.

10.03 SCHEDULE

Wall mounted grab bars shall be 11/4" heavy duty stainless steel, satin finish.

(A) Shower Rod (B) Towel bars (C) Toilet Paper Holder

Handicap unit: in addition to the above toilet accessories, provide 1 watercloset grab bar 36" long and 1 watercloset grab bar 42" long (H).

DIVISION II - THE SPECIFICATIONS

SECTION 1101 APPLIANCES

11.01 GENERAL

Furnish and install appliances as shown and specified.

Approved manufacturers of appliances other than specified are General Electric, Hot Point, Whirlpool, Frigidair and Sears-Kenmore. However, all appliances shall meet or exceed the noted specifications and shall be approved by the Owner and the Architect.

Refer also to the Plans for appliance locations and quantities required.

Refer to the Electrical plans and specifications and verify voltage and wiring requirements before placing the appliance order.

11.02 OFFICE APPLIANCES

Office kitchen to have:

KITCHEN RANGE: Furnish and install electric ranges with four burners, lift off door, storage drawer, "ON" indicator light, oven light, complete with broiler pan, broiler grid, oven racks and front controls. Color, white. General Electric Model number GE827 or equivalent Kenmore Model with front controls.

RANGE HOODS: Range hoods shall be duct venting type with filters and two speed controls. Hoods shall meet or exceed HUD requirements and shall be U.L. approved. Color, white. General Electric Model number 1002 or equivalent Kenmore Model OR EQUAL QUALITY.

REFRIGERATORS: Furnish and install refrigerators. Refrigerators shall be cycle defrost, separate freezer and refrigerator doors, 12 cubic feet capacity, color, white. General Electric Model number GE846 Kenmore Model number 253860408 OR EQUAL QUALITY.

11.03 LAUNDRY EQUIPMENT: NOT APPLICABLE

MECHANICAL

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PART 1- GENERAL

GENERAL PROV1SION5

SCOPE

A. The Plumbing Contractor shall fumish all labor, materials, equipment, transportation, permits, inspections, and incidentals required to install and complete all plumbing work as shown on the drawings or specified herein or both.

B. All work shall be subject to the terms and conditions of the contract and applicable portions of the General Conditions and Special Conditions.

C. All work and materials shall be in strict accordance with these drawings and specifications even though they mav be in excess of the applicable codes, ordinances and regulations.

D. Whenever the word "provide" is used, it means fumish and install complete and ready for use.

DRAWINGS

A. The general location of the apparatus and the details of the work are shown on the accompanying drawings, which form a part of this specification. Exact locations are to be determined at the building as the work progresses and shall be subject to the Owner's and or Engineer's acceptance.

B. Anything shown on the drawings and not mentioned in the specifications or vice versa, shall be fumished as if it were both shown and specified.

D. All questions as to the interpretation or extent of the drawings and specifications shall be referred to the Architect/Engineer. Failure to do this shall not relieve the contractor of responsibility to provide all materials and work in accordance with the intent of the plans and specifications at no extra charge.

1.3 RECORD DRAWINGS

A. This subcontractor shall maintain at site, two separate sets of blue line prints of the Plumbing Drawings. As the work progresses he shall mark neatly and accurately all changes from the original layouts and the work accomplished day by day. Colors shall be used in marking the various services.

B. These sets of prints will be inspected and considered a guide to determining the amount of work installed. If these drawings are found inaccurate or incomplete, they shall be corrected promplty.

C. These "As Built" drawings shall be fumed over to the Architect/Engineer upon completion of

the project for preparation of reproducibles bv the Architect/Engineer for the Owners.

D. Final payment will not be made until these "As Built" drawings have been received and accepted.

1.4 GENERAL CONDITIONS

A. All materials entering into the installation must be new and of the quality specified, otherwise to be of the best commercial quality obtainable for the purpose. All parts of the work and the erection thereof must be performed in the best and most substantial manner in accordance with the standards of the trade and all applicable codes.

B. The Contractor shall visit the site and building during construction and shall take such measurements as necessary for him to determine that actual conditions follow these plans and specifications such that he may properly install his work without interferences or work hold-ups.

C. The Contractor shall study all drawings and specifications to determine any conflict with other trades. Any conflicts shall be submitted to the Architect/Engineer before starting work. The Architectural, Structural, Mechanical and Electrical Drawings should be followed and this section of the work fitted thereto.

D. Submittal of bid shall indicate that this Contractor has examined the site and drawings and has included all required allowances in his bid. No allowances shall be made for error resulting from Contractor's failure to visit job site and to review drawings.

E. The Plumbing Contractor shall be responsible for performing all operations in connection with this work and the satisfactory operation and tightness of all water, drainage and venting systems under this contract.

SHOP DRAWINGS AND INSTRUCTIONS

A. Shop drawings of all major equipment, showing certified dimensions, complete installation details and material data, shall be submitted in septuple (3) copies to the Architect and/or Engineers for review, within 30 days after award of contract. Final acceptance must be received in writing before equipment is ordered.

B. Acceptance will be for type, quality and specification only; quantities and dimensions shall be the responsibility of the Plumbing Contractor.

C. Provide at least two (2) neatly bound sets of maintenance books, instruction books, and parts list pertaining to all equipment. Each sechon shall be indexed as follows: Parts list, instruction books, maintenance books, names, addresses and telephone numbers of nearest available source of repair service individual equipment guarantee and valve charts.

1.6 SUBSTITUTIONS

A. Substitutions mav be made within 20 days following award of the contract if proven to be acceptable or superior to specified item with documentation of equality and certified price and delivery quotations from suppliers of both the specified and the proposed item. Any cost reduction resulting from substitutions shall benefit the Owner through a contract change of order credit. All substitutions must have acceptance of Architect andior Engineer before equipment is ordered.

B. The Contractor shall assume the cost of/and the entire responsibility for any changes in the work as shown on the contract drawings which may be occasioned by acceptance of materials and equipment other than that specified.

C. In all cases the right is reserved to require adequate proof of the equality of the substitute before permitting its use.

1.7 CODES. PERMITS. INSPECTIONS

A. The installation shall comply with all local laws applying to plumbing installations in effect at the site and regulations of any other Governmental body or agency having jurisdiction and with the regulations of the State of Maine Plumbing Code, where such regulations do not conflict with these laws.

B. If there are any conflicts between the plans and/or specifications with the laws or local ordinances, the Plumbing Contractor shall submit these conflicts to the Architect/Engineer before starting any work. Any work, done prior to this submittal, that needs to be changed to conform to these laws, ordinances or codes shall be made at the Plumbing Contractor's expense.

C. The Plumbing Contractor shall obtain and pay for all permits, inspections, and licenses required.

D. After completion of the work, the Contractor shall furnish to the Architect /Engineer for the Owner, a certificate of final inspection and acceptance from the inspector having jurisdiction.

1.8 EXTRA WORK ORDERS - CREDITS

A. No extra work will be paid for unless authorized by the Owner in writing. Where extra work is required, the Contractor shall provide an itemized account of the work involved and shall take into consideration any credits due or work omitted for any reason. Estimates shall clearly list such omitted work with proper credit given for same.

1.9 COOPERATION BETWEEN TRADES

A. The Plumbing Contractor shall give full information to the General Contractor and other Contractors, sufficiently in advance of this work, so that all necessary work by the other trades may be planned and installed without any delays. The Plumbing Contractor shall furnish and

locate all sleeves, supports, anchors, etc., so that the General Contractor may install the same in place. The Plumbing Contractor shall locate all necessary work in advance without delay to the other trades. The Plumbing Contractor shall advise the General Contractor of required partition thickness and furring to conceal cast iron hubs.

B. In case of failure to give proper information as noted above, the Plumbing Contractor will be required to do his own cutting and patching, or have same done by the General Contractor, but in no case shall there be anv addihonal expense to the Owners.

C. If Plumbing Contractor installs his work before coordinating with other trades, or so as to cause any interference with work of other trades, he shall make the necessary changes in his work to correct the condihons without extra charge.

1.10 PROTECTION

A. Contract Materials: The Plumbing Contractor shall protect all materials and fittings, furnish board enclosures for all water closets, unnals, and lavatones and protect all enameled surfaces with pasted on paper. No fixtures shall be used prior to acceptance.

B. Material of Other Trades: The Contractor shall see that care is exerdsed to prevent injury, discolorahon or defacement of all finished building surfaces. The Plumbers shall do no cutting or fitting of any material other than his own. He shall exercise proper supervision to prevent floods, plumbing torches and portable fires in the building. Anv damage resulting therefrom shall be adjusted under this section to the full satisfaction of the Owner at no additional cost or increase in Contract time.

C Pipes: All open ends of pipe shall be properly capped or plugged during the during the construction period to prevent entrance of foreign materials or damage.

D. **No structural members shall be cut without acceptance of the Owner or Architect.**

1.11 TEMPORARY WATER

A. Existing water supply shall be used.

1.12 GUARANTEE (NOT APPLICABLE) Existing water line will be used.

A. The Contractor shall and hereby does guarantee that all work executed under this section will be free from defects of materials and workmanship for a period of one (l) year from the date of the final certificate and agrees to repair, free of expense to Owner, any defects that may occur within that time.

B. The Contractor shall further warrant that all materials furnished and work executed is in accordance with all applicable laws, regulations, etc.

C. The Plumbing Contractor will not be responsible for defects which are clearly the result of bad usage of the equipment by persons not under his control.

2.1 BASIC MATERIALS AND METHODS

A. Unless otherwise indicated, the materials to be furnished under this contract shall be standard products of manufacturers regularly engaged in the production of such equipment, and shall be the manufacturer's latest standard design that complies with the specification requirements.

2.2 CLEANOUT

A. Cleanouts shall be installed for soil, waste and roof drainage piping at base of all risers, at changes in direction, where shown on plans, and as otherwise required.

B. Provide cast iron body, with inside caulk connections, cadmium plated plug with lead seal, round sconated polished nickel bronze top with vandal proof screws, Zurn #ZN1405-2. Wade ~ Smith are considered as equivalent.

C. Provide clamping collar or membrane flange when required.

2.3 HANGERS

A. Hangers shall be copper clad steel band for all piping. Wrap band snug around shield and insulation and bolt together at top of insulation. Adjustable ring or clevis type may be used. Maximum support spacing shall comply with Section 4, Hangers and Supports, State of Maine Plumbing Code. Provide wall brackets for hangers on piping running on side walls. Prov ide hangers sized for insulation and galvanized shields for piping up to and including 2". Over 2" see Insulation Section of this Specification. All hangers shall be primer coated and one finish coat after installation.

2.4 HANGER SHIELDS

A. Insulation protection shields shall be 180^, carbon steel, galvanized equivalent to Grinnell Fig. 167. For pipe sizes 1/2" to 2", they shall be 18 gauge and 12" long.

SLEEVES

A. Sleeves of steel pipe shall be furnished for straight runs of piping through masonry walls, masonry or stud partitions and floors. When piping is not insulated, the sleeves shall be two sizes larger than pipe size. When piping is insulated the sleeves shall be large enough to allow approximately 1/4" space all around, between sleeves and insulation passing through sleeve. Sleeve will be grouted in place bv the General Contractor under the direction of the Plumbing Contractor. Openings between sleeves and pipes shall be caulked and sealed smoke, fire, and water tight. Sleeves thru floor slabs shall extend l" above finished floor.

B. All interior wall sleeves (floor and wall) penetrations that accommodate piping shall be sealed with a five-hour rated sealant. Sealant shall be Dow-Cornings 3-6548 RTV Silicone Rubber Foam. Apply as directed by manufacturer.

C. All exterior sleeves shall be sealed with oakum, lead and asphalt compound (See

2.6 PLATES

A. Chrome-plated, one piece wall, floor and ceiling escutcheon plates shall be provided at all uncovered piping in finished rooms.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Branch lines from service or main lines shall be taken off the top of the main or bottom of main, using such cross-over fittings as may be required bv structural or installation conditions. All service pipes fittings and valves shall be kept a sufficient distance from other work to permit not less than 1/2 inch from finished covering and such other work, and not less than 1/2 inch between finished coverings on different services.

B. All changes in pipe size and direction of soil, waste and stomm lines shall be made with Y's and cleanouts, reduang fittings, or recessed reducers. Y's and 45 degree fittings, or 45 degree combinahon fittings, shall be used wherever possible. Use long sweep bends at bottom of stacks.

C. All off-sets shall be made at an angle of not more than 45 degrees. All horizontal runs of soil and waste piping shall have a pitch of l /4 inch to the foot unless indicated.

D. Where vertical stacks tum to run horizontally, long sweep 1/4 bends or combination Y and 1/8 bends shall be used. Sanitary T's may be used where honzontal branches connect to vertical stacks. Long sweep fittings shall be used wherever conditions permit. Short radius fittings may be installed where in conformity with the Plumbing Code. Furnish and install cleanouts at bottom of all soil and waste stacks, at every change in direction on soil and waste piping, and where indicated on the drawings.

E. Buried pipe shall be firmly bedded on a compacted gravel bedding at the required line and grade so that the barrel of the pipe rests on its entire length on the bottom of the trench. The interior of the pipe shall be clean when it is lowered into the trench. In no case shall the spigot end in the pipes chipped to avoid the use of a bend. Backfill for all the pipes shall be placed and compacted in accordance with the best practice of the trade.

F. All piping shall be supported from the building structure with pipe hangers. All piping over 2-1/2" size shall be supported from top chord of joists.

G. Cleanouts shall be provided in soil and waste piping in locations such that all portions of the

D. Each stack, leader and vent shall have all openings or branches plugged and shall be filled with water to top of vent through roof and allowed to stand at least one hour for inspection, before draining.

E. The Owners and /or Engineer shall be advised 48 hours in advance of all tests and the Contractor shall submit a statement in writing to the Owners that all tests have been completed in accordance with specification and codes, and shall include a written acceptance from the local Plumbing Inspector.

3.3 INSURANCE

A. The Plumbing Contractor shall carn in a company acceptable to the Architect/ Engineer, public liability and workmans compensation insurance and he agrees to protect himself and the Owner against all loss or damage by accident to employees or the public while carrying on his work. He shall furnish the Architect/Engineer with a certificate or duplicate policy from the insurance company to the effect that such an insurance is carned.

FINAL CLEANING

A. The Contractor, on completion of the work and building, is to clean all fixtures and his metal work, to the satisfaction of the Engineer, and instruct the proper person in the use and control of the entire plumbing system. The Contractor shall remove all oil and debris, clean and polish all fixtures and metal to be exposed, clean out and flush all piping systems, traps and cleanouts.

3.6 FINAL ACCEPTANCE

A. Before final acceptance of the work under this section, all damaged or imperfect materials shall be refinished or replaced. All debris, scaffolding, and tools shall be removed and premises shall be "broom clean" to the satisfaction of the Owner.

WATER SYSTEM

PART I- GENERAL

1.1 SCOPE

A. The work under this section shall include all labor and material to install a domestic water system as shown on the drawings or specified herein or both.

1.2 GENERAL CONDITIONS

A. Refer to General Provisions Section 15000 for provisions affecting work in this section.

1.3 CROSS CONNECTIONS

A. No piping shall be installed to permit any back siphonage or flow of any polluted liquid into water distribution system.

B. Vacuum breakers, air gaps or funnel type drains shall be used as required by local and State Plumbing Codes. All piping to faucets with hose threaded outlets and all fixtures with their outlets below the overflow shall have vacuum breakers.

1.4 WORK INCLUDED

A. The work shall include, but shall not be limited to the following

1. Fixtures connected (whether supplied or not).

2. Hot and cold water systems. Piping, hangers, sleeves, fittings, valves, gauges, controls, etc., required to complete the system.

4. Building water mains, connect to existing system.

1.5 WORK BY OTHERS

A. The following work, which is incidental to the installation will be executed by others under the direction of the Plumbing Contractor.

1. Execute all required masonry and carpentry work, cutting, patching, furrings, plastering, etc., except as herein noted. (General Contractor)

2. Execute all required excavation work, backfilling, grading, etc. for water. (General Contractor)

3. Finished painting of piping, supports except as herein noted.

4. Access panels in ceilings and walls for access to valves.

PART 2 PRODUCTS

2.1 BASIC MATERIALS AND METHODS

A. Unless otherwise indicated, the materials to be furnished under this contract shall be standard products of manufacturers regularly engaged in the production of such equipment, and shall be the manufacturer's latest standard design that complies with the specification requirements.

B. All copper tubing shall be cut through; the ends shall be reamed out to the full inside diameter of the pipe.

2.2 DOMESTIC HOT AND COLD WATER SYSTEM

A. Copper tubing shall be Type "L" for above ground, ASTM B-88.

B. Copper tubing shall be Type "K" for underground, ASTM B-88.

C. Types "K" and "L" copper tubing shall have joints of either wrought-copper or case brass solder joint fittings.

D. Copper tubing and Httings shall be equivalent to Mueller Brass Co. Streamline Products.

2.3

SOLDER

A. Solder for all accessible joints shall be "Lead Free" made up of 95.5 percent tin, and 4 percent copper and .5% silver equal to Engelhard Silver Brite 100. Flux shall be noncorrosive. All joints shall be wiped clean of solder and flux. Piping under ground or slab on grade shall have silver solder joints of at least 1000i degrees solder.

2.4 VALVES

A. All valves shall be Nibco-Scott, Hammand, Fairbanks, or equivalent. They shall be installed where indicated and otherwise required to provide for complete operation and drainage of the system. Gate valves shall be used for shut-offs and drains, globe valves shall be used for throttling and plug type for balancing. Solder or screw type mav be used up to 2" size, screw type only for 2-l/2" size and over. All above ground valves shall be of one manufacture.

WATER HAMMER
ELIMINATORS

Furnish and install air chambers to serve as water hammer eliminators at each branch hot and cold water feeds.

2.6 EXPANSION JOINTS. LOOPS AND ANCHORS

Provide expansion joints and loops on hot water supply and circulating returns where required to control expansion. Provide rigid anchors where required. Anchors shall be bolted collars held by angular braces in direction of piping. Provide guides on each side of all expansion joints.

2.7 HOSE BIBBS (H.8.)

Provide in locations shown on drawings Wolverine 5026 hose bibbs. Frostproof.

PART 3 - EXECUTION

3.1 BASIC WATER PIPING SYSTEM

A. Furnish and install the complete domestic hot water and cold water systems essentially as indicated on the drawings connecting to all fixtures and equipment requiring these services.

B. Piping shall be new, run parallel, and graded evenly to draining points.

C. Provide 1.2 inch drain valves at each low point in each piping system so that all parts of each system can be drained.

D. No plumbing fixtures, devices, or piping shall be installed which will provide a aoss or inter-connection between a distributing supply for a drinking water system or domestic water system and a polluted supply or drainage system or plant water system.

E. Changes in pipe sizes shall be made with reducing fittings.

F. Piping shall run as high and as close as possible and parallel to the walls, or as shown.

G. Escutcheons shall be used for all insulated pipes passing through walls and finished spaces.

H. No water pipe shall be installed outside of the building or in an exterior wall unless adequate provision is made to protect such pipe from freezing.

1. The Contractor under this section shall make all final water connections to all equipment requiring these services that are furnished under other sections of this specification or furnished by the Owner, all as shown on the drawings. Connections shall include shut-off valves, flow restrictors, vacuum breakers, unions and such other trim as hereinafter specified.

J. Exposed water piping in toilets shall be chromium plated I.P.S. copper or brass pipe or tubing and fittings. Valves on exposed water piping in toilets shall be chromium plated brass or bronze.

K. Provide gate valve at base of all domestic water risers and stop and check valves on all supplies to thermostatic mixing and shower valves, and gate and check valves on all circulating

hot water retum branches to main.

L. Provide shock absorbers, chains, anchors, guides and expansion loops or joints as indicated or otherwise required to control pipe movement and any water hammer noise.

3.2 DOMESTIC COLD WATER

A. The building cold water system shall begin at the existing building service.

B. The cold water system includes furnishing cold water main with risers, drops and branches to all fixtures and equipment.

C. Provide suitable means to protect all water piping from water hammer.

3.3 DOMESTIC HOT WATER SYSTEM

A. The main hot water system shall include connecting hot water and cold water piping to hot water heaters as shown on plans, hot water supply mains with risers and branches to all fixtures and equipment.

B. Hot water piping shall be kept at least 6 inches away from cold water lines.

C. Provide suitable means for thermal expansion for all hot water piping, using swing joints, expansion loops and long off-sets, as required.

D. Vent all high points in the hot water system. All hot water piping shall be pitched up toward fixtures and risers for proper air relief. (Fixture supplies shall be considered vents.)

E. Provide a suitable means to protect all water piping from water hammer.

SANITARY SYSTEM

PART 1- GENERAL

1.1 SCOPE

A. The work under this section shall include all labor and material to install a sanitary soil, waste and drainage system as shown on the drawings or specified herein or both.

1.2 GENERAL CONDITIONS

A. Refer to General Provisions, Section 15000 for provisions affecting work in this section.

1.3 WORK INCLUDED

A. The work covered by this section of the specifications shall include, but is not limited to, the following:

l. Fixtures connected (whether supplied or not).

2. Piping, hangers, sleeves, cleanouts, vents, fittings, traps, controls, etc., required to complete the system.

3. Floor waste system including traps.

Sanitary drainage and venting system connected to exsishng.

5. Sewage lift pump and accessories are not included.

1.4 WORK BY OTHERS

A. The following work, which is incidental to the installation will be executed by others under the direction of the Plumbing Contractor:

l. Execute all required masonry and carpentry work, cutting, patching, furrings, plastering, etc., except as herein noted.

2. Execute all required excavation work, backfilling, grading, etc. for water, drains, sewers, storm water, etc.

3. Finished painting of piping supports and insulation, except as herein noted.

4. Toilet ventilation. (By Ventilation Contractor)

5. Access panels in ceiling and walls for access to cleanouts valves, etc. (By General Contractor)

PART 2- PRODUCTS

2.1 BASIC MATERIALS AND METHODS

Unless otherwise indicated, the materials to be furnished under this contract shall be standard products of manufacturers regularly engaged in the production of such equipment, and shall be the manufacturers latest standard design that complies with the specification requirements.

SANITARY SYSTEM

A. All sanitary soil, waste and vent piping and fittings below lowest floor, in earth or concrete, shall be PVC or no-hub cast iron. All pipe and fittings used for drain, waste and vent piping shall conform to requirements of Maine State Plumbing Code for material and gauge.

B. All joints for PVC pipe shall be secured only with solvent cement that is recornmended by the pipe manufacturer.

C. Sanitarv soil, waste and vent piping systems above lowest floor may be PVC or Tyler cast iron, no-hub, CISPT standard 301-72, bitumastic coated.

D. Acid-resisting pipe and fittings shall ix G.S.P. Fuseal F.R. polypropylene.

2.3 FLOOR DRAINS (NOT REQUIRED)

A. Drains shall be provided and installed with all waste and vent connections. An floor drains shall be provided in accordance with the drawings. Each floor drain shall have deep seal trap.

B. All of the floor drains shall be installed in an approved manner, finished surfaces protected during construction and set level and installed as recommended by manufacturer.

C. All surfaces, grates, buckets, etc., shall be cleaned and all construction dirt and stains removed at completion of project.

D. All floor drains not installed in slab on grade shall be hrnished with clamping collars.

E. Floor drains to be PVC with 6" dia. C.P. Cast Iron strainer equal to #PHD-824 by Plastic Oddities, Inc. unless specified on the drawings.

2.4 SEWAGE LIFT PUMPS AND BASIN (NOT REQUIRED) The Contractor shall use any existing pumps and lifts. However, if new pumps and lifts must be installed the Contractor will provide the following specifications for the owner at labor plus materials.

A. Provide duplex submersible wastewater pump system with all the necessary controls and accessones. Pumps shall be 3" discharge solids handling with cast iron impellers, body and housing. Float type control switches shall be mercury type sealed in polyurethane float. Control

panel shall have necessary contactors, circuit breakers, manual=off=automatic switch, run lights, alarm horn and light and Nema 1 enclosure. Pump shall be equal to Gould model #3887, 1/2 H.P., 240 v., single phase, rated for 94 G.P.M. at 15 ft. head. Switches and control panel shall be equal to Gould's #A2-3 switch and Ab-1012 duplex control panel.

PART 3 - EXECUTION

3.1 SOIL AND WASTE SYSTEM

A. Furnish and install complete drainage system inside the buildings essentially as indicated on the drawings, connecting to all fixtures, drain and equipment.

B. Soil. waste, and vent conductor piping inside the building shall be run as indicated on the drawings, properly secured to the building structure with iron hangers. Extend to roof all lines of soil, waste and vent piping in stacks with all branches and fittings required and with extension through roofs as required bv the Plumbing Code, a minimum of 24 inches above the finished roof level. Where an end circuit vent pipe from anv fixture or line is connected to a vent line serving other fixtures, the connection shall be at least three feet above the highest fixture branch or high enough above the floor to prevent the use of the vent line as a waste line.

C. All fixtures and drains on the sanitary system shall be separately trapped and all traps shall be vented, unless otherwise indicated on the drawings for fixtures or drains in battery ventilation systems.

D. All traps and running traps where buried in or under floors or serving floor drains shall have top clean-outs and extensions, with brass covers.

INSTALLATION AND WORKMANSHIP

A. All plumbing work must be installed in accordance with plans and specifications except as otherwise required by local and State requirements. This Contractor shall obtain and pay for all necessary permits, licenses and fees in accordance with installation of services.

B. All piping shall be located approximately as shown. Slight relocations will be permitted to improve function, clearance and appearance.

C. Pitch sanitary, waste and vent piping 1/4" per foot or as indicated. Conceal all piping where possible.

PART 1 - GENERAL

1.1 SCOPE

FIXTURES AND TRIM

A. The work under this section shall include all labor and material to install all fixtures as shown on the drawings or specified herein or both.

1.2 GENERAL CONDITIONS

A. Refer to General Provisions Section 15000 for provisions affecting work in this section.

1.3 PROTECTION

A. The Plumbing Contractor shall protect all fixtures from damage during construction, furnish board enclosures for all water closets, urinals, lavatories and sinks and protect all enameled surfaces with pasted on paper. No fixtures shall be used prior to acceptance.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Fittings and Trim: Shall be chrome plated brass and unless otherwise specified shall be of same manufacture as fixtures, including traps, flow restrictors, supplies, stops, and union connections. Any chrome trim with wrench marks shall be removed and new trim installed.

2.2 FIXTURES

A. All fixtures shall be free from all imperfections, smooth watertight and complete in every respect.

B. Where specified, fixtures of American-Standard Manuhcturer of description and quality listed, or equivalent, shall be furnished and installed complete with all wall hangers, stops, fittings and connections.

FIXTURE SUPPORTS

A. Provide acceptable foot supported carriers for all wall hung fixtures except where noted on plans. Carriers shall be as noted on the drawings.

B. No fixture shall be supported off the wall except where noted on plans.

PART 3 - EXECUTION

3.1 CONDITION OF SURFACES

A. Inspection of Roughing-ln: Inspect roughing-in to see that it is in the exact position to allow fixtures to be at locations and heights indicated. Do not proceed until all positions are verified or any adjustment in fixture location is accepted bv Architect/Engineer.

3.2 INSTALLATION

A. Traps: Provide traps for all fixtures and equipment whether supplied or not, chrome-plated brass non-siphon traps shall be provided where required by the law in lieu of traps.

B. Fixture Hangers and Stops: All fixtures supplied under this contract shall have key stops on supplies and mounting hangers or brackets for wall hung types. Also, provide key stops on supplies to all fixtures not supplied but connected under this contract.

C. Fixture Mounting Heights: Verify all mounting heights with Owners.

3.3 CLEANING

A. Clean ffxtures and trim just prior to ffnal inspection. Clean out all strainers and aerators and adjust or replace washers to prevent leaks at faucets and stops

SECTION 15650

PART 1 GENERAL

1.1 GENERAL CONDITIONS OF THE CONTRACT:

All of the provisions of the General Conditions, Information for Bidders, Special Provisions of the General Contract are a part of this section. The heating and ventilation subcontractor should familiarize himself with these sections of the project.

1.2 SCOPE OF WORK:

The Heating, Ventilating and Air Conditioning (H.V.A.C.) subcontractor or shall furnish all labor and materials to complete all heating and ventilating work as shown on the drawings or herein specified, or both. The drawings do not show all the details for the pipes, valves, fittings, hangers, duct work and equipment to be used for complete installation, but show general arrangement and extent of the work to be performed. Included in this contractor's work (but not limited to) are:

A. Boiler and accessories. **Propane Gas will be the main source of fuel**.

B. Room Heating Units. (NOT REQUIRED)

C. Piping and supports.

D. Valves, fittings and related items.

E. Insulation of piping and ductwork.

F. Fuel supply system.

G. Hot water specialties: i.e. air vents, and drains, etc.

H. Boiler and room temperature control system and all low voltage control wiring.

I. Ventilation fans, air handlers and ductwork.

J. Hot water heater and controls

K. Cut all holes for piping in walls, floors and ceilings.

1.3 WORK EXCLUDED

A. General cutting and patching.

B. Grouting and sealing of piping penetrations.

C. Line voltage electrical work.

D. Painting of piping and associated heating and ventilation equipment unless snecificallv specified herein.

1.4 SPECIAL CONDITIONS

A. All materials shall be new and of the latest design of the respective manufacturers. All materials and equipment of the same classification shall be of the same manufacture unless otherwise specified.

B. Codes constitute minimum requirements. If a higher standard is specified, the higher standard shall supersede the code requirements. Any conflicts shall be resolved to the satisfaction of the Engineer before proceeding with construchon. The latest edition of the Standards for the Installabon of Oil Burning Equipment, State of Maine Department of Insurance and all other applicable codes shall be the standard for this project. Interpretations of these codes must be acceptable to the Engineer.

C. Specification by brand name, manufacturer, or type is to establish standards of quality and style. Under the contract these materials shall be furnished as specified, unless a change has been approved by the Project Engineer. Where two or more designations are listed, the Contractor may select at his option.

D. Drawings shall be considered as though part of the specifications. All information contained on the drawings supplied by the Engineer shall be as though it were written in these specifications, subject to the following:

1. Drawings are not to be scaled for dimensions.

2. Layouts are not absolute. It is subject to minor changes to facilitate installation.

3. Locations are not exact, but are as close as clear drafting practice will allow. Field verification with the Engineer or his designated representative shall be the responsibility of this Contractor.

4. This contractor shall keep himself fully informed on the space and position requirements of his work and shall give information to the General Contractor to allow coordination with other trades. Particular attention shall be paid to proper clearance from other pipes, electrical conduit, etc., as well as any other structural components.

5. A set of AS-BUILT DRAWINGS, clean and clearly marked in red, shall be kept on the job at all times and turned over to the Engineer upon complehon of the project.

1.5 SUBSTITUTIONS

A. Any proposal for substitution shall be made in writing by the heating subcontractor who shall

submit full details for consideration and obtain written approval of the Engineer. The Engineer's decision as to acceptability of the substitute material or equipment shall be final. Approval by the Engineer for such substitutions shall not relieve the heating subcontractor from responsibility regarding a satisfactory installation of such work in accordance with the intent of the plans and specifications and shall not effect his guarantee covering all parts of the work.

B. Any additional cost resulting from the substitution of equipment shall be paid by this subcontractor.

ELECTRICAL

PART 1- GENERAL

1.1 General Provisions

A. General Provisions - All Contractors, Subcontractors and material suppliers shall be responsible for becoming fully , informed of all specifications, procedures, etc., given in the General portion of these Specifications as well as all Addenda, any other divisions of the Specifications, and all drawings as they may affect the work of this Division or the coordination of this work with that of others.

1.2 Scope of Work

A. The work described herein shall be interpreted as work to be done by the Electrical Subcontractor. Work to be performed by other trades will always be specifically referenced to a particular Contractor or Subcontractor.

The work covered by this section consists of furnishing all labor, materials, equipment, supplies, fixtures, devices, etc., and in performing all operations including setting sleeves, channelling and chasing necessary for the installation of a complete wiring systen, all in strict accordance with this section of the specifications and the accompanying drawings and subject to the terms and conditions of the contract and including but not restricted to the following:

(1) Underground secondary

(2) Service equipment

(3) Panels and switches

(4) Fixtures and lamps

(5) Temporary light and power

(6) Wiring devices and plates

(7) Equipment connections

(8) Interior telephone wiring and conduit

(9) Cable TV system

lO) Smoke detectors

(11) Emergency lighting

(12) Exit lights

(13) Record plans of "As-Built" construction

C. Related work specified elsewhere. The following work is not included under the electrical section.

(1) Excavation and backfilling

(2) Payment for all energy for temporary light and power, including energy for testing.

(3) The concrete bases, concrete envelopes, for services and light standards.

(4) All cutting and patching

(5) All finish painting is included under the work of finish painting.

D. Other requirements of this section. The Electrical Subcontractor shall study the specifications of the other phases of the General Contract and all of its subdivisions. All electrical work and wiring material requirements, including unit supplied by others, but not motors of appliances which may be necessary therein, are to be considered as part of and required under the Electrical Subcontractor's specifications and contract, even though as such no mention or notations have been included in the Electrical Drawings or specifications, unless same shall have been specifically excluded as Electrical Subcontractor's requirements.

1.3 General **THE CONTRACTOR WILL BE USING EXISTING POWER SOURCE.**

A. This Contractor shall furnish and install temporary wiring for use of all trades throughout the building as follows: a 20 amp-120 volt source shall be available at all areas of construction with a 100 ft. extension cord.

B. This Contractor shall furnish and install a temporary lighting system per OSHA and ANSI requirements. The minimum light level maintained during construction shall be 10 footcandles in all spaces and locations of the construction project when measured 12 in. above the floor or ground surface.

C. This Contractor is hereby advised to visit the proposed building site to acquaint himself with general conditions of the terrain. No concession will be made in favor of the Contractor for difficulties incurred as a result of failure to visit the site.

D. This Contractor shall coordinate his work with the progress of the building and other trades such that he shall complete his work as soon as conditions permit and so that interruptions of building functions will be at a minimum. Any overtime hours worked or additional costs incurred due to lack of or improper coordination with other trades or the Owners by this Contractor shall be assumed by this Contractor without any additional cost to the Owner.

E. Waste material shall be removed promptly from the premises. All material and equipment store on the premises shall be kept in a neat and orderly fashion. No material shall be stored where exposed to adverse weather conditions.

G. This Contractor shall erect and maintain at all times necessary safeguards for the protection of life and property of Owners, workmen, staff, and public. After the interior wiring system installation is completed, and at such time as the Engineer or Owner may direct, the Contractor shall conduct an operating test for approval. The test shall be performed in the presence of the Owner, Engineer, or their authorized representative. The Contractor shall furnish all instruments and personnel required for the tests, and the Owner will furnish the necessary electric power.

H. The Contractor shall guarantee in writing all workmanship, materials and equipment to be free from defects for period of one year from date of acceptance of the project, and shall make good any and all defects within that period without cost to the Owner.

No change shall be made from the work, equipment or materials as called for by the Specification and the accompanying drawings, except on a written order of the Owner. When such changes reduce the Contractor's materials, labor, equipment or expense, the saving thus affected shall be used in full to reduce the contract price. No charge for extra work will be allowed unless such extra work has been authorized by a written order of the Owner, stating the change to be made for such work.

I.4 Codes and Standards

A. Unless otherwise indicated in writing by the Architect or Engineer, the materials furnished under this specification shall be the standard products of manufacturers regularly engaged in the production of such equipment and shall be the manufacturer's latest standard design and shall also conform to such standards as to their quality and fabrication as have been established by the following:

(1) National Electrical Code (current edition)

(2) State Department of Public Safety

(3) Standards of the Underwriter's Laboratories (UL)

(4) National Electric Safety Code, American National Standards Institute

(S) Institute of Electrical and Electronic Engineers (IEEE)

(6) National Electrical Manufacturer's Association (NEMA)

(7) American Society for Testing and Materials (ASTM)

(8) Local Codes.

B. Where the contract documents indicate more stringent requirements than the above codes and ordinances, the contract documents shall take precedence.

C. The installation shall comply with all local laws applying to the electrical installation in effect with regulations or any other governmental body or agency having jurisdiction, and with the regulations of the National Electrical Code where such regulations do not conflict with those laws.

D. This Contractor shall obtain and pay for all permits required by local ordinances. After completion of the work, this Contractor shall furnish to the Engineer, for the Owner, a certificate

of final inspection and approval from the Inspection Bureau having jurisdiction.

1.5 Drawings

A. The Contract drawings indicate the extent and schematic arrangement of the conduit and wiring systems. If any departure from the drawings are deemed necessary by the Contractor, details of such departures shall be submitted as soon as practical and within 30 days after award of contract, to the Engineer for approval. No such departures shall be made without the prior written approval of the Engineer.

B. These specifications are accompanied by floor plans of the building showing the location of outlets, switch controls, devices, panels, service and feeder distribution, telephone outlets, power apparatus, and equipment. Schematic wiring diagrams, structure construction, workinq drawings, and certain details are also shown. The drawings, except the structure, are intended to indicate only diagrammatically the extent, general character and approximate locations of the work included. Work indicated but having minor details obviously omitted, shall be furnished complete to perform the function intended without additional cost to the Owners.

C. The Architectural, Structural, and Mechanical Drawings should be followed and this section of the work fitted thereto. If any departures from the contract drawings are deemed necessary by this Contractor, details of such departures and the reasons therefore shall be submitted, as soon as practical and within 30 days after award of the contract to the Engineer for approval. No departures shall be made without the prior written approval of the Engineer or his authorized agent.

D. The drawings and these specifications are complementary each to the other and any items specified but not shown or vice versa shall be referred to the Engineer for clarification and shall consequently be furnished and installed as if both shown and specified.

Record drawings of all changes to the contract plans shall be kept during construction, and one clean set of prints neatly marked in red ink shall be turned over to the Engineer upon completion of the project, for the Owner's use.

1.6 Electrical Service System

A. This Contractor shall coordinate with the local utility companies to provide the service entrances (electrical, cable TV and telephone) as indicated and specified and so as to be in the best interests of the Owner.

PART 2 PRODUCTS

2.1 Materials and Workmanship

A. The materials and workmanship shall be the best of their kinds and in full accord with the most modern electrical construction. All materials shall be new.

B. Defective equipment or equipment damaged in the course of installation or test shall be replaced or repaired in a manner meeting the approval of the Engineer.

C. In cases where equipment and materials are specifically specified, equal substitute material will be permitted only upon specific approval in writing by the Engineer before the installation is made or material ordered.

D. This Contractor shall submit detailed shop drawings (cuts, brochures, drawings including custom schematics of systems, etc.) in triplets (3) within 30 days afterward of Contract to the Engineer for review. Submittals to include but not be limited to the following:

(1) Panels

(2) Service equipment

(3) Meter center

(4) Lighting fixtures and lamps

(5) Wiring devices including switches and receptacles

(6) Control devices

(7) Time clocks

(8) Disconnect switches, starters

(9) Wires and cables

(10) Exit lights

(11) Emergency Lighting

E. The Electrical Contractor shall also furnish samples of plug receptacles, light switches, and other small parts.

F. All shop drawings shall be submitted at one time and partial submittals forwarded from time to time will not be accepted.

G. Corrections or comments made on the shop drawings during this review do not relieve the Contractor from compliance with the requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents the Contractor is responsible for confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; and performing his work in a safe manner. Furthermore, all shop drawings shall have the Contractor mark stating he has reviewed the same for conformance to drawings and specifications, including all Addenda.

H. At the completion of the work, this Contractor shall turn over to the Engineer, for the Owner's use, one (1) sets of operating and maintenance instructions of all equipment. The Contractor shall explain and demonstrate the operation of each system to the Owner's representative.

2.2 Raceways and Fitting

A. Wiring in masonry walls shall be run in electrical metallic tubing. Concealed wiring in stud walls may be run in non-metallic sheathed cable. Wiring run in or under slab or below grade shall be run in either rigid steel conduit or PVC Schedule 40.

2.3 Conductors

A. A complete system of conductors shall be installed in the raceway systems. Line voltage branch circuit conductors shall be 12 AWG, copper, minimum except as otherwise note on the drawings. Home runs over 100 feet shall be in 1OAWG minimum.

B. Conductors shall be thermoplastic insulated, Type THW, THWN, THHN or XHHW (where permissible).

C. All reference to wire size is intended as copper wire. Aluminum may be used for 6AWG and larger if the capacity is made equal and the proper connectors are used. Where aluminum wire is used, install on each end of the wire, Square D Type CEP connectors. Install connectors with proper compression tool. Use anti-oxide paste on all aluminum wiring.

2.4 Electrical Service System

A. The building electrical service is underground secondary from the pad mounted transformer to the main service switch

(1) Connections at the transformer will be by Centeral Maine Power Company. Secondary transformer lugs shall be provided by the Contractor but installed by the utility company.

(2) Furnish and install secondary wire and conduits.

(3) The installation shall be in strict accordance with the standards of the utility company.

B. The building secondary service shall be three phase, 3 wire , 120/240V.

2.5 Electrical Entrance Equipment

A. The meter center shall be as shown and detailed on the drawings.

B. Current limiting type fuses shall be provided, equal to Buss.

2.6 Grounding System

A. The entire electrical installation shall be provided with a system ground connected to the water service entrance pipe, building steel and also connected to a 5/8" x 8'-on ground rod. Installation shall be in accordance with N.E.C. requirements. See Tables 250-94(a) and 250-95 (N.E.C).

B. Run a separate grounding wire to all outlets.

C. Ground wire secured under conduit bushings or cable clamps will not be permitted.

2.7 Electrical Distribution System

A. This Contractor shall furnish and install where indicated on the drawings, disconnect switches fused as required and of a size as indicated or required.

B. Switches shall be general duty type, Square D, ITE, General Electric or Westinghouse.

C. Fuses shall be furnished and installed for all fused switches provided under this section, of a size as indicated or required. One complete set of spare fuses shall be delivered to the Owner for each switch requiring fuses.

D. The Contractor shall furnish and install on each panel, disconnect switch, etc., a name plate of engraved plastic material inscribed with the purpose of the particular piece of equipment.

E. Load centers shall be single phase, 3 wire, solid neutral for operation on 120/240 volt system, Square D, ITE, General Electric, Westinghouse or Cutler Hammer. Panels shall be for surface or recessed mounting, and with main lugs and/or breakers as indicated on the panel schedule.

F. Provide number of circuits, number of poles, ampere ratings, spare breakers, and spaces, all as indicated on the panel schedules.

G. Cabinet boxes shall be constructed of zinc-coated sheet steel and shall conform to the requirements of Underwriters' Laboratories, Inc., Standard for cabinets and cutout boxes. Box shall be zinc-coated after fabrication. Trim shall have a baked-on primer coat and baked enamel finish. Each panel shall be fitted with hinged door with latch, and metal frame on inside with neatly typed directory, identifying each circuit. Circuit breakers and directory shall be correspondingly identified.

2.8 Wiring Devices

A. This Contractor shall furnish and install receptacles and switches equal to the following:

(1) Wall Switches:

(2) Duplex receptacles:

Leviton, 5521, Ivory Pass & Seymour or Arrowhart are acceptable.

Leviton, 5362, Ivory Pass & Seymour or Arrowhart are acceptable.

(3) Ground fault receptacles: Leviton, 68g8 ith w indicator light

(4) Switch and receptacle plates shall be ivory.

(5) Provide devices and/or plates for all outlets whether specifically mentioned or not.

B. Range receptacle shall be Circle F, General Electric, or Pass & Seymour. Rated 50A, 250V, 3 wire grounded type.

C. All switches and receptacles shall be flush mounted in all areas.

2.9 Lighting Fixtures

A. This Contractor shall furnish, install and connect complete to the wiring system, ready for proper and satisfactory operation, all lighting fixtures shown. The number and type of lighting fixtures are as shown on the drawing, and as scheduled herein. The manufacturer's name and catalog numbers referred to are given for identification of type of fixtures desired for locations as indicated on the drawings. Fixtures of other manufacturers, similar in design and equal in operation, efficiency, utilization, quality and finish to the various units scheduled may be submitted as substitutes, provided cuts of units, together with all necessary and pertinent photometric and construction data and prices, showing either additional cost or saving to the Owner, are included with, but not as part of the bidding documents. This Contractor shall not assume that a fixture may be substituted or to show or include same in his bid.

B. In general, all fixtures shall bear the Underwriters' Inspection Label, and be ETL certified. All fluorescent ballast shall be high power factor type and ETL certified under CBM specifications. All ballasts shall be Type P or approved equal. Ballasts shall be electronic type, Magnetec-Universal or approved equal, and compatible to the Octron lamps.

C. Each fixture shall be supplied with the necessary end caps, straps, supports, hangers, canopies, or other miscellaneous materials and devices to install them in a satisfactory manner and to conform to the architectural treatment in the areas in which they are to be installed. The Contractor shall consult all architectural and structural plans, etc., in order that he may familiarize

himself with all necessary details for the various units to be installed throughout the project. Failure to do this will not relieve him of furnishing the necessary materials, etc., to perform the function intended for the lighting system as shown on the drawings.

D. All fixtures shall have installed therein a lamp of wattage noted and as required for each unit. Fluorescent lamps shall be energy saving type (32 watt, Sylvania Octron T8 or approved equal) and compatible with ballasts. Lamps installed in fixtures shall be orientated in the same direction for each area. Lamps shall be rated at 125 volts. All lamps shall be furnished by the Contractor. All incandescent lamps shall be extended life type.

E. Recessed fixtures shall include thermal protection and shall so be identified as thermally protected.

F. All fluorescent fixtures shall be rapid start type unless noted otherwise.

G. This Contractor shall furnish and install exit lights where shown and as diagrammed on the drawings. Provide d.c. emergency circuit with 2 d.c. lamps in all exit lights. Fixtures shall be surface mounted, wall or ceiling as indicated, Prescolite Thinline series, or approved equal, universal mount. Provide single or double face and arrows, as indicated, brushed aluminum face with red letters and two line voltage PL-7 lamps.

H. Provide d.c. emergency circuit wiring to all exit fixtures fro. battery in emergency lighting sets.

I. This Contractor shall furnish and install where and as shown on the drawings, and as specified, complete and operating battery operated emergency lighting unit.

J. Unit shall be equipped with pure lead batteries and 12 watt tungsten halogen lamps, similar to Dynaray or Duallite.

2.10 Telephone System

A. Provide a telephone entrance, conduit and outlets as shown on the drawings and as herein specified.

B. All work shall be in accordance with the requirements of the telephone company, and this Contractor shall verify the installation as drawn and specified before any work is started.

C. Telephone cables in apartment units shall be run concealed in walls and/or attic space.

D. Furnish and install grommets where telephone cables penetrate steel studs.

E. This Contractor shall verify the installation as drawn and specified with the Engineer before any work is started. Wire shall be submitted as a shop drawing.

F. This Contractor shall install telephone wiring to the telephone outlets shown on the drawings

from the network interface box.

G. Cabling shall be 4 pair, 24 gauge, jacketed twisted wire, color coded.

H. All telephone outlets shall be supplied with:

(1) Jack plate SE-625B3-4 (Suttle or Equal). This is a duplex modular jack with cover to be used where an electrical box is built flush into wall.

I. Install a half inch conduit from the attic to the network interface box in each apartment unit.

2.11 Smoke Detector System

A. Suitable and proper equipment shall be furnished and installed in order to accomplish this action. Equipment shall be Simplex, Honeywell or Gamewell.

2.12 Emergency Notification System

A. This Contractor shall furnish and install an emergency notification system as shown on the drawings and as herein specified.

2.13 Cable TV Distribution System: OPTIONAL.

A. This Contractor shall coordinate with the local cable TV company such that a complete system is installed within each apartment unit in the building.

B. The local cable TV company will designate the type of cable and outlets that are to be used. This contractor shall furnish and install all cable and outlet devices at the direction and approval of the cable TV company.

C. The TV cable shall be run on an outlet to outlet basis with splitters andfor taps as required by the cable TV company.

2.14 Equipment Connections

A. The Mechanical Contractor shall furnish and erect all motors' etc., for the mechanical equipment.

B. This Contractor shall furnish and wire all switches, disconnects, etc., and shall wire the circulating pumps, exhaust fans, etc., as specified, indicated, or otherwise required with the heating equipment.

3.1 Equipment Connections-Conductors

A. Equipment connections shall be made with flexible metal conduit, liquid tight in damp or wet

locations. Where equipment is furnished and installed by other trades for connection to the electrical system, this Contractor shall make the connections and said connections shall conform to the National Electrical Code.