Littleton Town Hall Building & Space Needs Assessment

Volume III: DCU Office, Existing Conditions Report

DCU Office & Retail Branch Building
255 Great Road
Littleton, MA 01609

October 2019

LLB
ARCHITECTS

Project Team

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I . Executive Summary

Introduction

In the Fall of 2019, LLB Architects and their team of architectural, structural, mechanical, electrical, plumbing, and fire protection consultants conducted an Existing Conditions Assessment of the subject property located at 255 Great Road and associated parking lot.

This study was developed to inform interested parties of the viability of using this building and the adjacent surface parking lots as a future home for a yet to be determined municipal program. This report is accompanied with numerical and photographic information to support the findings, as well as recommendations where necessary.

The following report is presented in five parts, beginning with a high level summary and progressing into further detail. The first part of this report introduces the project, summarizes the findings, and describes the methodology used and assumptions made to aid future analysis and decision making. The second part of this report assesses the existing building from a building code, zoning, and accessibility standpoint. In the third part, this team has provided detailed descriptions of each major component of the existing building, including the roof, siding, masonry and interior conditions. Here, this report provides a more focused understanding of the current conditions of the building. Included in each of these component assessments is our team's professional opinion as to the predicted life expectancy based on the current conditions observed. Following these, in a fourth part, are the supporting reports from the team's consulting engineers' assessments of the building and its associated parcel. In addition to the structural, mechanical, electrical, plumbing, and fire protection reports, a copy of the civil report created by CDW Consulting is included. Finally, copies of the building's documentation have been provided for reference as an exhibit at the end of this document.

Summary of Findings

Architectural Assessment

LLB Architects conducted a visual assessment of the existing building and its systems. The overall architectural assessment is described in detail in the Existing Conditions Survey (part III) of this report.

The Roofing System is reaching the end of its life expectancy. Several areas of the roofing insulation were observed to be soft with separation from the roofing membrane indicating likely water damage and potential for leaks.

Recommendation: Replace the roof during the initial building renovations.

The Windows on the building are showing signs of aging, but can remain in use. The points of the most wear happen at the sealant joint between the sash (frame) and insulated glass unit (IGU) and can be easiliy seen as “oozing” and dripping.

Recommendation: Windows should be repaired or replaced during the initial building renovations to prevent leaks, however this failed sealant joint is typically installed in a factory setting- and therefore full window replacement is most likely required.

Sealants at masonry to wood, wood to wood and others appear to be falling or have failed and might be causing water damage.

Recommendation: The Sealants should be replaced during the initial building renovations to prevent further damage.

The exterior enclosure of the building is painted wood clapboard and masonry comprised of brick. Repointing work on the exterior masonry was completed during the renovation removing the ATM. Overall there are areas that are showing signs of loss and deterioration and should be addressed to prevent further damage.

Recommendation: Open masonry joints should be addressed immediatley as they permit water infiltration.

Structural Assessment

Structural conditions at the 255 Great Road building were observed by Roome & Gauricino via available documents. For the full report, refer to the Supporting Reports (part IV) of this report.

Generally speaking, floor and roof construction appear to be performing satisfactorily. There are no apparent signs of structural distress that would indicate significantly overstressed, deteriorated, or failed structural members.

Foundations appear to be performing adequately. There are no signs of significant total or differential settlements.

Mechanical Assessment

HVAC Heating System:

The building heating system consists of two (2) gas fired HB Smith cast iron sectional boilers, each with a capacity of 1,139 MBTU/hr. Boilers appear to have been installed in 1988 and they are about thirty (30) years old. The boilers appear to be in good condition but are approaching their life expectancy.

Recommendation: Boilers should be replaced between 7-10 years.

Hot water from the boilers is circulated via base mounted hot water pumps and supply hot water to the two (2) main air handling units on the mezzanine above the pumps. Hot water is also supplied to perimeter radiation units under the exterior windows. The pumps appear to be in good condition.

Recommendation: Pumps should be replaced between 7-10 years.

Cooling System:

The cooling system consists of a water cooler (cooling tower) York chiller installed in 2017. The chiller is a scroll type chiller with four (4) compressors and one hundred fifty (150) ton capacity. The chiller is only two (2) years old and is in very good condition. Chilled water pumps are base mounted and supply chilled water to the two (2) main building air handling units.

Recommendation: Chiller replacement between 20-25 years.

There is a BAC water cooling tower which supplies condenser water to the water-cooled chiller in the sub-sub-basement. The cooling tower appears to be approximately four (4) years' old and is in good condition. The tower has chemical treatment system which is located in the Janitor's room on the top floor of the building. The system appears to be in good condition and maintained.

Recommendation: Tower replacement between 12-15 years.

Condenser water pumps are located in the sub-sub-basement near the chiller and appear to be in good condition.

Recommendation: Condenser pumps replacement 7-10 years.

Air Handling System:

The building is air conditioned and ventilated by two (2) main air handling units located on the basement mezzanine. The units are Carrier air handling units which appear to have been installed around 1988. The units are about thirty (30) years old and are approaching their life expectancy. The overall condition of the units are good and, with proper maintenance, the units will operate well before any major overhaul would be required.

Recommendation: Rebuild of AHU's between 10-15 years.

The AHU's supply main air risers are at the east side of the building behind the elevators and a riser in the north-east corner of the building. Supply ducts take-off at each floor and supply variable air volume boxes serving spaces on each floor.

Recommendation: Ductwork replacement 25 years.

Space Air Conditioning:

There are variable air volume (VAV) boxes throughout the floors. VAV boxes are single duct boxes with space thermostats which appear to be pneumatic controls. Several boxes have electric coils serving some areas. Perimeter of the building has built-in hot water heaters under the windows.

Recommendation: VAV boxes should be replaced between 5-10 years as the controls are pneumatic and should transition to electric/DDC controls.

The top floor assembly room (Room 516) is served by two (2) Trane rooftop units. The units were installed in 2002 and are sixteen (16) years old and are approaching their life expectancy. The units appear to be in good condition and well maintained. With good maintenance, the units should have several years left before they need replacing.

Recommendation: RTU's should be replaced within 5 years.

Telecommunications/Electric Rooms:

There are two (2) Mitsubishi split heat pumps which serve the Tele Data Rooms. The condenser portion of the units are located on the roof near the elevator and the indoor fan units are located in the spaces they serve. The units are fairly new and in good condition.

Recommendation: Heat pumps should be replaced 10-15 years.

Electrical Assessment

Normal Distribution System:

The electric service is derived from two (2) utility company (NGRID) network transformers housed in a dedicated vault at the basement level. A 2000A, 480Y/277V, three phase main switchboard is fed via 2000A bus duct from the network transformer. The switchboard is manufactured by Westinghouse Pow-R-Line series and was installed in 1988. The switchboard is in good condition and appears to have adequate spare capacity for future expansion. It was noted that the egress door from the Main Electric Room was not equipped with panic hardware as required per 2017 NEC Article 110.26(C)(3).

Power is distributed from the main switchboard to centrally located electric closets on each floor. Branch panelboards rated at 480Y/277V provide power to lighting and large mechanical loads. Dry-type transformers and panelboards rated at 208Y/120V provide power to receptacle and general power loads. The branch distribution equipment is manufactured by Westinghouse and is in good condition. The panelboards appear to have adequate spare breaker capacity for future expansion.

A motor control center manufactured by Westinghouse series 2100 distributes power to miscellaneous mechanical loads within the Boiler Room. It was noted that check metering was provided to monitor AHU-1 and AHU-2. It is assumed that the metering was installed when the building was occupied by Paul Revere Insurance Company and is no longer active.

Recommendation: Provide infrared testing/maintenance on main switchboard. Remove check metering system.

Emergency Distribution System:

The emergency service is derived from a diesel-fired standby generator rated at 125kW/156.25kVA with remote double walled one hundred fifty (150) gallon fuel tank. The generator is manufactured by Kohler and is housed in a dedicated room at the basement level. The testing/log book indicates that regular exercising and maintenance is being performed. A single automatic transfer switch manufactured by Asco feeds a 480Y/277V emergency panelboard that distributes power to centrally located emergency electric closets on each floor. Emergency power is provided to optional standby (NEC Article 702) loads only.

The following is a summary of the standby loads powered from the emergency distribution system:

- Two (2) passenger elevators and one (1) freight elevator, including related machine room equipment.
- Freeze protection – boilers, pumps and stairwell cabinet unit heaters.
- BAS system.
- Handicap assist door openers.
- Telecom head end equipment.
- Corridor receptacles.
- Fire alarm control panel (redundant emergency power source to batteries).

Recommendation: Generator should be replaced within 5-10 years based on industry standard life expectancy.

The lighting system throughout the building consists of fluorescent fixtures with LED wallpacks on the exterior at the egress doors. HID flood lights

are mounted on the roof perimeter. In general, the foot-candle levels throughout the building appear to be adequate. The common areas (corridors, public restrooms) and open office spaces are controlled via a central lighting control system manufactured by GE. Master control stations have been provided in corridors and open office areas. Occupancy sensor control was installed during the 2014 renovations for the enclosed offices, conference rooms and support areas. It was noted that daylight harvesting and light reduction as required by 2015 IECC has not been provided. Future renovations could trigger compliance with this code as required by 2015 IECC per 780 CMR Massachusetts State Building Code.

Egress lighting is provided in corridors via emergency battery units. It is assumed that the remaining spaces (open offices, public restrooms, etc.) are equipped with emergency battery ballast based on the DCF –DTA renovation project drawings dated 03/10/2014 to achieve the required emergency lighting levels along the egress path. Further evaluation is needed.

Recommendation: Replace the lighting system with LED and upgrade controls system to meet current IECC requirements.

The Fire Alarm System for the building appears adequate and in compliance with current code. It does not require any major upgrades or replacements at this time for its current use. The fire alarm system should be replaced and designed to support any major renovations.

Recommendation: Replace the system with emergency voice evacuation notification due to the change in use to Group E.

The Telecom System telephone service entrance equipment provided by Verizon is located in the Main Electric Room at the basement level. The MDF room is located on the second floor. Distribution racks have been provided in the centrally located electric rooms on each level. Category 5e cabling has been provided to the devices with Category 6 patch cords.

Recommendation: Expand the existing system to meet space/programming requirements. No significant upgrades are anticipated.

This building is not equipped with a lightning protection system.

Plumbing Assessment

Building plumbing systems consist of stacked toilet rooms for men and women, adjacent janitors' rooms and drinking fountains.

Domestic hot water consists of one 82-gallon capacity heater installed in 2010 and point of use electric domestic hot water at various sink/coffee stations.

Recommendation: New loading on the heater should be evaluated with major renovations to ensure capacity matches demand.

Internal roof drainage consists of integral roof drains with strainers.

Recommendation: Maintain roof drainage to be clear and free of debris and replace when the roof replacement is done.

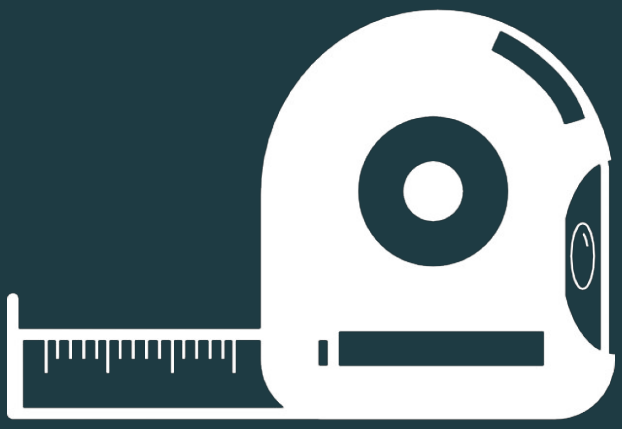
Plumbing systems, fixtures and equipment generally appear to be in good condition.

Fire Protection Assessment

The building appears to be a fully automated sprinklered building. Sprinkler main and branch distribution piping provides a complete automatic fire suppression system for the Building. System logs indicate that the system is regularly tested and maintained and is in very good condition, confirmed by presence of up-to-date inspection tags on each system valve.

Recommendation: Replace according to a 20-year plan along with regular inspection and maintenance. With major renovations planned, it should be understood that the existing fire protection system should be fully designed to accommodate new space configurations and uses.

Refer to NV5 SEVEN HILLS CHARTER SCHOOL EXISTING CONDITIONS REPORT – DRAFT dated JULY 11, 2019 in the Supporting Reports (part IV) of this report.



Methodology

This assessment includes documentation of building and site components at 255 Great Road Littleton, Massachusetts. The resulting analysis is a distillation of broad-range and detailed observations made by a team of consultants from architectural, civil, mechanical, electrical, plumbing, fire protection and structural disciplines. The primary objective of the assessment was to identify and observe systems, assemblies, and/or components of the facility and adjacent parking lot and to provide an analysis of the existing conditions as well as additional short-term recommendations for deficient items that may impact or influence the purchase or negotiations of this property. All observations and recommendations made by the team were the result of existing document review, interviews, and field surveys, checklists and drone photography.

The majority of information was collected via the investigation (walkthrough) process in which each team member visually observed the facility pertinent to their specific trade and expertise. Deficiencies that were visible and readily accessible were collected, noted, and organized by LLB Architects in the form of this consolidated report. Significant deficiencies are identified, refer to later section this report. Building components were photographed at interior and exterior locations, highlighting building envelope, roofing, structural systems (where readily accessible), representative interiors, and any unique or unusual spaces.

LLB also deployed our drone with a camera on this project which permitted us to more closely observe and evaluate conditions of the existing façade and roof area that would have otherwise been difficult and costly to see without the use of a lift. The drone was also able to capture clear overhead images of the parking lot to support the civil engineer in their efforts.

In an effort to collect and synthesize assessment information efficiently, LLB Architects has developed a process to execute and process the work. All collected information is organized by discipline, and then by building component (i.e. roofing, masonry, etc.). This includes summarized descriptions supported by supplemental reports (refer to the Existing Conditions Survey, Part III, and Supporting Reports, Part IV, of this report).

Observation Scope

Site and Civil: A general assessment of the existing site conditions for the project site was conducted by a licensed civil engineer. Record documents aided in the assessment including utility records from the Town of Littleton Public Work and Parks Department, ALTA/NSPS Land Title Survey Plans, Geographic Information System (GIS) data, and existing record plans provided by the client.

Structural Frame and Building Envelope: Visual identification of primary type of structure (steel/ wood frame, etc.), substructure including foundation walls, slab-on-grade, basement enclosure, superstructure including floor and roof framing (where readily accessible), building envelope including facades, curtain wall systems, glazing systems, exterior sealants, balconies, porches and other architectural features of importance or noted as deficient. Observations of the building's exterior are generally viewed from the ground and not by special conveying, unless alternative vantage points from balconies or adjacent buildings were available. Analysis from a licensed structural engineer was conducted and those findings are included in this report.

Roofing: Identification of the material of the exposed membrane/material. Observations were made to note any deficiencies in drainage, damage to the membrane system, and signs of potential leaks occurring on the interior ceiling surfaces. Roofing was accessed directly wherever possible, with the exception of the elevator penthouse roofing.

Interior Elements: Visual inspection of typical occupied spaces including lobbies, corridors, office spaces, restrooms, and special or unusual areas. Observations and deficiencies are noted for typical floor, wall, and ceiling finishes. Analyses of furnishings, fixtures, equipment, space utilization, space suitability, and user comfort issues were not conducted as a part of this report. It is understood that a major renovation would occur to convert the use to and Assembly Facility, and therefore most interior finishes would be removed.

Plumbing: Identification of the sanitary, storm, and supply piping material, fixtures, domestic hot water, and other special fixtures. Deficiencies are noted for any distribution and fixtures which are damaged or beyond apparent useful life.

Heating, Venting, and Cooling: Generation and distribution system, observed for components and assemblies past useful life or damaged. Any equipment that is shutdown or not operational is observed as an opinion of its condition or deficiency.

Electrical: Identification and observation of the service provided, size, visual of the distribution system including panels, transformers, meters, emergency generation, and exit signs.

Fire Protection: Identification and observation of fire protection systems including sprinklers, standpipes, fire alarms, panels, smoke detectors, and other equipment.

Life Safety: Visual identification related to building egress and their relationship to apparent conformance with original design intent. Application of fire protection systems including sprinklers, standpipes, fire alarms, panels, smoke detectors, and other equipment.

Exclusions

The following items have been excluded from the scope of this study:

- Utility infrastructure including but not limited to filtration, transformers, telecommunications and subsurface storm/sewer, fiber optics.
- Structural analysis (loads, calculations, etc.)
- Roof core testing, or Infrared Scanning
- Hazardous materials
- Energy Modelling

Additional Study and Monitoring Costs

Some observations suggested remedies that require further research, testing, exploratory work, design, engineering, or a combination thereof, all of which are outside the scope of this assessment.

In those cases, the observation was noted as an item to study or monitor.

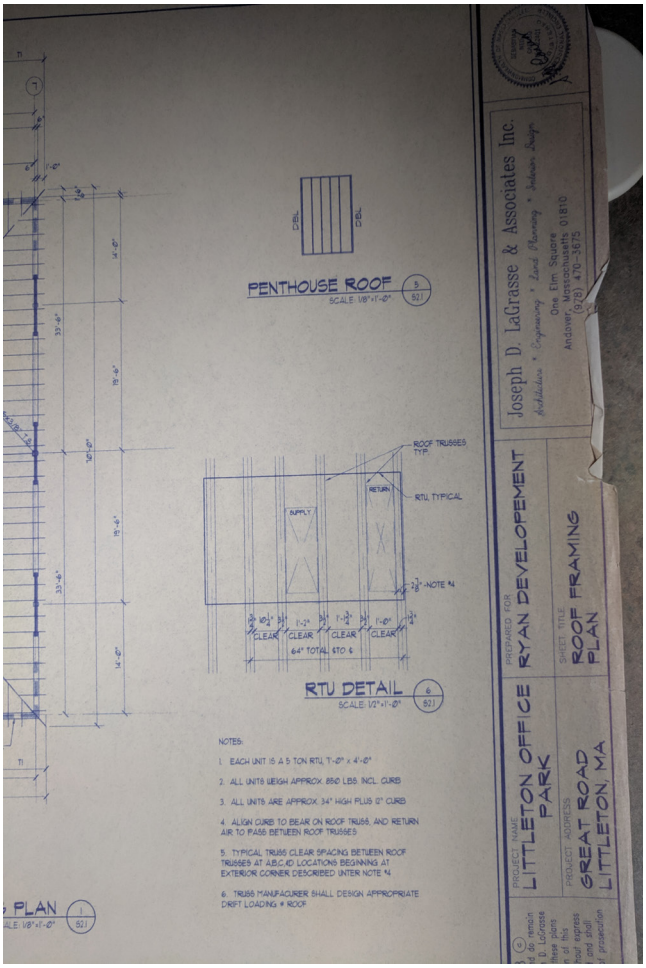
Opinions of remedies and costs should only be construed as preliminary, order-of-magnitude budgets. Actual costs will most likely vary from the consultant's opinions on matters such as type and design of suggested remedy, quality of materials and installation, manufacturer and type of equipment or system selected, field conditions, phasing of the work, project delivery method, and market conditions.

Field survey processes

Walk-through surveys were conducted for the collection of facilities and features at the 255 Great Road property and building.

The purpose of each field survey was to visually observe the facility to gather life cycle and short-term deficiency information that were visible and readily accessible through non-destructive testing.

The facility was photographed from the interior, exterior, and above the roof highlighting components, representative conditions, and any unique or unusual areas of interest.



Document review and interview processes

The purpose of including document review and interviews was to supplement the field survey and to assist the team's understanding of the facility and any pre-existing deficiencies or ongoing maintenance efforts.

A variety of existing documents, such as plans and reports, were obtained in the discovery stage of the project. Information of primary interest to the assessment included records indicating the age of building systems and components, studies, historical data, as-built conditions, and quantitative data.

Interviews with property managers were conducted before and during the field survey to aid in information collection, clarification on an observation, or to obtain access to areas not readily available to general building occupants.

Building Code Analysis
Littleton Office Building
Littleton, Massachusetts

General Building Limitations as per requirements of the Massachusetts State Building Code

1. Use Group B as per Building Code Section 304.2

2. Height and area limitations of building (Table 503):
   For type 5B unprotected construction
   Height Limitations: 2 Stories or 30 feet
   Area Limitations: Maximum 7,200 Sq. Ft.

- Under section 506.3 an area increase is allowed with an automatic sprinkler system, 200% for 1 and 2 story buildings.

  Allowable Building Square Footage per floor:
  7,200 + 200% increase = 21,600 sq. ft. per floor

- By design the Building height is 22'-6" and the square footage per floor is 10,370 ✓
  The area increase allows the design to be under construction type 5B. ✓

3. Fire resistance ratings of structural elements
   a) Exterior walls - no fire rating necessary
   b) Fire walls & party walls - none present within the building
   c) Fire enclsures of exits - one hour required under 1014.11
   d) Fire separation for shafts and elevator hoistway - one hour required
   e) Smoke partitions between tenant spaces - none required
   f) Smoke barriers - none required
   g) Interior walls - none required
   h) Floor & roof construction - none required

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Section of the code analysis from the original 1998 project. We will use this to compare to current codes as the project develops.

II . Existing Code Analysis

View of fire rated label on door and frame into electrical room.

Building Code Summary

Existing Building

The existing structure at 255 Great Road is currently determined to be a type “B” Business use inclusive of storage use as incidental use over 100 square feet. The construction consists of original concrete foundation and slab on grade with steel structural columns and beams, with engineered wood floor and roof trusses, with wood and masonry cladding. For further description of the existing building structure, please refer to the Preliminary Report completed by Room & Guaricino (refer to the Supporting Reports, Part IV, of this report) This structural system classifies as Type VB, requiring the fire resistance ratings highlighted in the chart below:

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame[f] (see Section 202)	3[a]	2[a]	1	0	1	0	HT	1	0
Bearing walls Exterior[e, f] Interior	3 3[a]	2 2[a]	1 1	0 0	2 1	2 0	2 1/HT	1 1	0 0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[d]	0	0	0	0	0	0	See Section 602.4.6	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	$1^{1}/_{2}$[b]	1[b,c]	1[b,c]	0[c]	1[b,c]	0	HT	1[b,c]	0

For SI: 1 foot = 304.8 mm.

a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

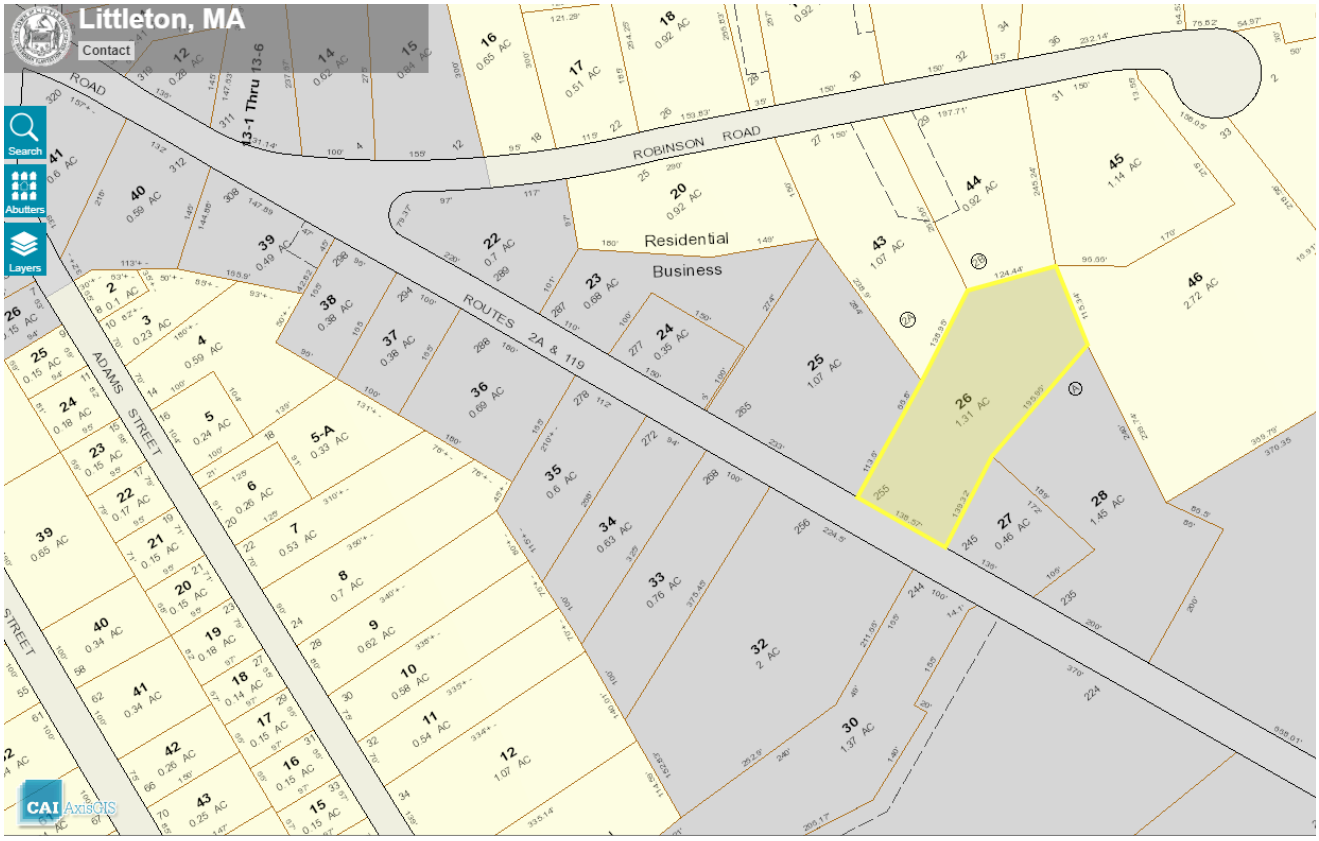
c. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.

d. Not less than the fire-resistance rating required by other sections of this code.

e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

f. Not less than the fire-resistance rating as referenced in Section 704.10.

Through on site observation and review of the construction documentation from the most recent renovations and additions, this team has determined that these fire ratings are met. These Code regulations would have to be evaulated against any proposed program uses.



Town of Littleton, MA Zoning District map as amended. 255 Great Road is within the “B” Business zone.

Town of Littleton, MA / Division 1: Town Meeting Enactments / Part II: General Legislation / Zoning
Article V Use Regulations

§ 173-26 Use regulations schedule.

Uses	Districts				
	R	VC	B	IA	IB
Commercial power generation	N	N	N	N	N
Self-storage facilities	N	N	N	P	P
INSTITUTIONAL USES					
School					
Exempt by statute (MGL C. 40, § 3)	Y	Y	Y	Y	Y
Other	N	Y	Y	Y	Y
Church or other religious use	Y	Y	Y	Y	Y
Fraternal, charitable and nonprofit organization	A	Y	Y	Y	Y
Library, museum, hospital	Y	Y	Y	Y	Y
Conversion of municipal building[6]	P	P	P	P	P
Municipal use not elsewhere more specifically cited	Y	Y	Y	Y	Y
RECREATIONAL USES					

Town of Littleton, MA Zoning Ordinance, Use Regulation Schedule, as amended. Municipal Use Permitted in “B” Business District.

Zoning

Existing Zoning Overview

255 Great Road is within the Business District (B). There are minimal use restrictions in this zone, allowing this building to be renovated for any number of uses.

The adjacent surface parking lot is located on this property, and is also in the B: Business District. The parking Regulations below identify requirements for parking based on building use. These regulations would have to be evaulated against any proposed program uses.

§ 173-32. Parking requirements.

A. General. Adequate off-street parking must be provided to service all parking demand created by new construction, whether through new structures or additions to old ones, and by change of use of existing structures. Such parking shall be either on the same premises as the activity it services or within 300 feet on a separate parcel, which may be jointly used with other premises for this purpose, provided that the continued joint use of such parcel is ensured through an agreement recorded in the Registry of Deeds.

B. Schedule of parking area requirements. In applying for a building permit or certificate of use and occupancy, the applicant must demonstrate that the following minimums will be met, unless, in performing site plan review (see § **173-16**), the Planning Board determines that special circumstances render a lesser provision adequate for all parking needs. If such lesser provision is allowed, the Planning Board may impose such conditions as it deems necessary. Applicant is encouraged to consider shared parking as a possible means of reducing total parking area, subject to Planning Board approval.
[Amended 5-8-1995 ATM, Art. 32; 5-4-1998 ATM, Art. 34; 5-8-2000 ATM, Art. 27; 11-8-2005 STM, Art. 5]

(1) Dwellings: two spaces per dwelling unit.

(2) Motels, hotels, lodging houses: one space per guest unit, plus one space per employee.

(3) Retail stores: one space per 150 square feet of leasable floor area.

(4) Offices: one space per 250 square feet of gross floor area, or, if the Planning Board determines that the occupancy can adequately be predicted and controlled, one space per 1.25 employees on the largest shift.

(5) Industrial, wholesale: one space per 1.25 employees on the largest shift.

(6) Restaurants: one space per four seats, plus one space per employee on the larger shift.

(7) Places of assembly: one space per four seats.

(8) Hospitals: three spaces per bed.

(9) Nursing homes: one space per four beds.

(10) Bowling alleys: four spaces per lane.

(11) All others: one space per 250 square feet of gross leasable area.

(12) Motor vehicle service stations: one space per pump plus one space per employee, plus three spaces per service bay.

(13) Motor vehicle service station with retail store: one space per pump, plus one space per employee, plus three spaces per service bay, plus one space per 50 square feet of gross floor area.

(14) Self-storage facilities: two spaces per 10,000 square feet of gross floor area.

Town of Littleton, MA Zoning Ordinance, Parking Requirements, as amended.

View of existing elevator at second floor.

Accessibility

Existing Exterior Accessibility Conditions

This property consists of one parcel, addressed as 255 Great Road, and consist of a surface parking lot with +/- 72 parking spaces. There are 2 parking spaces with shared center isle identified via painted driveway markings and pole mounted signage.

There are three means of egress either at grade or with exterior landings. These existing egress doors are all a minimum of 34" clear. One is found at the Southeast corner of the first floor at grade level, and exits onto a concrete landing. The second at grade exit is at the Northwest corner of the first floor, and has direct access from the exist stair and adajcent suite. The Main entry, at the West side of the first floor and currently the main building entrance, has access and is ADA complaint.

The existing 255 Great Road building is constructed on a relativly flat site near the main entrance. At the northwest corner, there is a slight grade change from the lot over the septic tanks down to main entrance. This slope may present some accessibility concerns and should be further evaluated.

Existing Interior Accessibility Conditions

The existing vertical circulation consists of two internal stairwells, one along the north side of the building and one opposite of the one passenger elevator together. This core contains other vertical building services such as HVAC shafts, janitor closets and electrical rooms at the central portion of the building. The two stairwells serve as egress for the building and each measures 44" wide.

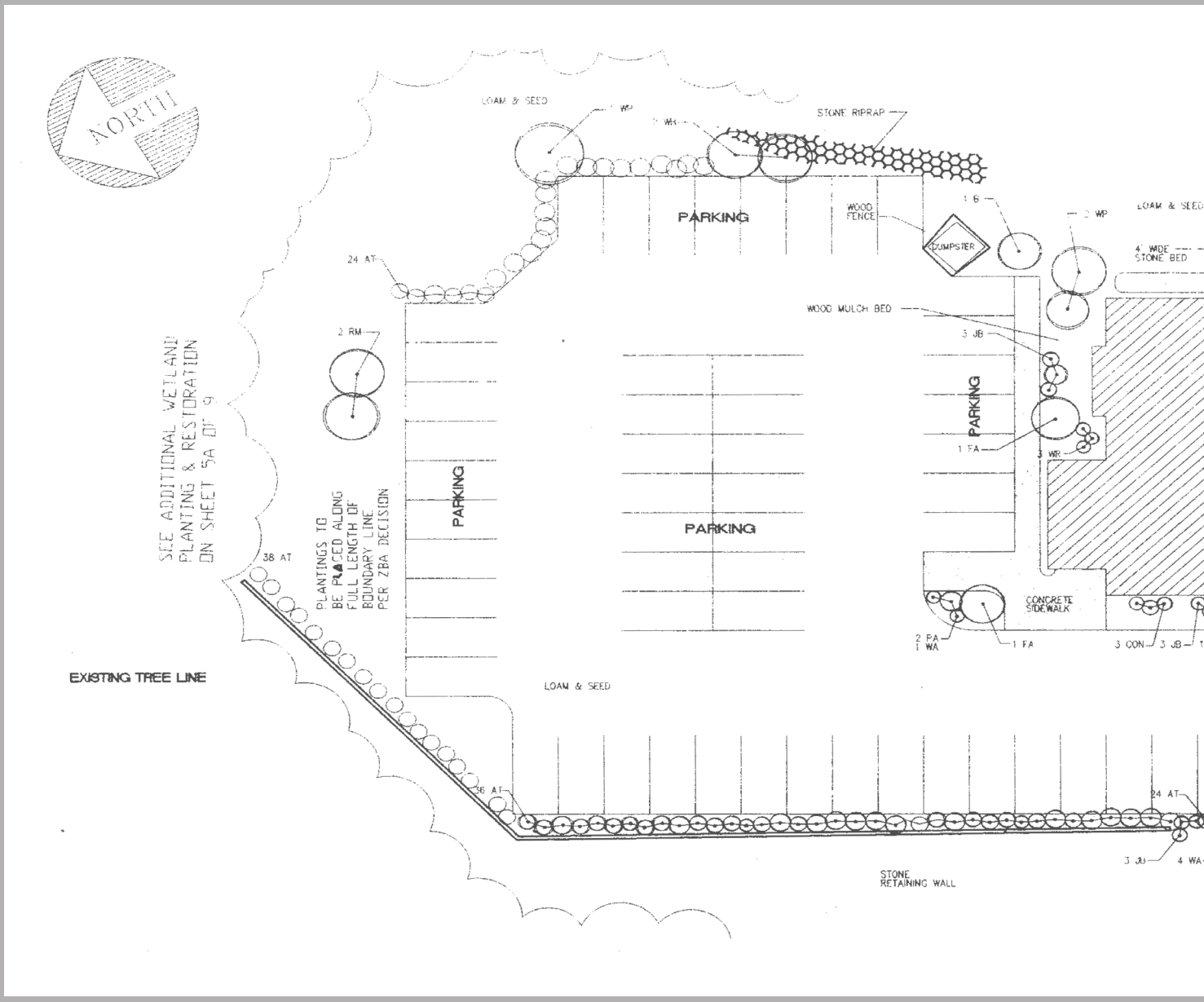
The stairs themselves appear to be ADA / 521 CMR compliant in their existing configuration.

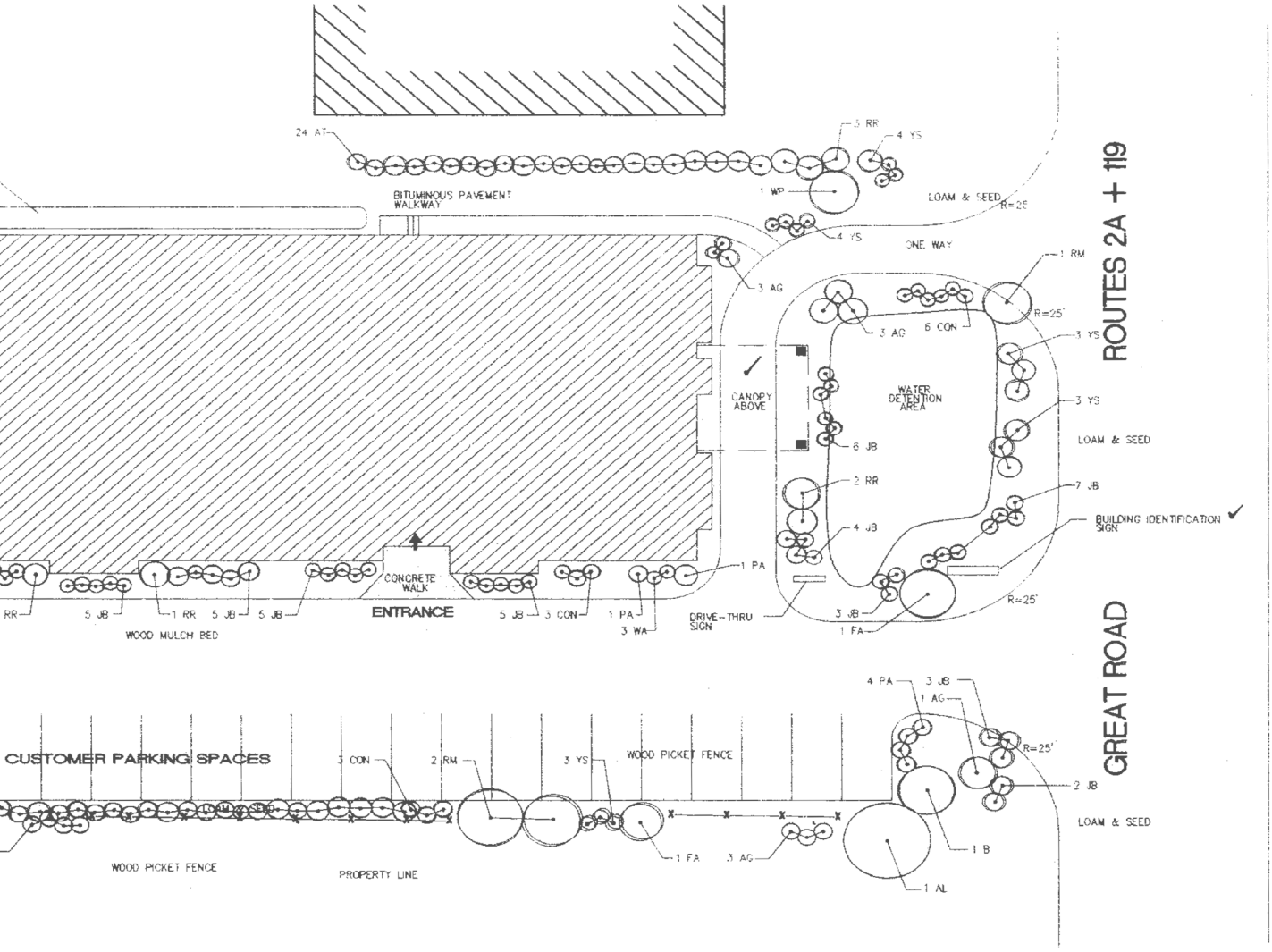
There are two multi-occupant restrooms on each floor. Each restroom has two lavatories which are installed at an ADA compliant height. The Women's restroom has one standard toilet stall and one ADA accessible stall. The Men's restroom has one urinal, one standard toilet stall, and one ADA accessible stall. These facilities appear to be ADA / 521 CMR compliant in their existing configuration.

View of sloped parking lot at northwest corner.

View of ADA stall at typical restroom.

Overall Site plan for reference.




24 AT
5 RR
4 YS
BITUMINOUS PAVEMENT WALKWAY
1 WP
LOAM & SEED
R=25'
4 YS
ONE WAY
3 AG
1 RM
R=25'
3 AG
6 CON
3 YS
CANOPY ABOVE
WATER DETENTION AREA
3 YS
6 JB
LOAM & SEED
2 RR
7 JB
4 JB
BUILDING IDENTIFICATION SIGN
1 PA
CONCRETE WALK
ENTRANCE
DRIVE-THRU SIGN
3 JB
1 FA
R=25'
RR
5 JB
1 RR
5 JB
5 JB
5 JB
3 CON
1 PA
3 WA
WOOD MULCH BED
ROUTES 2A + 119
GREAT ROAD
4 PA
3 JB
1 AG
R=25'
2 JB
LOAM & SEED
CUSTOMER PARKING SPACES
3 CON
2 RM
3 YS
WOOD PICKET FENCE
1 B
1 FA
3 AG
1 AL
WOOD PICKET FENCE
PROPERTY LINE

View of existing guardrail at interior egress stair, installed at code required height.

III. Existing Conditions Survey

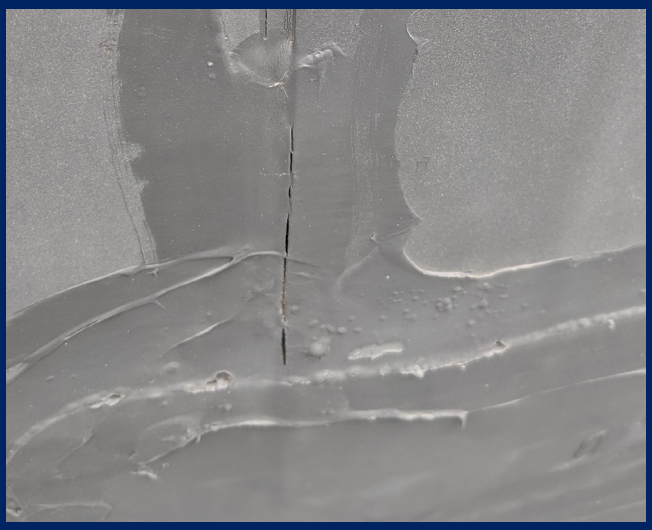
Ponding on roofing at roof drain.

Evidence of ponding of water near mechanical unit. Gap in base flashing, chalk arrow (placed by others) points toward gap.

Evidence of water ponding, signs of aged flashings can be seen where membranes seperate, or “pull back”.

Organic growth around base flashing and gap in flashing.

Gap in base flashing.



Seperation of what appears to be an already repaired joint (via applied darker coating) occurring in mansard wall.

Roofing - EPDM

Recommendation:

Replace

Timeline:

0-5 Years

Roofing system is reaching the end of its life expectancy; consider replacement during building renovations.

Drone view of roofs and mechanical equipment

Existing System Overview

The existing roofing system, installed during the 1998 build, consists of an .060 elastomeric roofing membrane adhered to 1" Rigid Insulation which has been mechanically fastened over 3/4" plywood deck and adhered to mansard roof structure. Walkway pads are not installed. Edge conditions consist of a copper metal coping with termination bars. Elevator shaft is clad with exposed CMU and roofed with EPDM membrane and metal fascia and wall base flashing. The asphalt shingles and copper roofs will be discussed in the next section.

Observed Conditions

This roofing system is 31 years old and is reaching the end of its useful life expectancy. Several areas of the roofing insulation were observed underfoot to be soft with separation from the roofing membrane indicating likely moisture infiltration.

Based on observed dried debirs, it appears that the insulation has poor slope to the roof drains, or the roof drains need cleaning. Standing water (ponding) can deteriorate the roof membrane. The NRCA Roofing Manual: Membrane Roofing Systems states: "*The criterion for judging proper slope for drainage is that there be no ponding water on the roof 48 hours after a rain during conditions conductive to drying*."

There are no walkway pavers around the equipment. Walkway pads can protect the roof membrane from damage during mainteance. It is our suggestion that new walkway pads be included in a roof replacement porject.

The membrane flashings are showing signs of "pulling back" and shrinking. There are observed openings in some of the joints which if not addressed, might lead to leaks.

The elevator shaft is exposed masonry, joints and face cmu appear to be in sound condition. The sealants at through wall flashings are showing signs of deterioration.

Example transisition conditions at interior and exterior ridges, note rolled white trim at intersection of gutter and shingle.

Example aspahlt shingle roof, note rolled white trim at intersection of gutter and shingle edge, west facade.

Typical view from upper roof looking down the roof.

Fallen piece of asphalt fiberglass shingle on northeast.

Roofing - Asphalt Shingle

Recommendation:

Reuse/Maintain

Timeline:

5-10 Years

Aluminum edge trim can be seen "rolling up/ out" at the intersection of the shingle and gutter, but most likely can be repaired; consider repairs during initial building renovations.

Existing System Overview

In addition to the EPDM rubber membrane which exists on the upper roof, there also exists asphalt fiberglass shingles and standing seam copper roofing, including copper and aluminum gutters and downspouts.

Observed Conditions

The asphalt fiberglass shingles identifed in the construction set of drawings are 25 year Fiberglass Shingles, manufacturer unkown, over 15# roofing felt over 3/4" plywood roof sheathing.

The shingles for the most part appear to ne in generally good shope, with little observed granular loss. We did observe a 12"x12" piece of single on the ground near the north east corner of the building, but the drone photographs were not able to identify the loss location.

The ashpalt shingle roof, being installed in 1998 is roughly 21 years old. We anticipate that this roof based on the observations that we made has in our opinion another 10-15 years life expectancy before replacement is required.

We suggest implimenting an inspection plan at the end of the fall season to clean leaves, preiodically during the winter after severe storms to identify ice build up and damage in the gutters, and at the end of the winter season.

There is some heat trace installed at certain locations, we presume to aid in the melt of ice occurring at the roof perimeter. Heat trace does have benefits in some instances, but can excaserbate the phenominom known as "ice-daming". This condition should be observed in the winter monthes after a snow event to see the effects of the heat trace.

Polycarbonate skylight unit.

Example standing seam copper roof, note abandonded rusted steel frame from removed signage, west facade.

Solder joint at copper gutter showing signs of repair and age.

Failed copper cleats, observed from second floor window.

Roofing - Standing Seam

Recommendation:

Reuse/Maintain

Timeline:

20+ Years

Copper gutter solder joints are showing signs of age but can be reused; consider repairs during initial building renovations.

Existing System Overview

In addition to the EPDM rubber membrane which exists on the upper roof, there also exists five standing seam copper roofs, including copper gutters and downspouts only over the building entrance.

Observed Conditions

The existing standing seam copper roofs occur on the north (1), south (2) and west (2) facades. Generally the roofs appear to be in good condition with no observed leaking. There a several locations where 12" copper cleats have turned upward, presumably from thermal expansion of the copper pans, when inadequate thermal expansion is provided for in the installation, the stresses of thermal expansion are driven from the pans into the cleats. Plan for near future repair of these cleats.

We observed solder on the underside of the copper gutter near the entrance, at the northwest corner. this is most likely in response to a failed joint due to repeated thermal cycles. This shoud be inspected at the beginning of the fall season and agian after winter season to confirm joint has not failed.

Copper roofs, if installed correctly can last many decades.

Evidence of “frosting” in failed insulated glass unit most likely due to de-hermetization of the IGU and excess moisture condensating.

Evidence of sealant failure at sash head.

Evidence of sealant failure, typical.

Window sash sealant failure .

IGU at lower sash broken, should be replaced.

Windows

Recommendation:

Replace

Timeline:

0-2 Years

Windows are showing signs of age but can remain in-use; consider replacement during building renovations.

Existing System Overview

All existing window units appear to have been installed during the 1998 build. They appear to be aluminum clad wood double hung windows. Windows consist of green painted aluminum (exterior) with insulated glazing units and painted wood (interior). Aluminum grilles are placed between two panes of glass, in a 12 over 12 format.

Observed Conditions

Numerous window sash sealants show evidence of failure due to sagging/seeping sealant between the Insulated Glass Unit (IGU) and the sash frame. This is a case of severe sealant squeeze out. This sealant is butyl sealant that most window manufactures use as a sealant between glass and frame. Excessive heat can cause it to ooze out more. This appears to be an extreme case. It can usually be cleaned up and life can go on, but since there is so much coming out/visble, there may not be much left keeping the window/glass sealed.

Northeast corner first floor, we observed an IGU that is experiencing water infiltration and damage. In the same area we observed a cracked IGU in a lowesr sash.

The exterior Kynar painted finish is showing signs of fading and chalking.

The glazing seals have reached their life expectancy and have begun to loosen and fall. Exterior sealants do not appear to be installed, as should have been anticipated in similar installations.

All glazing gaskets and sealants should be removed and replaced during the initial building renovations. Any rust at window headers should be cleaned and the headers resealed to prevent further oxidization. Damaged interior finishes should be removed and replaced. With these repairs and regular maintenance, the curtain wall and window units should last another 15-20 years until they have reached their end of life and will need to be replaced.

Visible mortar missing at window sill, and poor toothing of joints on vertical surface joints, lack of weeps low on the wall.

Various points of missing mortar at the exterior sills.

Evidence of missing mortar and lack of sealant, this is a source of potential water infilltration. .

Evidence of missing mortar and lack of sealant.

Evidence of missing mortar at window jamb. Also note lack of sealant at window frame to brick.

Poorly toothed mortar, seperation can be seen at head joint.

Exterior Masonry

Recommendation:

Repair

Timeline:

Immediate

Some mortar joints are failing or missing; roughly 5% of the exterior facade will require repointing during initial building renovations.

It appears as though the building sustained vehicular impact, you can see crack lines in the mortar.

Closeup at damaged brick at southeast corner.

Existing System Overview

The exterior cladding system for this building is a combination of masonry veneer and painted wood clapboard and trim. Original masonry would have been installed during the 1998 build. Subsequent sections appear to have been repointed during the years since this original work. Infill occurred where the bank ATM machine was removed on the south facade.

Observed Conditions

The existing masonry occurs on the south (2) and west (2) facades. Generally the original and infill bricks appear to be in good condition. Some mortar joints in these sections are failing or missing and will need to be repointed to prevent water infiltration and damage.

Most significantly, there portions of missing sealant and mortar under the existing window sills on the South facade. These sections present significant potential for water infiltration and subsequent damage to the building and interior walls and insulation. Further investigation beyond the scope of this report will be required to assess the current situation and confirm the extent of repairs required in these areas, both externally and internally.

At a minimum, we suggest adding sealant to the open joints to ensure a weather tight building envelope in the interim.

Evidence of damaged & deteriorated paint finish.

Visible horizontal crack in clapboard siding.

Evidence of damaged & deteriorated paint finish.

Evidence of missing clapboard section.

Evidence of damaged paint finish and abandonded throughwall penetrations.

Evidence of missing and damaged clapboard sections, and wood trim.

Exterior Clapboard Siding

Recommendation:

Repair

Timeline:

2-5 Years

Some clapboard are failing or missing; roughly 5% of the exterior facade will require repair during initial building renovations.

Visible horizontal crack in clapboard siding and trom at pipe penetration.

Closeup at east facade, note the bulging section of clapboards between the first 2 doors, rows 4 anf 5 above the broken light.

Existing System Overview

The exterior cladding system for this building is a combination of masonry veneer and painted wood clapboard and trim. Original wood clapboard would have been installed during the 1998 build. Subsequent sections appear to have been repointed during the years since this original work.

Observed Conditions

Generally the original clapboard appears to be in good condition. Some clapboards are damaged, either due to aging and natural wood joint movement, and some due to impact or other exteranl forces.

Most significantly, there is one area on the north end, shown in the photos of missing and damaged clapboard. We can see the exposed top edge of the lowest clapboard. This damage may have occurred from an impact into the wall, perhaps from lawncare equipment.

This area presents significant potential for water infiltration and subsequent damage to the building and interior walls and insulation. Further investigation beyond the scope of this report will be required to assess the current situation and confirm the extent of repairs required in these areas, both externally and internally.

At a minimum, we suggest repairing the open joints to ensure a weather tight building envelope in the interim.

Observed horizontal wall trim board seperated from blocking.

Closeup at horizontal trim board seperation, exposing wall back up.

Observed vertical wall trim board.

Closeup at vertical trim board seperation, exposing wall back up. We can note that there is no evidence of a sealant joint.

Observed horizontal wall trim board seperated from blocking.

Closeup at horizontal trim board seperation, exposing wall back up.

Exterior Trim

Recommendation:

Repair

Timeline:

0-2 Years

Some trim is failing and exposing the backup wall system to water infiltration. Other trim is damaged and should be replaced.

Closeup at damaged painted foam quions from woodpeckers at northeast corner.

Existing System Overview

The exterior trim is a combination of painted foam and painted wood trim. Original trim would have been installed during the 1998 build.

Observed Conditions

The existing painted trim occurs on all of the facades. Generally there is running trim at the wall base, window and door frames, roof eaves and projections and decorative applied quions at each exterior corner.

Most significantly, there are some trim boards that are failing or buckeling and will need to be repaired to prevent water infiltration and damage. These sections present significant potential for water infiltration and subsequent damage to the building and interior walls and insulation. Further investigation beyond the scope of this report will be required to assess the current situation, why it occurred and confirm the extent of repairs required in these areas, both externally and internally.

The quions, mostly on the north facade, have received damage from wood peckers according to the property manager. Fake owls have been installed to aid in detering the birds from further damage to the quions. We are not sure if these owls are successfully doing that. The property manager indicated that he has ordered replacements. If left as is, the voids could house insect nests.

Water infiltration at these quions does not seem practical as these quions appear to be installed over the exterior clapboard siding, and not installed in a traditional fashion, flush to the backup wall, where the clapboards would stop and butt into the quions edge.

Observed horizontal cracked eave trim at corner, appears to start at mid trim and travels horizontally at upper edge.

Observed horizontal cracked eave trim. Note, you can follow the crack from the upper edge, through the trim, to the bottom.

Closeup at vertical window trim board. Note sealant (or paint) failure at frame.

Closeup at vertical trim board between windows, note seperation of sealant (L), no evidence of a sealant joint (R).

Observed horizontal wall trim board seperated at corner.

Closeup at horizontal trim board end abutting quion. Note sealant joint has failed and is seperated.

Observed cracked eave trim. Note, you can follow the crack from the upper edge, through the trim, to the bottom. Also you can see the bowed vertical facscia creating a gap.

Closeup at opposite corner, stresses appear to have pushed out the corner causing seperation.

Closeup at top of window infill panel, note advanced weathering of unflashed horizontal edge (R), as well as lack of sill flashing.

Closeup at vertical trim board at window infill panel. Note seperation of a sealant joint at brick.

Observed horizontal wall trim board abutting quion. Note gap size (+/-3/8”), lack of sealant and debris and cobwebs.

Closeup at horizontal trim board, damaged and missing segments.

Evidence of damaged & deteriorated paint finish, and rotting (loss) of core material.

Evidence of damaged & deteriorated paint finish, and rotting (loss) of core material.

Evidence of damaged & deteriorated paint finish, and rotting core material.

Exterior doors on the east facade showing signs of rust on the sills.

Evidence of damaged and rusting sill.

Evidence of rusting exterior hollow metal door.

Exterior Doors

Recommendation:

Replace

Timeline:

0-2 Years

Exterior Doors on the east facade are in poor condition and should be replaced.

Existing System Overview

The exterior doors for this building are a combination of aluminum storefront with insulated glass and painted insulated steel doors. Original doors would have been installed during the 1998 build. There does not appear to have been any additional work done on the doors, other than possibly re-keying with the change of tenants.

Observed Conditions

The existing aluminum storefront with insulated glass occurs on the west facade. Generally the doors appear to be in good condition. Some white chaulking of the finish can be seen, this is typical of similar finishes of this age in this evnvironment. Salts and other ice prevention materials used near the entrances has shown to wear on the concrete foundtaion, as seen in the image below.

Most significantly, the three painted insulated steel doors on the East facade are deteriorating. These doors if not replaced, will continue to deteriorate and may present significant potential for water infiltration and subsequent damage to the building and interior walls and insulation.

At a minimum, we suggest replacing the exterior steel doors with more appropriate doors to ensure a weather tight building envelope.

Overall view of aluminum and glass door at northwest corner.

Closeup at of aluminum sidelight sill at main entrance.

Observed crack above elevator door head, second floor.

Observed crack above interior door head second floor.

Observed crack at interior wall above door, first floor north.

Observed crack at exterior wall below window, second floor east.

Observed crack at exterior wall below window, first floor east.

Observed crack at interior wall above door, first floor north.

Drywall Cracks

Recommendation:

Repair

Timeline:

0-2 Years

Various cracks were observed throughout the building on both exterior and interior walls.

Observed crack above window head, second floor east wall.

Observed crack below window sill, second floor east wall.

Overview

Whether drywall, plaster or concrete, walls are susceptible to cracks. Even walls in newly-built buildings are prone to cracks, which normally occur from settling. buildings are constantly settling as different construction materials expand and contract at different rates. Fluctuating humidity levels, soil movement and shallow foundations are typically responsible for settling, which may result in cracks in ceilings or walls. Generally a cracked wall is nothing to worry about, certain cracks indicate serious structural damage. Regularly inspect cracks above door frames and in walls for certain signs to determine whether the cracks require professional attention.

By analyzing the direction of the crack. Vertical and horizontal cracks in drywall walls typically indicate drying and shrinkage, which is normal after construction. Jagged cracks, stair-step cracks and 45-degree angle cracks generally signify structural movement or settling issues that are occasionally serious, but usually harmless.

Typically, wider cracks signify more serious issues than thinner cracks. Cracks less than 1/8-inch thick are considered stress cracks and generally are harmless, while cracks 1/4-inch wide and larger are often more serious.

Observed Conditions

We observed multiple locations where cracks occurred, most appeared to be along the east and west exterior walls, on the first and second floor.

There were several interior locations where cracks were observed above interior doors or windows.

We are not able to identify when these cracks occurred (ie: immedialy preceeding the finished construction, or many years after).

Most of the observed cracks appear to be less than 1/8” and therefore generally might be considered harmless, or superficial.

Closeup at bottom of window showing crack, second floor, east exterior wall

Closeup at bottom of window showing crack, second floor, east exterior wall.

Observed vertical crack in drywall at exterior wall, second floor northeast.

Observed vertical crack in drywall at exterior wall, second floor northeast, above and below window.

Closeup at bottom of window showing crack, second floor, east exterior wall.

Closeup at bottom of window showing crack, second floor, west exterior wall.

Closeup at top of window showing crack.

Closeup at top of window showing crack, second floor, west exterior wall.

Closeup of crack below window.

Closeup at bottom of window showing crack, second floor, west exterior wall.

Evidence of what appears to be frass, first floor Northeast corner.

Visible evidence of pest activity at East window sill, first floor.

Evidence of what appears to be frass, first floor East wall at joint in wall base.

Evidence of what appears to be frass, first floor East corner at wall base corner.

Evidence of what appears to be frass, first floor Southeast wall at joint in wall base.

Evidence of what appears to be frass, first floor South corner at wall base corner at ATM infill.

Pests

Recommendation:

Treat

Timeline:

0-2 Years

Implement pest control plan.

Visible flying insect nest at underside of roof eave.

Visible flying insect nest at underside of trim at main entrance.

Overview

Pest control is the regulation or management of a species defined as a pest, a member of the animal kingdom that impacts adversely on human activities. The human response depends on the importance of the damage done, and will range from tolerance, through deterrence and management, to attempts to completely eradicate the pest. Pest control measures may be performed as part of an integrated pest management strategy.

We are not aware if an existing pest control plan is in place with the current property manager. Pests, if left unattended can infest and create damage to a building or be a nuisance to occupants.

Observed Conditions

Testing for pests was not a part of this facility assessment however we did observe some conditions that were that presented themselves as potential pest damage. Generally we obsevered what appears to be frass, whether that was from termites or carpenter ants needs to further determined by an expert.

The term “frass” may refer to excavated wood shavings that carpenter ants, carpenter bees and other insects with similar wood-boring habits eject from their galleries during the tunneling process.

Drywood termites live inside wooden constructions, including structural timber, furniture and hardwood floors. Because they live inside the areas they feed on, they’re almost never seen outside the colony. But they do leave signs of their presence. Drywood termites push fecal pellets (frass) outside their tunnels and chambers.

Most significantly, there is one area along the east exterior wall, shown in the photos to the right of evidence of frass. We can see this frass occurring at the wall base, at joints.

On the exterior we observed flying insect nests, one near the main entrance and one on the northeast soffit.

We suggest having a proffesional pest control company evaluate the existing conditions and offer solutions.

View of existing exit door leading into the north exit stairwell.

IV . Supporting Reports

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Assessment Report

Littleton Town Hall and Senior Center
Littleton, MA

PREPARED FOR:
LLB Architects
161 Exchange Street
Pawtucket RI 02860

PREPARED BY:
Building Engineering Resources, Inc.
Krista Iacobucci, PE – Mechanical
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DATE:
November 5, 2019

General

The town of Littleton, Massachusetts has retained the services of this design team to evaluate the two buildings discussed in this report, and comment on the suitability of these facilities for use by the town as administration offices. The town hopes to be able to gain an understanding of the scope of repairs and modifications required to occupy these buildings and use them as intended.

MECHANICAL

Existing DCU Building

Heating and Cooling

This building is heated and cooled by a series of ten 10-ton Trane rooftop air handling units (RTUs) and a 3-ton Carrier split system. The Trane units are mechanically cooled using a direct expansion (DX) circuit and heated with a natural gas-fired furnace. The smaller Carrier unit is a heat pump, utilizing a DX circuit for both heating and cooling. There is a total of 103 nominal tons available. Each of the Trane RTU's serve a dedicated HVAC zone and are thermostatically controlled.

Ventilation

Ventilation is provided to the building through the various air handling systems. It is assumed that adequate outdoor air is provided, but this should be confirmed prior to occupation in order to assure adequate indoor air quality for the proposed program use.

Zoning

Each air handling system serves a separate HVAC zone and is thermostatically controlled. Currently, there is no capability to provide individual temperature control to each office or each group of offices. Each zone appears to be divided logically by similar load profiles.

Miscellaneous Heating and Cooling

Some areas throughout the building have required independent heating and/or cooling in order to best serve the proposed purposes. Vestibules, IT rooms, and mechanical rooms are served by smaller dedicated systems as required. IT rooms may need cooling year-round and have a dedicated split system, while utility spaces are equipped with a dedicated electric heating device.

Controls

Currently, there is a Trane Tracker system installed to monitor and control the Trane RTUs, but control points are minimal and there is no graphic interface. Currently, building facilities personnel use the Trane Tracker system to adjust setpoints.

Conclusion & Recommendation

It appears that the ten 10-ton Trane RTUs are nearing or have exceeded their expected life and are recommended to be replaced. The RTUs were functional at the time of the site visit, and may remain in operation while replacement should be planned for the near future. It is assumed that the existing duct mains are sized adequately and could remain. Replacement of branch ductwork would be recommended based on any architectural or programming modifications. An alternate for this building, based on future proposed interior layout, would be a one or two RTU's with a zone Variable Air Volume (VAV) distribution for more responsive temperature control and better energy savings. Any new ductwork shall be insulated to meet current energy codes and standards, and any existing duct insulation should be investigated and repaired accordingly.

A building automation system is recommended. This system should be open protocol and have the inherent capability of monitoring and adjusting the HVAC systems based on schedules, heating and cooling demands, and energy usage.

ELECTRICAL

Existing DCU Building

Building Electric Service

The building electric service is a 600 amp, 277/480 volt, 3 phase, 4 wire switchboard (Cutler Hammer) with four (4) electric service disconnect circuit breakers: 200 amp 3 pole 'First Floor Lighting Panel', 200 amp 3 pole 'Second floor Lighting Panel', 200 amp 3 pole 'Second Floor HVAC Panel' and 60 amp 3 pole 'Elevator'.

Electrical Distribution

The Main Electric Room has the following electrical distribution equipment: 600 amp, 277/480 volt, 3 phase, 4 wire switchboard (MP-1), 225 amp, 277/480 volt, 3 phase, 4 wire panel (Panel 'LP-1'), 75 KVA dry type transformer, 225 amp, 120/208 volt, 3 phase, 4 wire panel (Panel 'PP-1') and 125 amp, 120/208 volt, 3 phase, 4 wire panel (Panel 'PP-2'). The Second Floor Electric Room has the following electrical distribution equipment: 225 amp, 277/480 volt, 3 phase, 4 wire panel (Panel 'HVAC'), 225 amp, 277/480 volt, 3 phase, 4 wire panel (Panel 'LP-2'), 75 KVA dry type transformer, 225 amp, 120/208 volt, 3 phase, 4 wire panel (Panel 'LSI') and 125 amp, 120/208 volt, 3 phase, 4 wire panel (Panel 'Sub Panel')

Lighting

The building lighting consists of 2' by 4' recessed fluorescent lighting fixtures in offices and corridors. Strip fluorescent lighting fixtures in utility rooms and storage rooms.

Emergency Lighting

The building emergency lighting consists of emergency battery units with remote heads in corridors and stairwells. Emergency battery unit with two heads in restrooms. Exit signs are fluorescent with battery back-up.

Lighting Controls

The building lighting controls consist of ceiling occupancy sensors with wall switch overrides in corridors and conference rooms. Offices have wall mounted occupancy sensor switches.

Fire Alarm System

The building fire alarm system is a 14 zone conventional fire alarm control panel (Edwards System Technology EST) with manual pull stations at egress doors, smoke detectors, heat detectors, duct smoke detectors sprinkler tamper switches and sprinkler flow switches. Transmission of an alarm to the fire department is via a cellular dialer (StarLink Commercial Fire Alarm Communicator).

Materials

MC Cable is used for the lighting branch circuit wiring, receptacle branch circuit wiring concealed HVAC equipment branch circuit wiring and concealed plumbing equipment branch circuit wiring. Conduit and wire is used for exposed lighting branch circuit wiring, receptacle branch circuit wiring, HVAC equipment branch circuit wiring and plumbing equipment branch circuit wiring.

Conclusion & Recommendation

The electrical distribution equipment is in good condition and may be reused. The existing fluorescent lighting fixtures shall be replaced with LED lighting fixtures. The existing emergency lighting system shall be replaced with emergency inverters installed in the new LED lighting fixtures as required to provide the Code specified emergency lighting requirements. The existing conventional fire alarm system is old and new replacement parts are being phased out. The existing fire alarm system shall be replaced with a new addressable fire alarm system. The existing fire alarm cellular dialer may be reused.

PLUMBING

Existing DCU Building

Domestic Water Service:

A 1” water services delivers city water to the building, distributing throughout the building. At the water meter, there is a 1” branch that feeds the irrigation system outdoors. If the existing commercial kitchen appliances are relocated to this building, the size of the water service will need to be evaluated for adequacy.

Domestic Water piping:

Copper piping is used to distribute hot and cold domestic water through the building. Plumbing fixtures were checked for operation, and distribution piping is assumed to be adequate.

Gas Service:

There is a 1-1/2" gas service delivering natural gas to the building, feeding gas to appliances such as air handling units. The outdoor piping and appurtenances appear to be corroded and should be evaluated for integrity and repaired or replaced as necessary.

Water Heating Plant:

There are several small-capacity electric water heaters scattered throughout the building supplying domestic hot water to various sanitary fixtures. If the commercial kitchen appliances are relocated into this building, the domestic water heating capacity will need to be reviewed and possibly revised.

Fixtures & Accessories:

Fixtures and accessories appeared to be adequate for future use. Existing fixtures should be evaluated based on any modifications for new program use of the building. If fixtures are replaced, low-flow fixtures are recommended.

Sanitary Waste & Vent Systems:

Existing sanitary systems are operating adequately. There is a 4" cast iron sanitary like exiting the building and connecting to the town sewer system in the street. Sanitary mains throughout the building shall be snaked and scoped to evaluate for any internal corrosion.

Roof Drainage:

The existing roof is flat and is covered by three roof drains. Case iron piping below the roof collects rain water and discharges it outdoors.

Conclusion & Recommendation

The existing plumbing systems are adequate for the current use of the building. Necessary modifications would be dictated by and architectural modifications or change in program use. The existing commercial kitchen appliances including grease trap, gas connections, sanitary connections and domestic water connections shall be relocated to the existing from the current Town Hall, and the various utilities should be evaluated to upgrading if necessary, including sanitary, domestic water, and natural gas.

FIRE SUPPRESSION

Existing DCU Building

Fire Service Characteristics:

There is a 4” sprinkler water service from the street. The piping and appurtenances appear to be well maintained and fully operational.

Fire protection systems:

The sprinkler water service splits downstream of the check valve into a combination went and dry system. The 2-1/2” wet sprinkler system serves semi-recessed chrome sprinkler heads in all occupied spaces as required by local codes and regulations. The 4” dry sprinkler system serves the attic space, and is filled with compressed air.

Conclusion & Recommendation

Both the wet and dry sprinkler systems appear adequate and up to date for the current use of the building. Necessary modifications would be dictated by and architectural modifications or change in program use.

END OF REPORT

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LOCUS MAP

LITT
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GREA
LITTLETON, M

DEVEL
RYAN DE
4 PAR
WESTFORD, M

Building Code Analysis
Littleton Office Building
Littleton, Massachusetts

General Building Limitations as per requirement
of the Massachusetts State Building Code

1. Use Group B as per Building Code Section 3

2. Height and area limitations of building (Table
   For type 5B unprotected construction
   Height Limitations: 2 Stories or 30 feet
   Area Limitations: Maximum 7,200 Sq. Ft.

- Under section 506.3 an area increase is allo
  with an automatic sprinkler system, 200%
  for 1 and 2 story buildings.
  Allowable Building Square Footage per floor
  7,200 + 200% increase = 21,600 sq. ft. per

- By design the Building height is 22'-6"
  and the square footage per floor is 10,370
  The area increase allows the design to be u
  construction type 5B.v

3. Fire resistance ratings of structural element
   a) Exterior walls - no fire rating necessary
   b) Fire walls & party walls - none present wi
   c) Fire enclsures of exits - one hour require
   d) Fire separation for shafts and elevator h
   e) Smoke partitions between tenant spaces
   f) Smoke barriers - none required
   g) Interior walls - none required
   h) Floor & roof construction - none required

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LITTLETON

LETON
BUILDING
AT ROAD
MASSACHUSETTS

LOPED FOR :
VELOPEMENT
RK DRIVE
MASSACHUSETTS

APPROVED
THESE PLANS HAVE BEEN REVIEWED BY
ON 10-21-19
A LICENSE TO PROCEED AND SHALL NOT BE CONSTRUED AS
AUTHORITY TO VIOLATE, CANCEL OR SET ASIDE ANY OF THE
PROVISIONS OF THE MSBC. THESE PLANS MUST REMAIN ON
SITE AVAILABLE FOR REVIEW BY INSPECTORS.

255
GREAT ROAD

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04.2
503):

wned

floor
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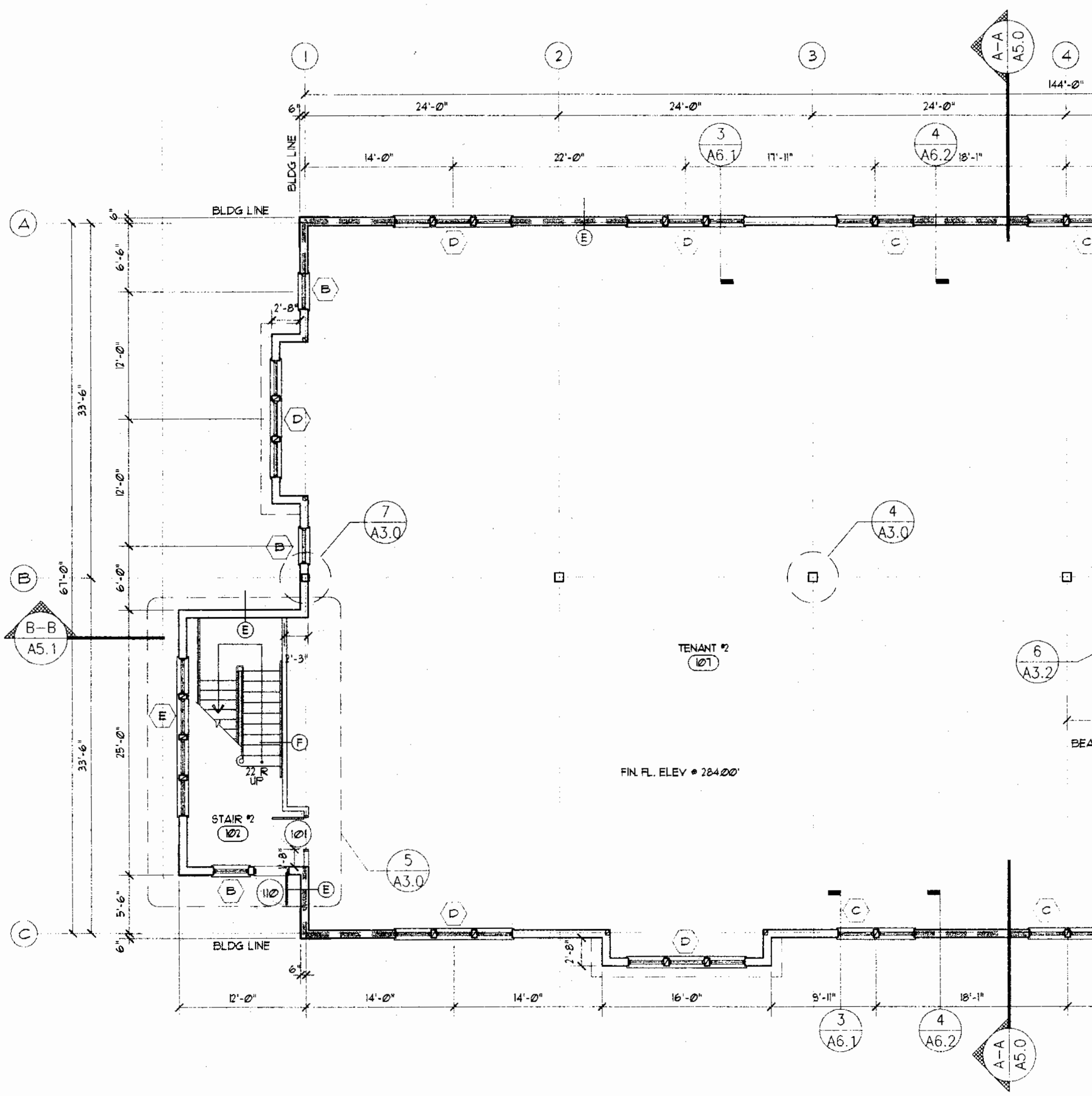
nder

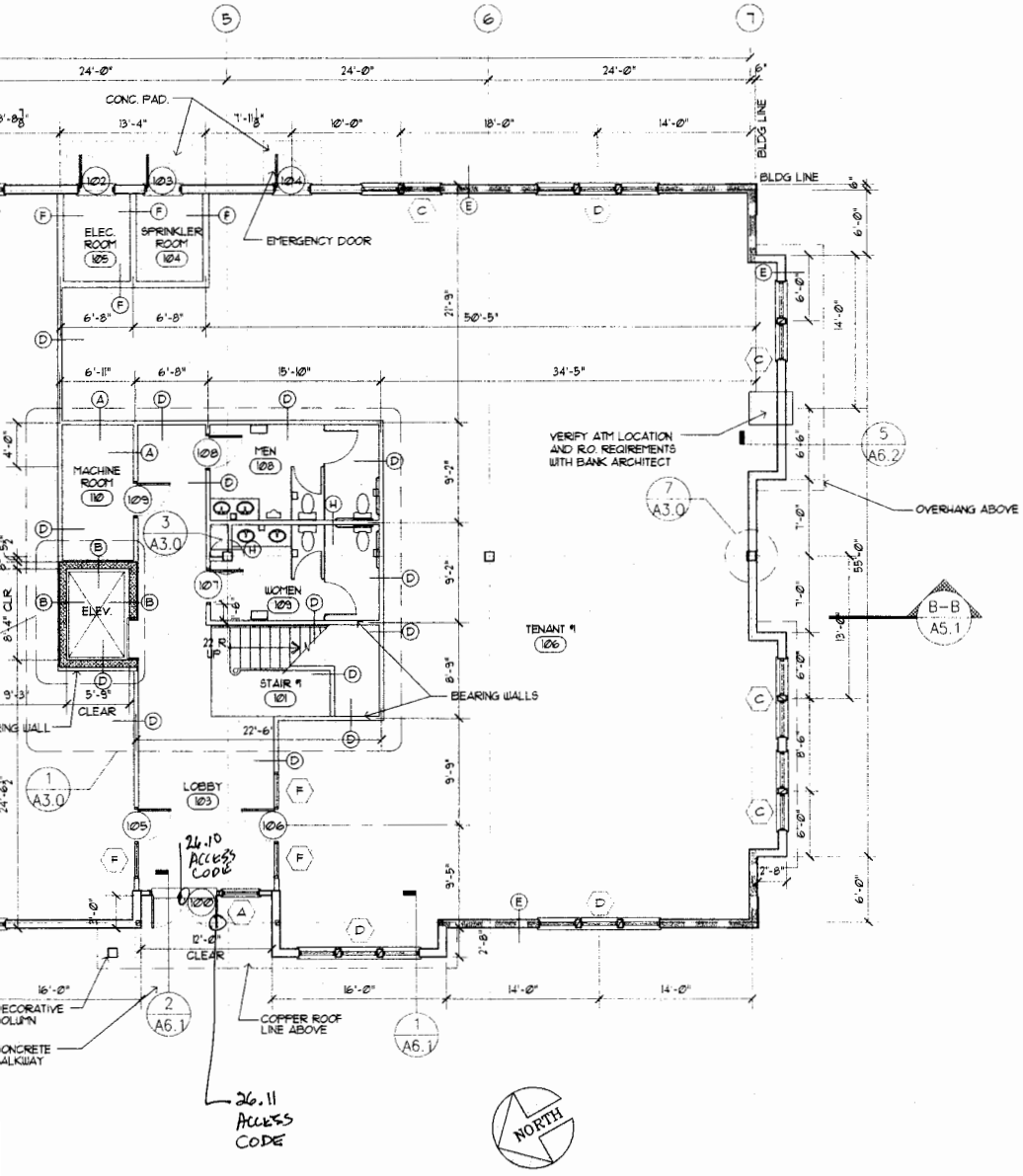
s

thin the building
d under 1014.11
oistway - one hour required
- none required

B2022-11

Drawings not to scale. Refer to original drawing set.


BLDG LINE
TENANT #2
107
FIN. FL. ELEV • 284.00'
STAIR #2
102
22 R
UP
A-A
A5.0
B-B
A5.1
7
A3.0
4
A3.0
5
A3.0
6
A3.2
3
A6.1
4
A6.2
24'-0"
14'-0"
22'-0"
17'-11"
18'-1"
144'-0"
33'-6"
67'-0"
12'-0"
6'-6"
6'-0"
25'-0"
5'-6"
16'-0"
9'-11"



FIRST FLOOR PLAN (1 SK11)
SCALE: 1/8"=1'-0"

LEGEND

- SOFFIT / CEILING CHANGE OR CABINETS, AS NOTED
- PROPOSED WALL / PARTITION
- (A) PARTITION / WALL TYPE
- (101) DOOR & DOOR NUMBER
- WINDOW & WINDOW NUMBER
- (A) DETAIL / SECTION MARK: SECTION # / SHEET LOCATION
- BUILDING SECTION: SECTION # / SHEET LOCATION
- INTERIOR ELEVATIONS
- STAIR ¶ 101 ROOM NAME & NUMBER

REGISTERED ARCHITECT JOSEPH D. LaGRASSE No. 4133 METHUEN, MASS. COMMONWEALTH OF MASSACHUSETTS

Joseph D. LaGrasse & Associates Inc.
Architecture * Engineering * Land Planning * Interior Design
One Elm Square
Andover, Massachusetts 01810
(978) 470-3675

PREPARED FOR: RYAN DEVELOPEMENT

SHEET TITLE: FIRST FLOOR PLAN

PROJECT NAME: LITTLETON OFFICE PARK

PROJECT ADDRESS: GREAT ROAD LITTLETON, MA

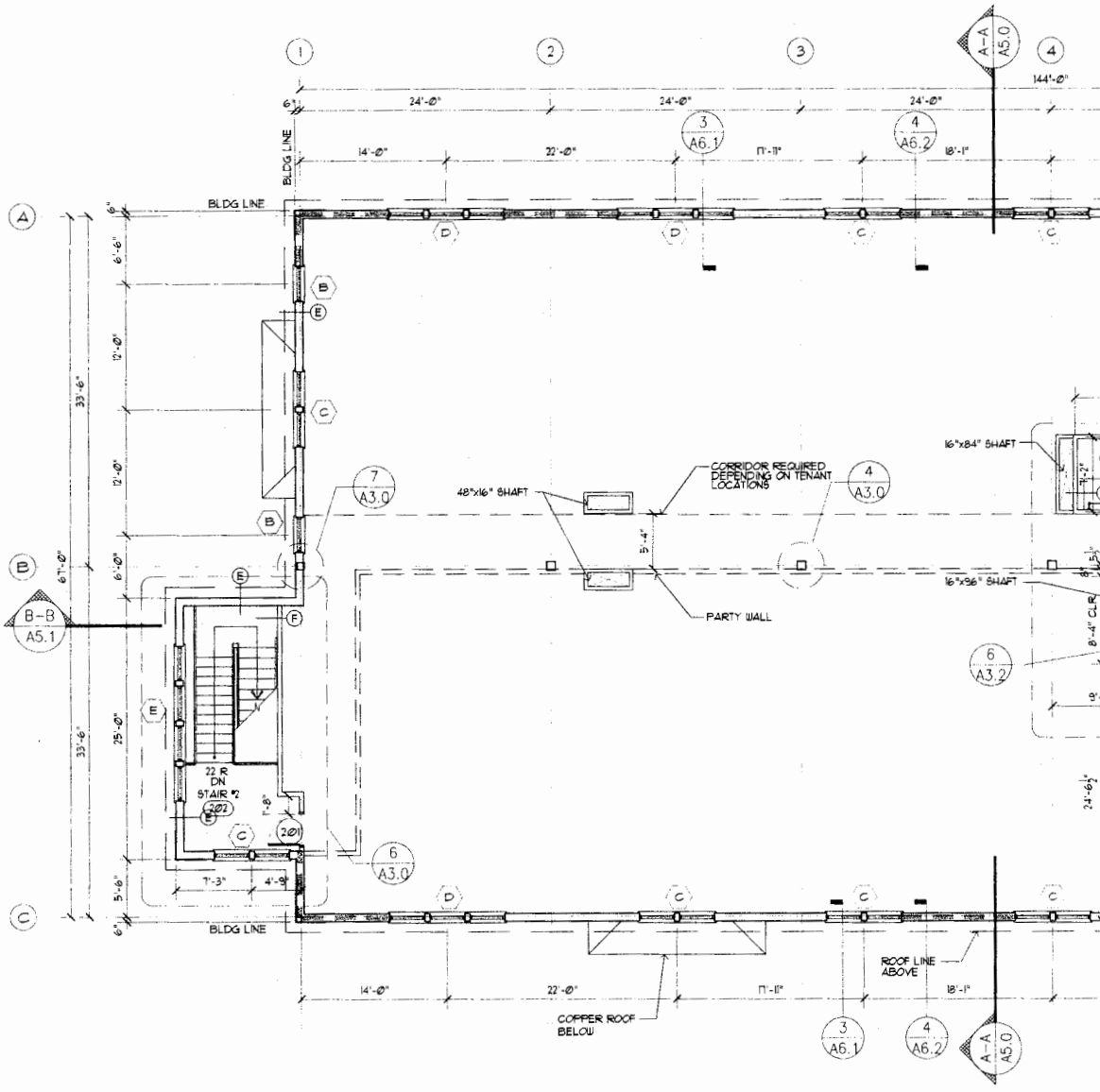
#	REVISION

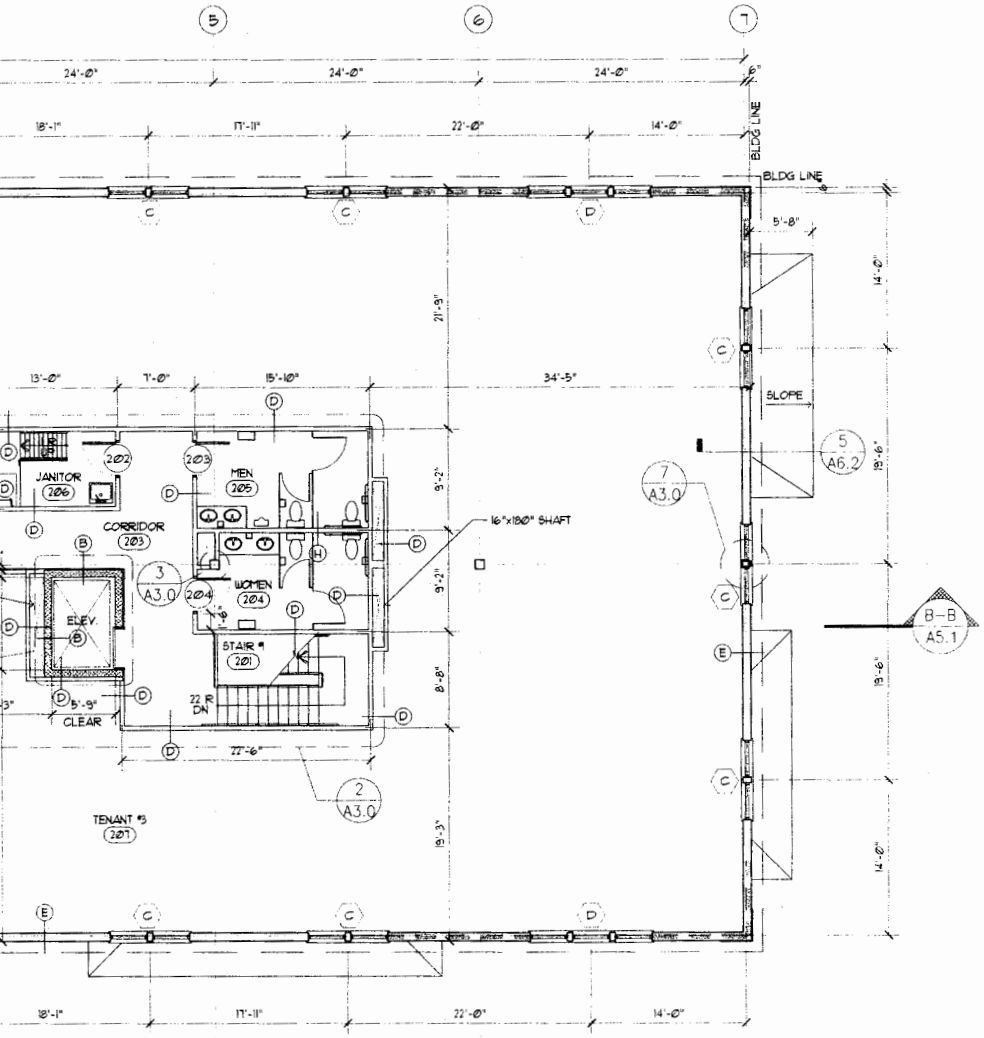
DATE: SEP. 18, 1998

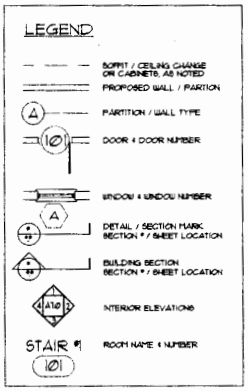
SCALE: 1/8"=1'-0"

PROJECT NO.: 1626

SHEET NO.: A1.0


1
2
3
4
A-A A5.0
144'-0"
24'-0"
24'-0"
24'-0"
14'-0"
22'-0"
11'-11"
18'-1"
3 A6.1
4 A6.2
BLDG LINE
BLDG LINE
A
B
C
6"
6'-6"
12'-0"
33'-6"
12'-0"
6'-0"
6'-0"
B-B A5.1
25'-0"
33'-6"
5'-6"
6"
7 A3.0
48"x16" SHAFT
CORRIDOR REQUIRED DEPENDING ON TENANT LOCATIONS
4 A3.0
5'-4"
PARTY WALL
16"x84" SHAFT
16"x96" SHAFT
6 A3.2
8'-4" CLR
24'-6½"
22 R DN STAIR #2
2Ø1
2Ø1
1'-8"
7'-3"
4'-9"
6 A3.0
BLDG LINE
14'-0"
22'-0"
11'-11"
18'-1"
COPPER ROOF BELOW
ROOF LINE ABOVE
3 A6.1
4 A6.2
A-A A5.0





SECOND FLOOR PLAN

SCALE: 1/8"=1'-0" (A1.1)

Joseph D. LaGrasse & Associates Inc.
Architecture * Engineering * Land Planning * Interior Design
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PREPARED FOR
RYAN DEVELOPEMENT

SHEET TITLE
SECOND FLOOR PLAN

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

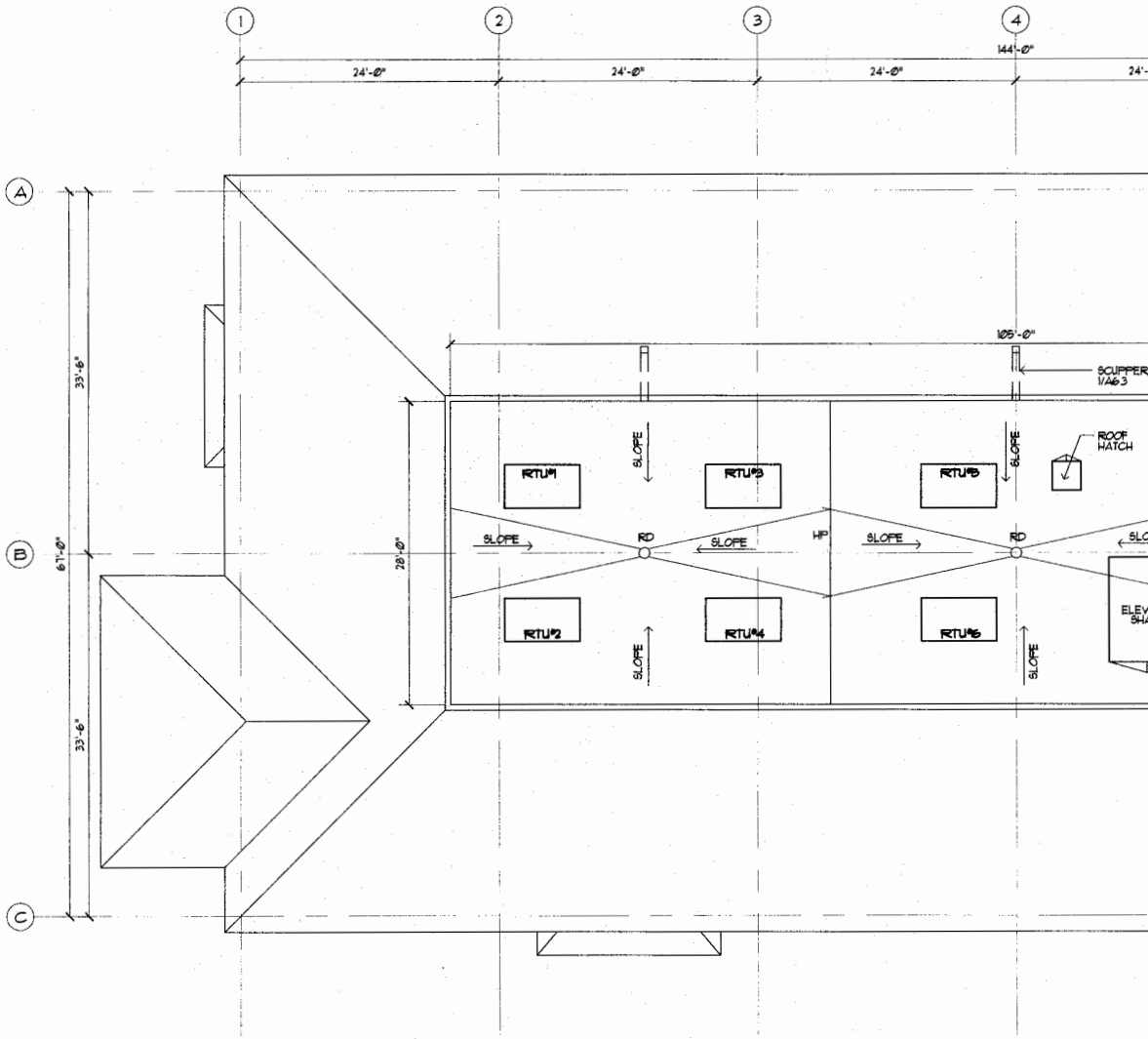
REVISION
#

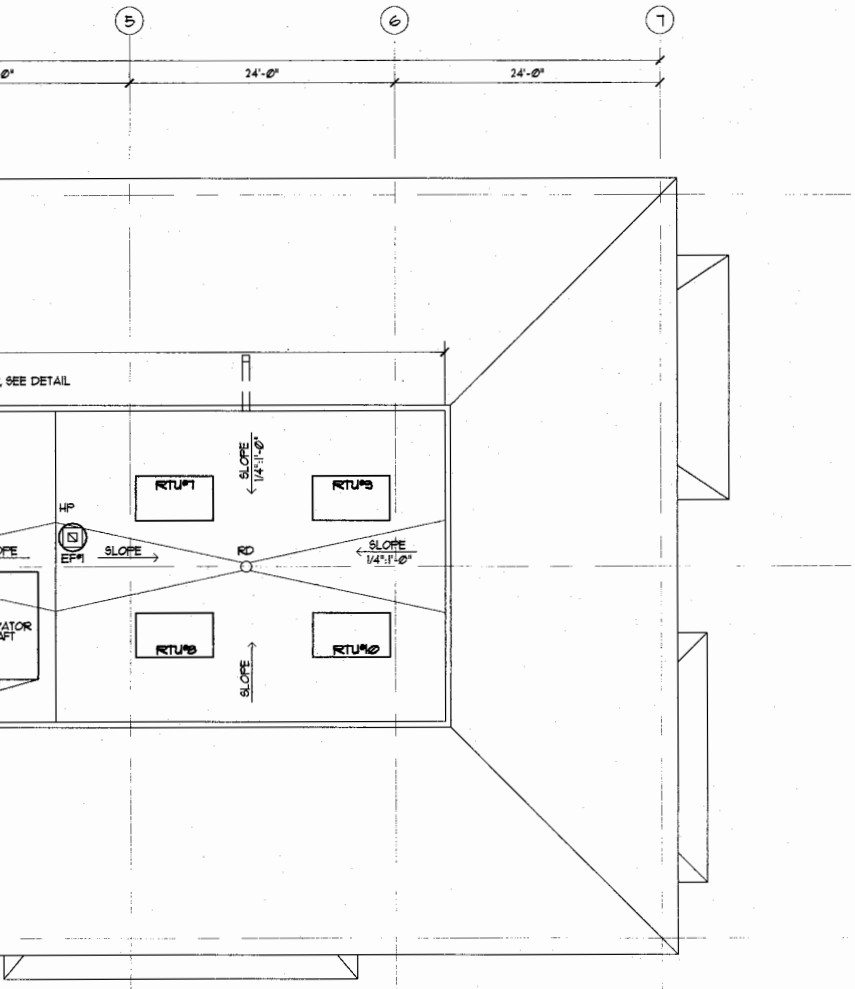
DATE
SEP. 18, 1998

SCALE
1/8"=1'-0"

PROJECT NO.
1626

SHEET NO:
A1.1


1
2
3
4
144'-0"
24'-0"
24'-0"
24'-0"
A
B
C
33'-6"
61'-0"
33'-6"
105'-0"
28'-0"
SCUPPER
1/A6.3
ROOF
HATCH
SLOPE
RTU#1
RTU#3
RTU#5
RTU#2
RTU#4
RTU#6
RD
HP



ROOF PLAN (1 / A12)
SCALE: 1/8"=1'-0"

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SHEET TITLE
ROOF PLAN

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

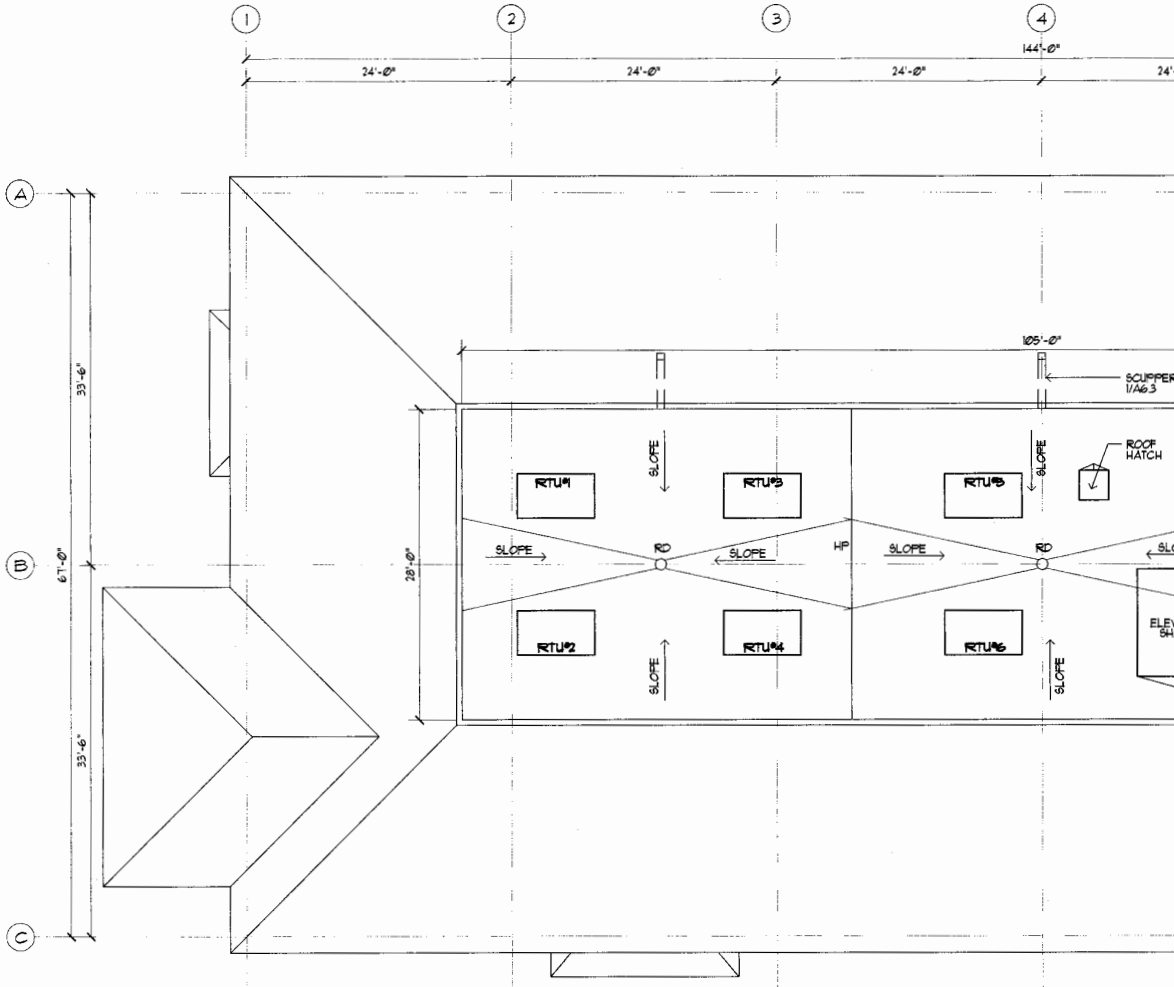
#	REVISION

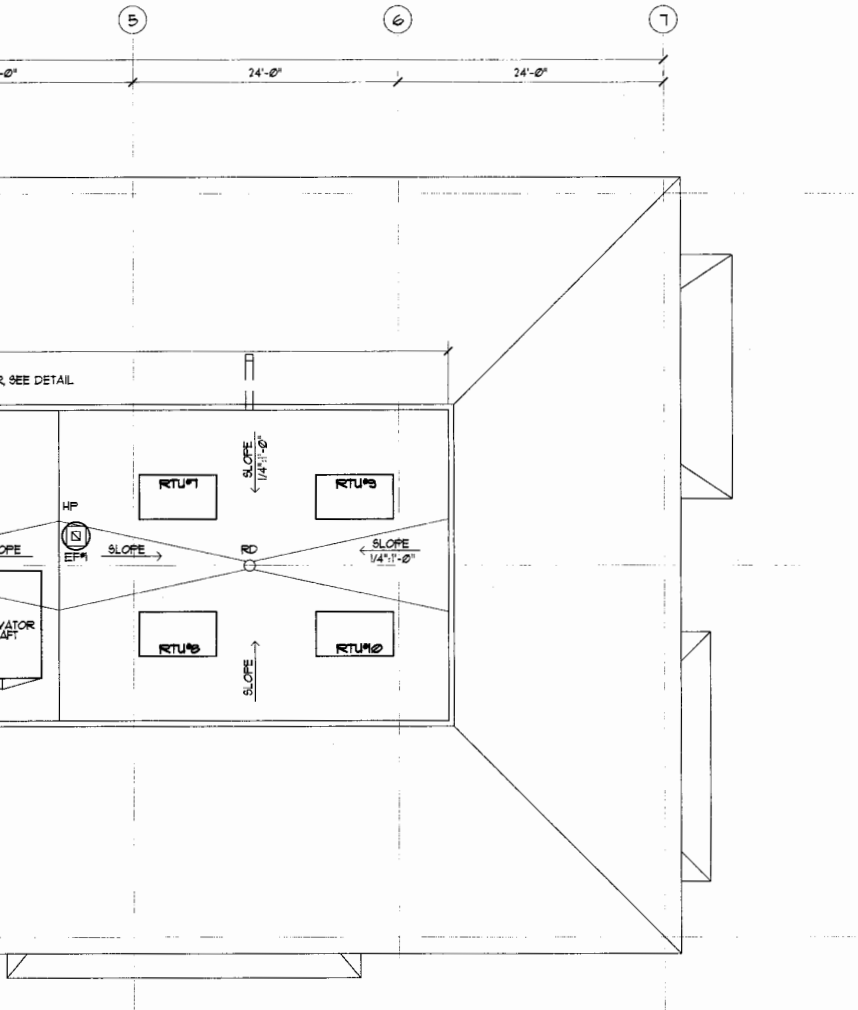
DATE
SEP. 18, 1998

SCALE
1/8"=1'-0"

PROJECT NO.
1626

SHEET NO.
A1.2


1
2
3
4
144'-0"
24'-0"
24'-0"
24'-0"
A
B
C
33'-6"
67'-0"
33'-6"
105'-0"
28'-0"
SCUPPER
1/A6.3
ROOF
HATCH
RTU#1
RTU#3
RTU#5
RTU#2
RTU#4
RTU#6
SLOPE
RD
HP



ROOF PLAN (1 / A1.2)
SCALE: 1/8"=1'-0"

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ROOF PLAN

PROJECT NAME
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PROJECT ADDRESS
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LITTLETON, MA

McLaughlin

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1/8"=1'-0"

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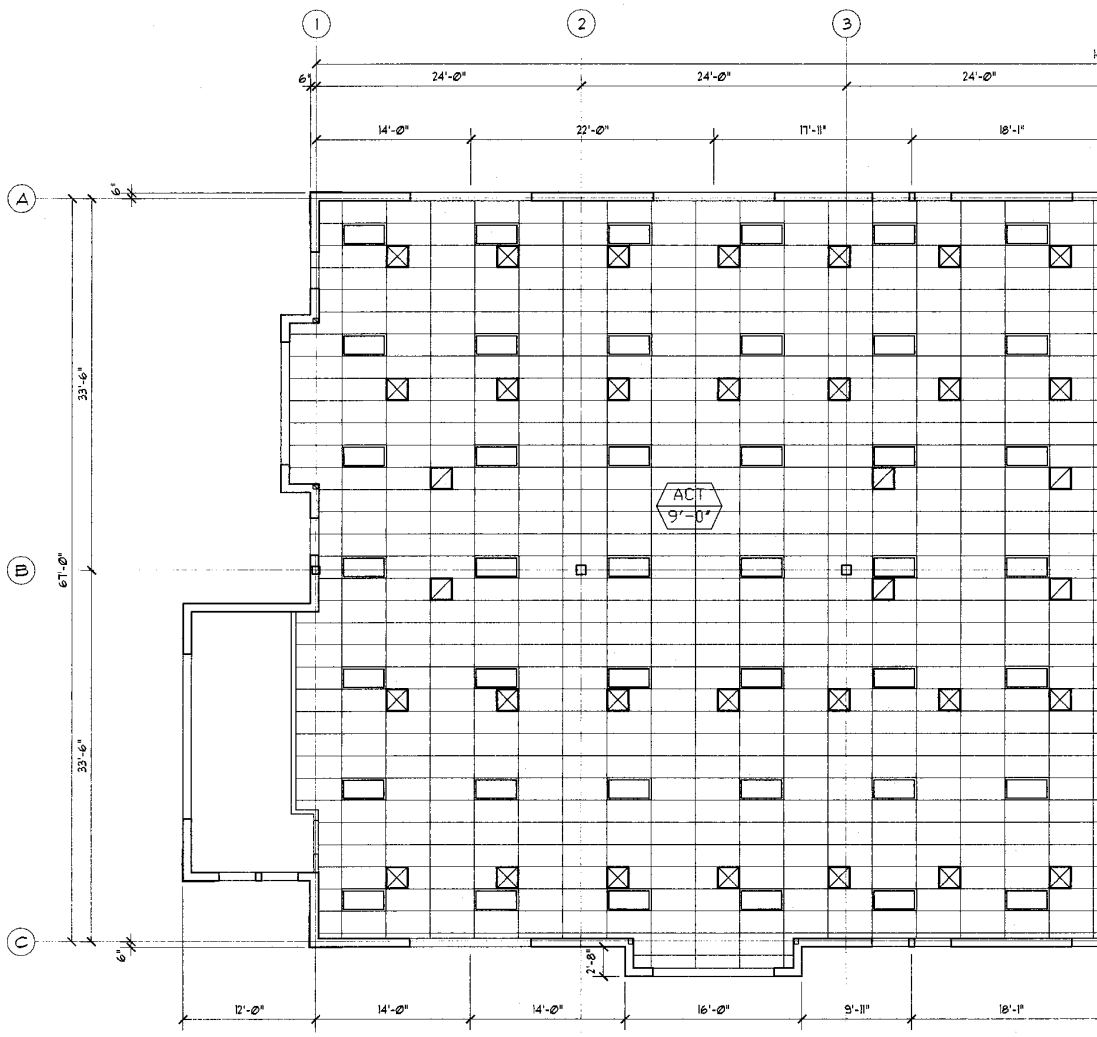
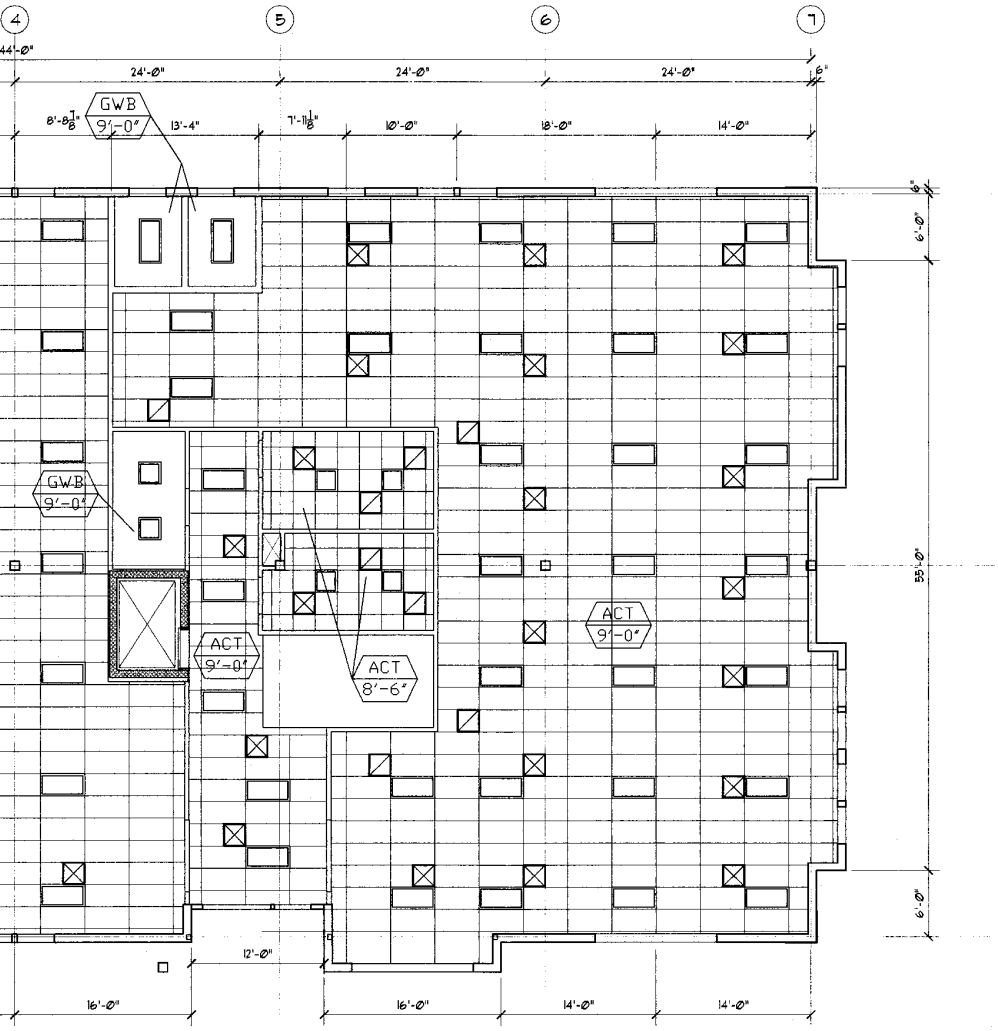
A1.2



LEGEND

2x4 SUSPENDED ACOUSTICAL CEILING TILE SYSTEM	AUDIO / VIDEO FIRE ALARM
CHANDELIER	AUDIO / VIDEO FIRE ALARM
2x4 FLUORESCENT FIXTURE	FIRE ALARM PULL STATION
2x2 FLUORESCENT FIXTURE	SUPPLY AIR
METAL HALIDE WALL MTD EXTERIOR FIXTURE	RETURN AIR
1x8 SURFACE MTD FLUORESCENT FIXTURE	RETURN AIR SIDE MOUNT
RECESSED FIXTURE	EXHAUST VENT OVER RANGE
INDIRECT LIGHTING	SMOKE DETECTOR
SPRINKLER HEAD	HEAT DETECTOR



FIRST FLOOR REFLECTED CEILING PLAN (1 / A2.0)

SCALE: 1/8"=1'-0"

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FIRST REFLECTED CEILING PLAN

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McLaughlin

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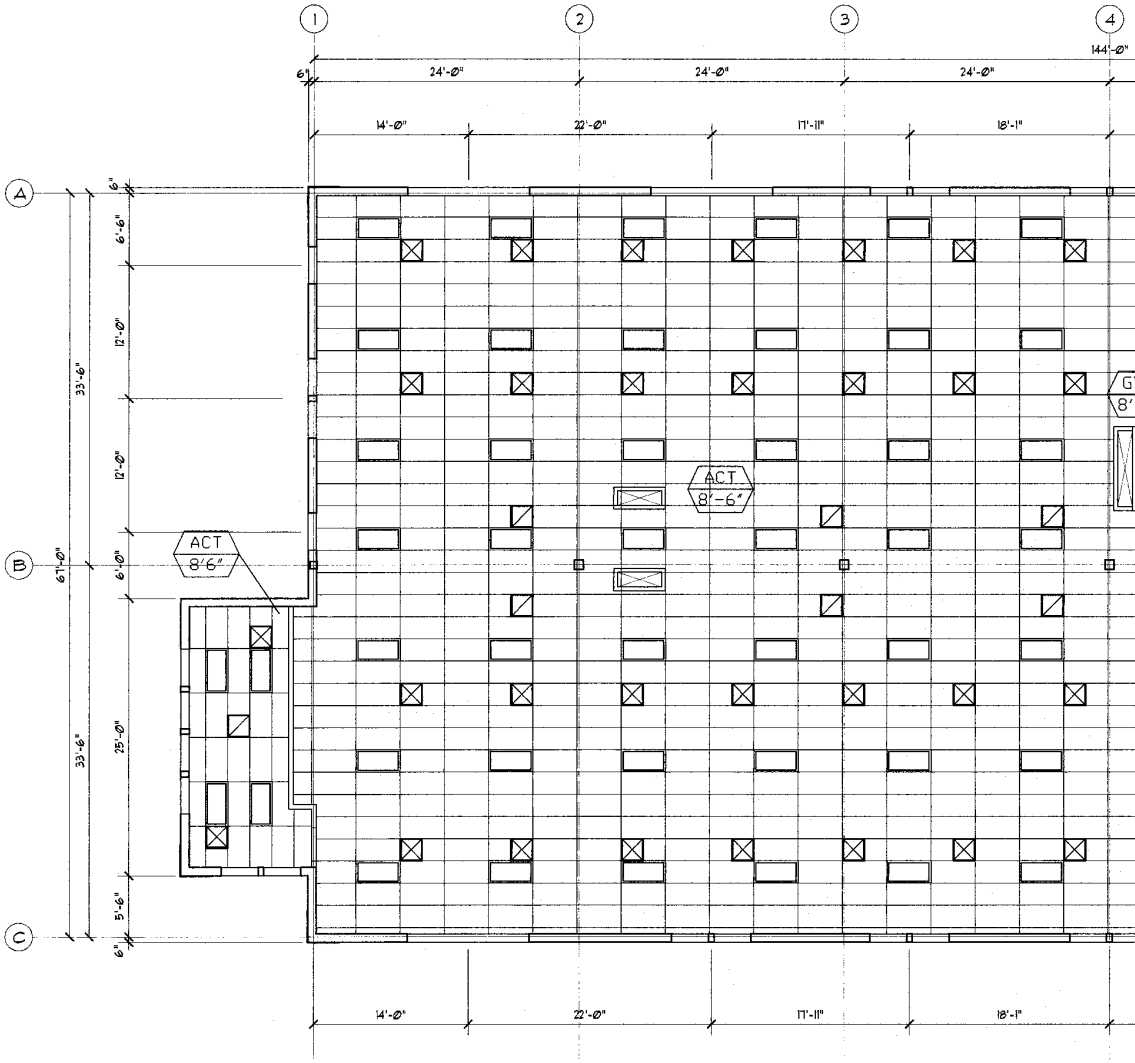
SCALE
AS NOTED

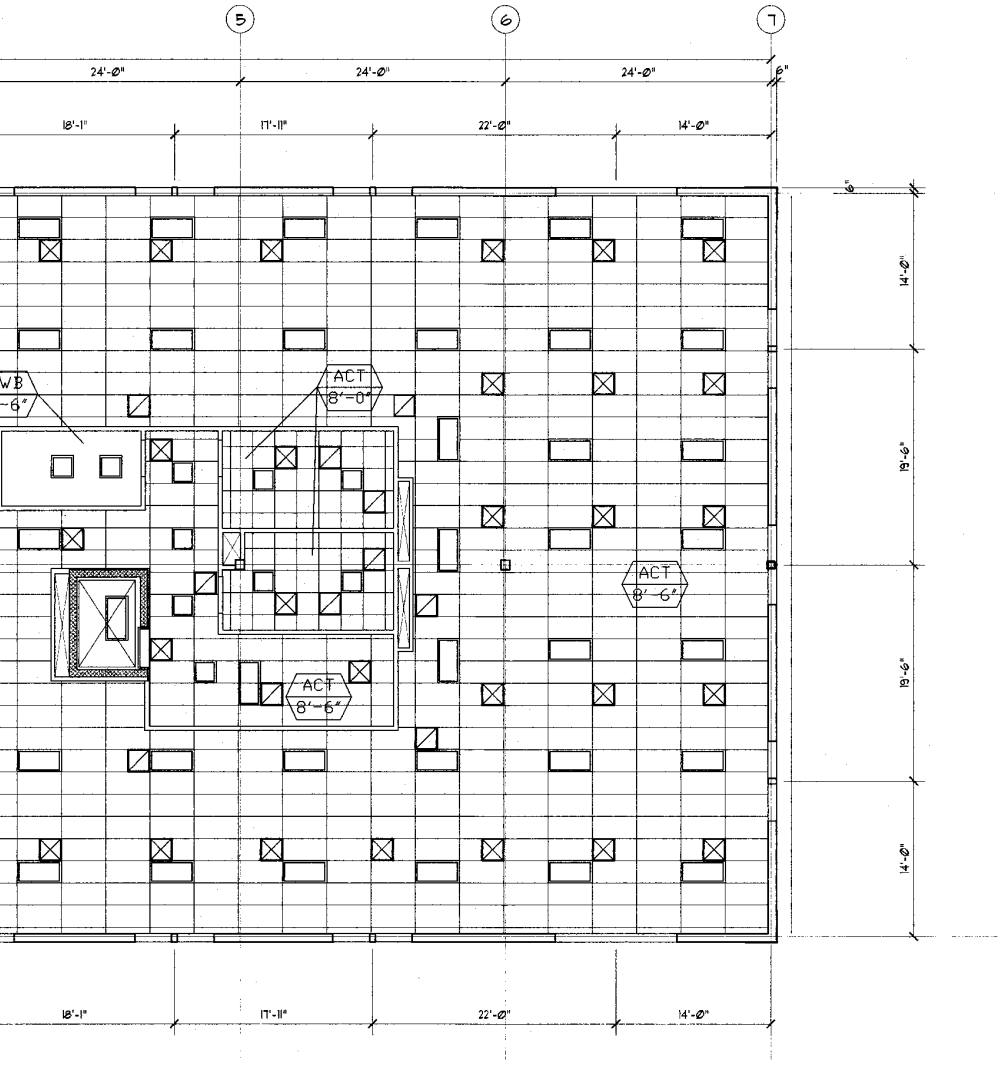
PROJECT NO.
1626

SHEET NO.
A2.0



LEGEND

2x4 SUSPENDED ACOUSTICAL CEILING TILE SYSTEM	AUDIO / VIDEO FIRE ALARM
CHANDELIER	AUDIO / VIDEO FIRE ALARM
2x4 FLUORESCENT FIXTURE	FIRE ALARM PULL STATION
2x2 FLUORESCENT FIXTURE	SUPPLY AIR
METAL HALIDE WALL MTD EXTERIOR FIXTURE	RETURN AIR
1x8 SURFACE MTD FLUORESCENT FIXTURE	RETURN AIR SIDE MOUNT
RECESSED FIXTURE	EXHAUST VENT OVER RANGE
INDIRECT LIGHTING	SMOKE DETECTOR
SPRINKLER HEAD	HEAT DETECTOR



SECOND FLOOR REFLECTED CEILING PLAN (1 / A2.1)

SCALE: 1/8"=1'-Ø"

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PREPARED FOR
RYAN DEVELOPEMENT

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

SHEET TITLE
SECOND REFLECTED CEILING PLAN

McLaughlin

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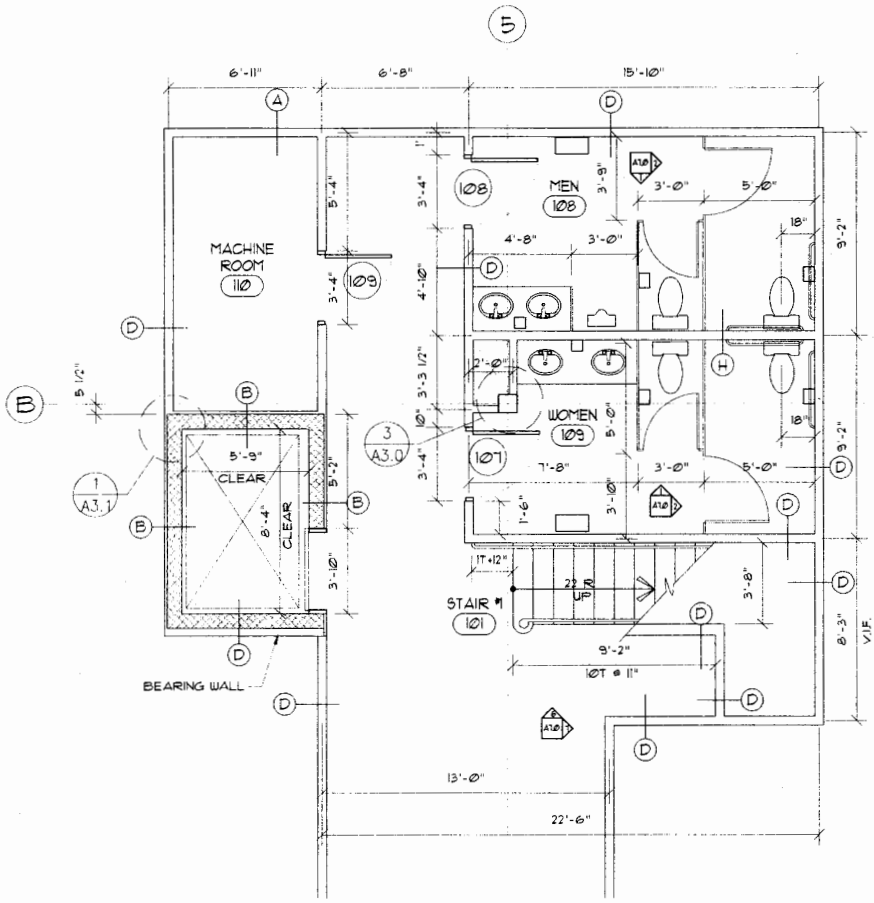
DATE
SEP. 18, 1998

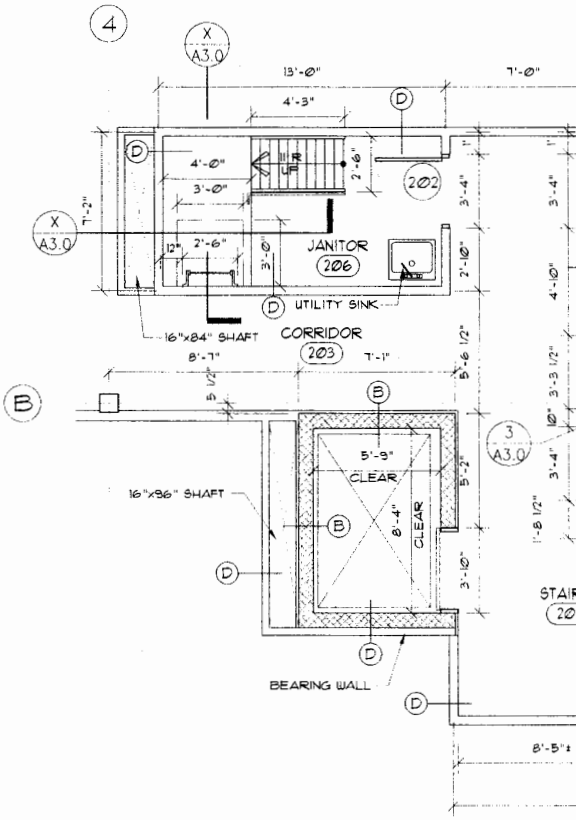
SCALE
AS NOTED

PROJECT NO.
1626

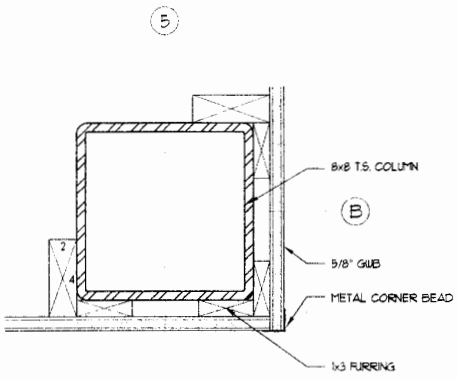
SHEET NO.
A2.1



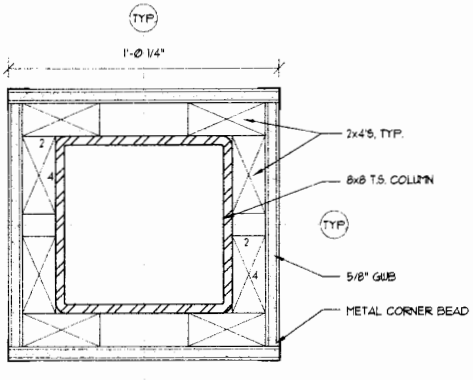
FISRT FLOOR CORE PLAN (1 / A3.0)
SCALE: 1/4"=1'-0"



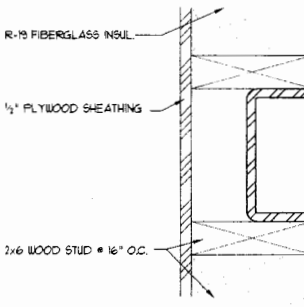
SEC



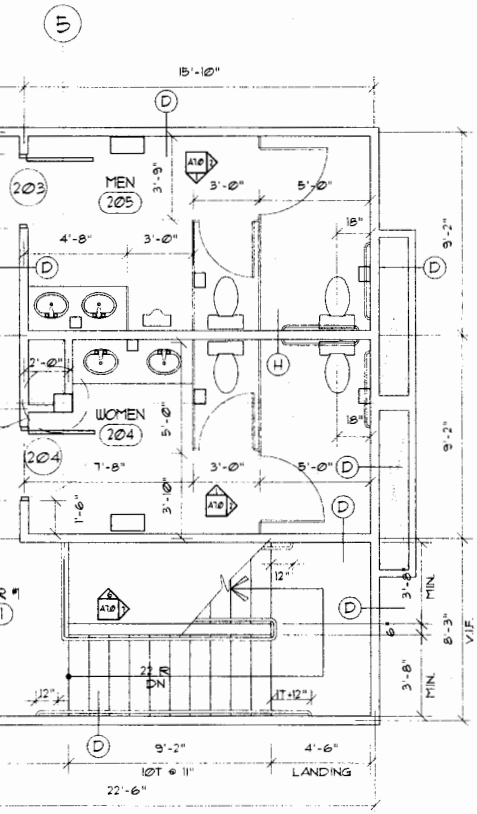
COLUMN DETAIL (3 / A3.0)
SCALE: 3"=1'-0"



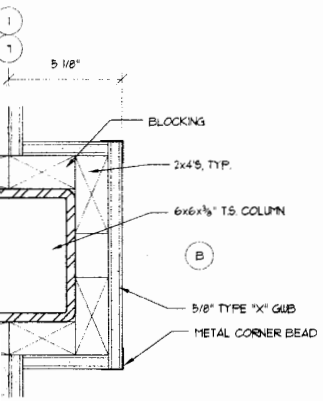
COLUMN DETAIL (4 / A3.0)
SCALE: 3"=1'-0"



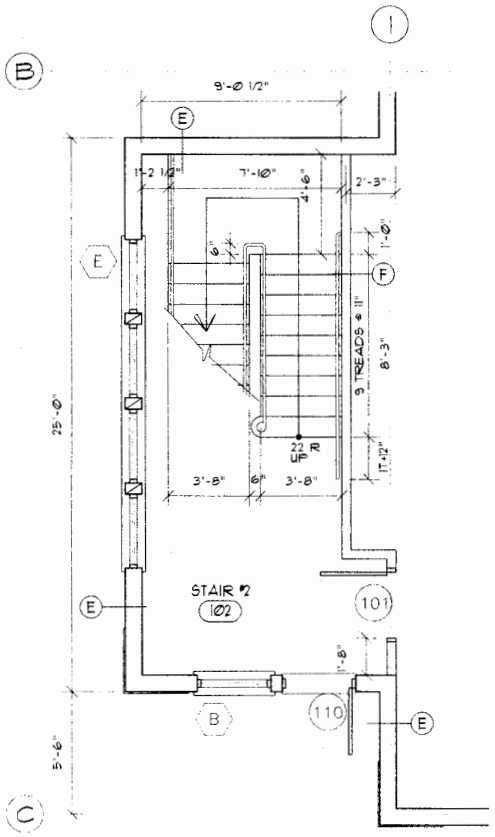
COLUMN



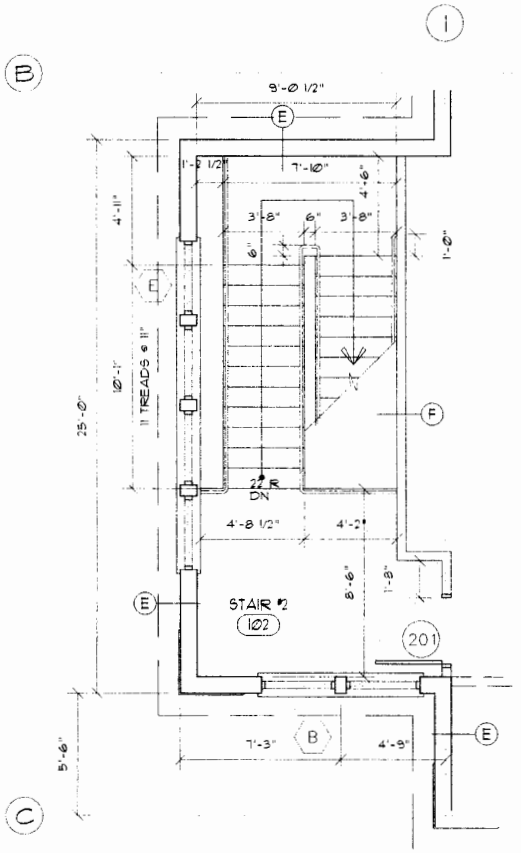
OND FLOOR CORE PLAN (2 / A3.0)
SCALE: 1/4"=1'-0"



DETAIL (1 / A3.0)
SCALE: 3"=1'-0"



STAIR #2 FIRST FLOOR PLAN (5 / A3.0)
SCALE: 1/4"=1'-0"



STAIR #2 SECOND FLOOR PLAN (2 / A3.0)
SCALE: 1/4"=1'-0"

Joseph D. LaGrasse & Associates Inc.
Architecture * Engineering * Land Planning * Interior Design
One Elm Square
Andover, Massachusetts 01810
(978) 470-3675

REGISTERED ARCHITECT — JOSEPH D. LAGRASSE — No. 4153 — METHUEN, MASS. — COMMONWEALTH OF MASSACHUSETTS

PREPARED FOR
RYAN DEVELOPEMENT

SHEET TITLE
ENLARGED FLOOR PLANS AND DETAILS

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

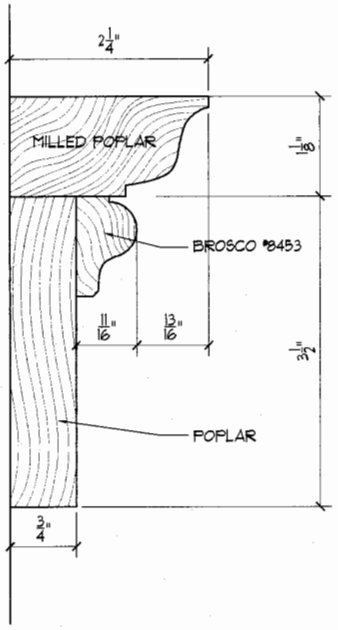
#	REVISION

DATE
SEP. 18, 1998

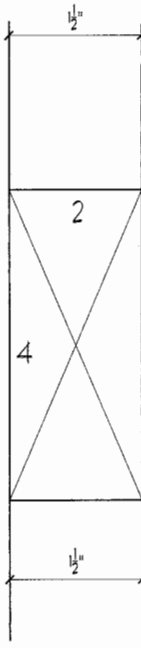
SCALE
AS NOTED

PROJECT NO.
1626

SHEET NO.
A3.0



CHAIR RAIL DETAIL (4 / A3.1)
SCALE: FULL



HA

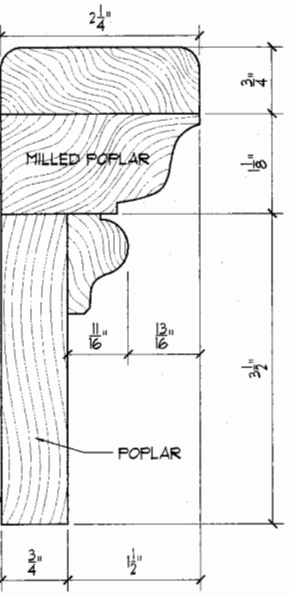
JAMCO 2 1/2" CASI

BROSCO SCREEN
MOLD #8140

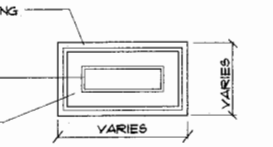
3/4" MDO
PLYWOOD

RAISED

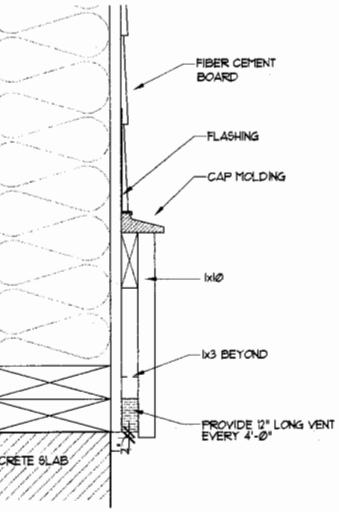
WATERTA



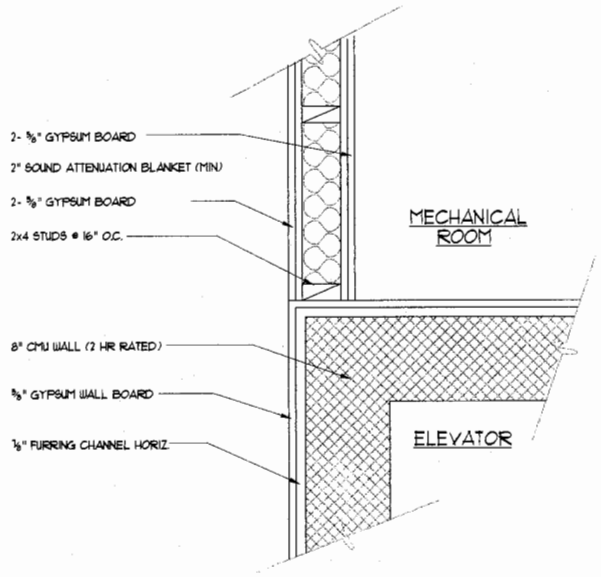
AND RAIL DETAIL 5 / A3.1
SCALE: FULL



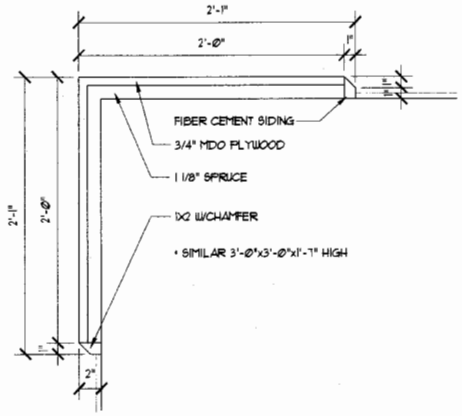
PANEL DETAIL 6 / A3.1
SCALE: 1/2"=1'-0"



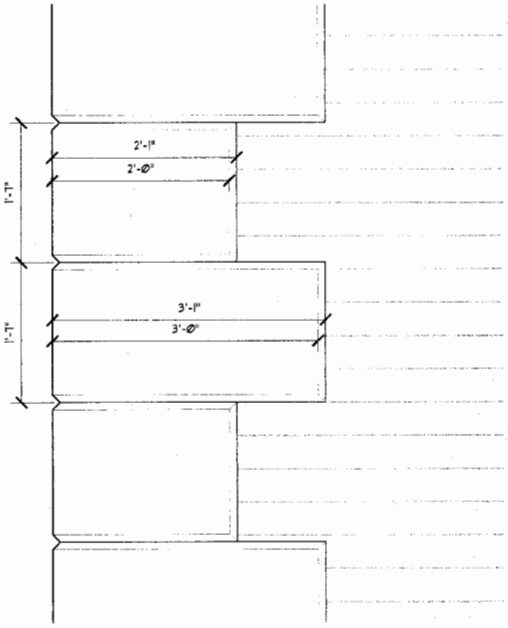
ABLE DETAIL 3 / A3.1
SCALE: 1 1/2"=1'-0"



WALL DETAIL @ ELEVATOR 1 / A3.1
SCALE: 1 1/2" =1'-0"



QUOIN DETAIL 2 / A3.1
SCALE: 1 1/2"=1'-0"



QUOIN ELEVATION 7 / A3.1
SCALE: 1 1/2"=1'-0"

Joseph D. LaGrasse & Associates Inc.
Architecture * Engineering * Land Planning * Interior Design
One Elm Square
Andover, Massachusetts 01810
(978) 470-3675

PREPARED FOR
RYAN DEVELOPEMENT

SHEET TITLE
MISCELLANEOUS DETAILS

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

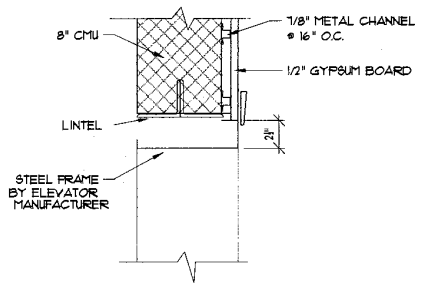
#	REVISION

DATE
SEP. 18, 1998

SCALE
AS NOTED

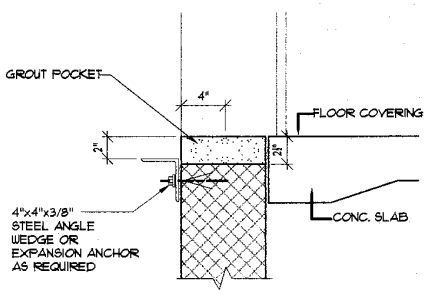
PROJECT NO.
1626

SHEET NO.
A3.1



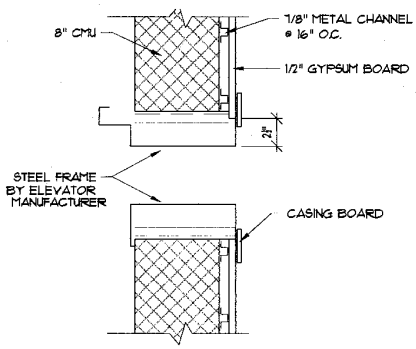
ELEVATOR HEAD 1 A3.2

SCALE: 1 1/2"=1'-0"



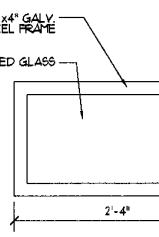
ELEVATOR SILL 2 A3.2

SCALE: 1 1/2"=1'-0"

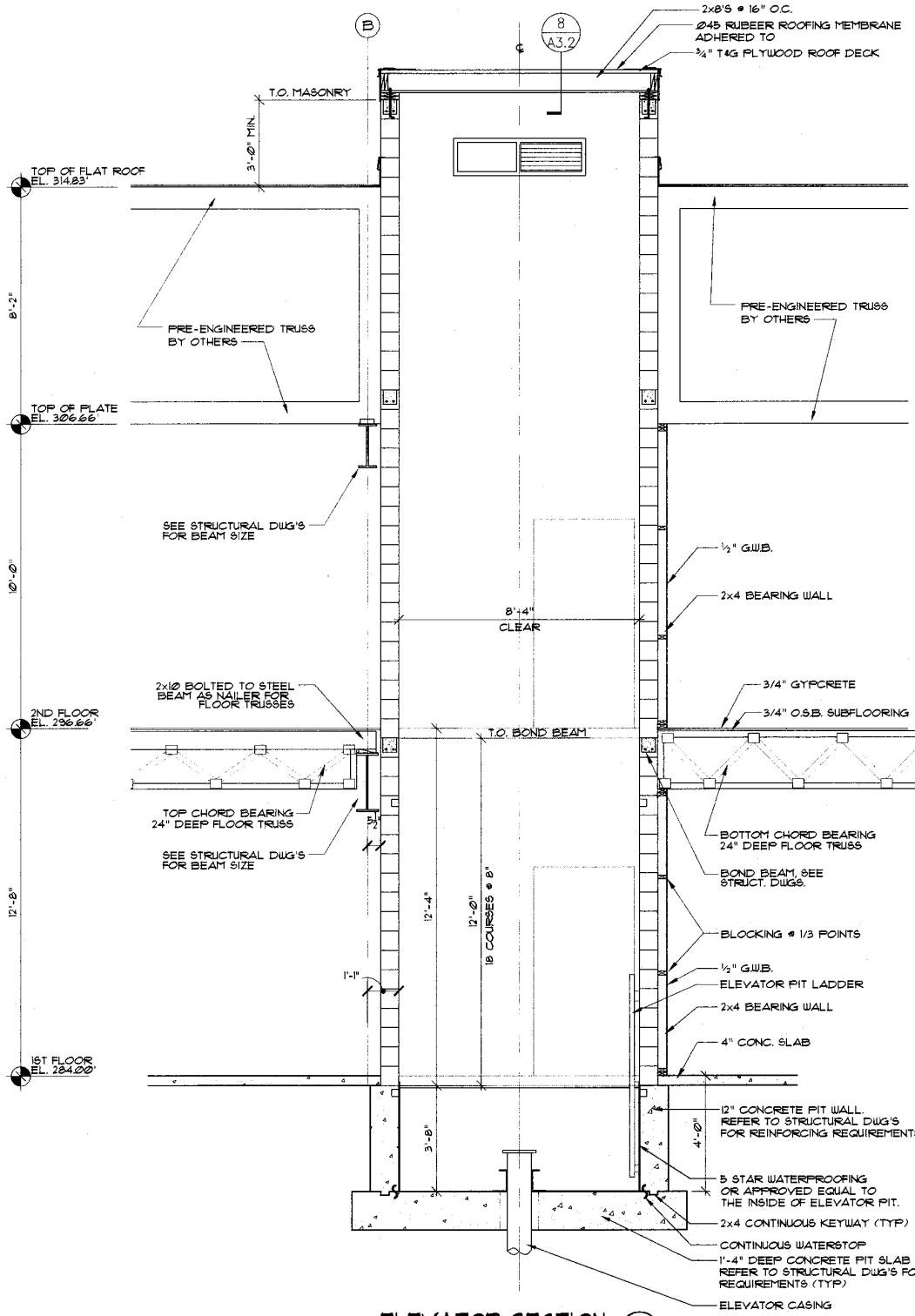


ELEVATOR JAMBS 3 A3.2

SCALE: 1 1/2"=1'-0"

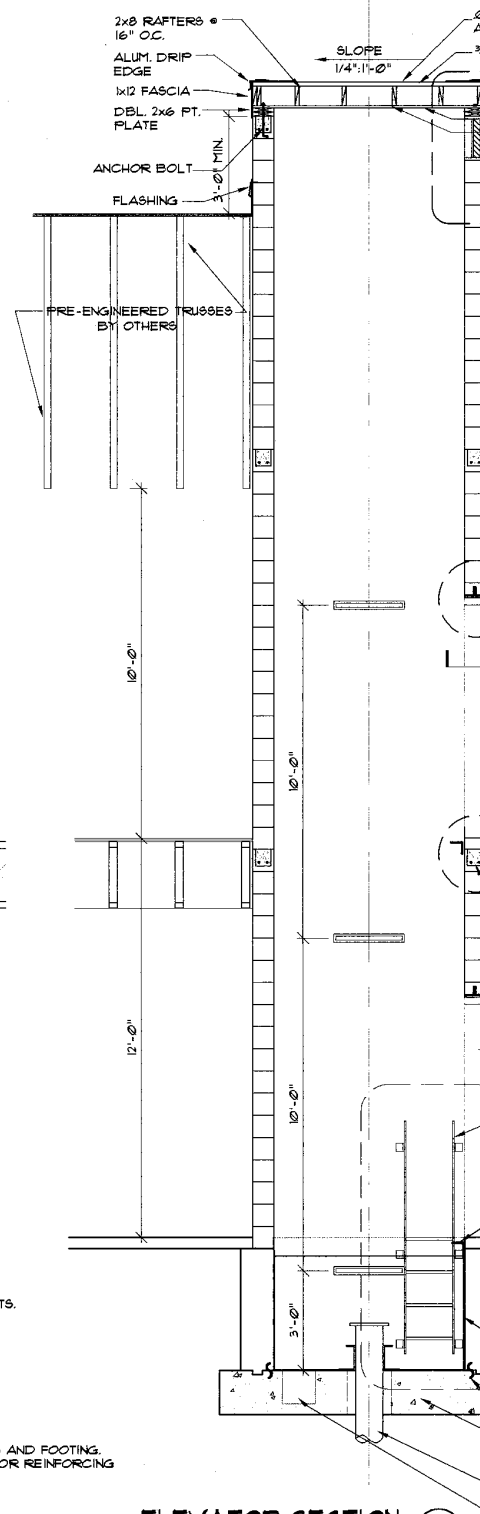


HOIST



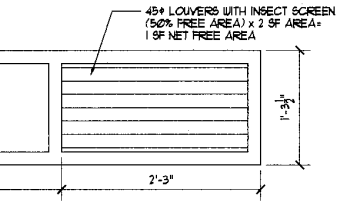
ELEVATOR SECTION A A3.2

SCALE: 3/8"=1'-0"

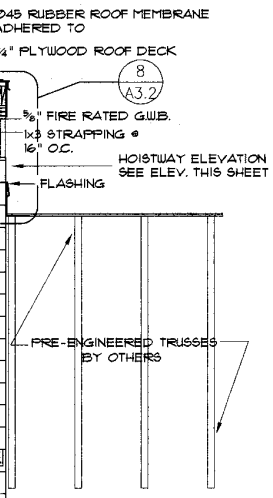


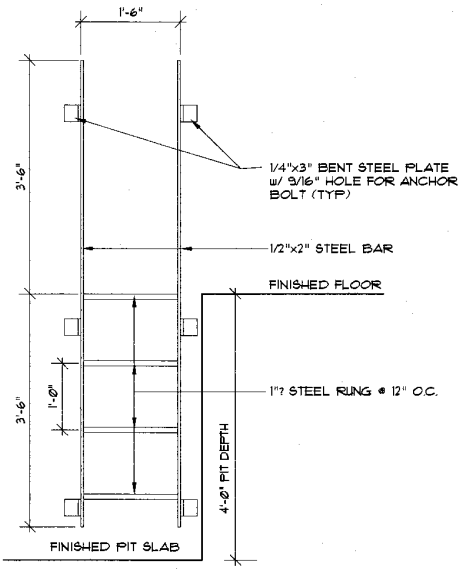
ELEVATOR SECTION B A3.2

SCALE: 3/8"=1'-0"

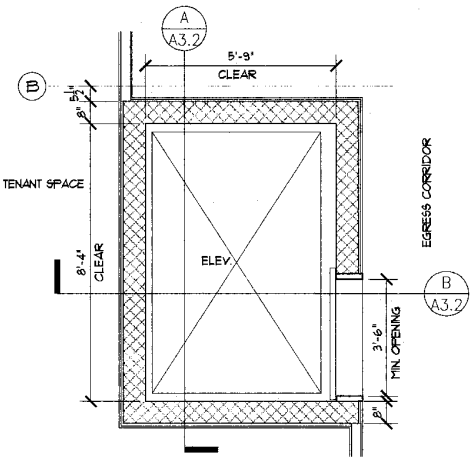


WAY VENT (4 / A3.2)
SCALE: 1"=1'-Ø"

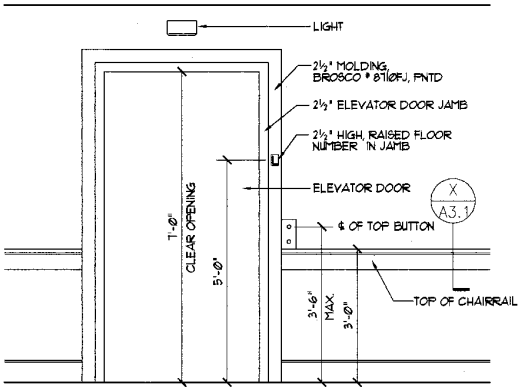




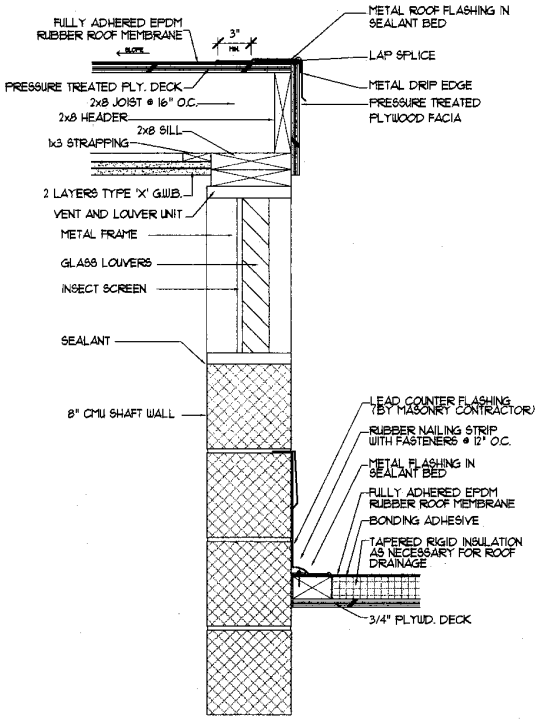
ELEVATOR PIT LADDER (5 / A3.2)
SCALE: 3/4"=1'-Ø"



ELEVATOR PLAN (6 / A3.2)
SCALE: 3/8"=1'-Ø"



ELEVATOR DOOR ELEVATION (7 / A32)
SCALE: 1/2"=1'-Ø"



ELEVATOR CAP DETAIL (8 / A32)
SCALE: 3"=1'-Ø"

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PREPARED FOR
RYAN DEVELOPEMENT

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

SHEET TITLE
DETAILS

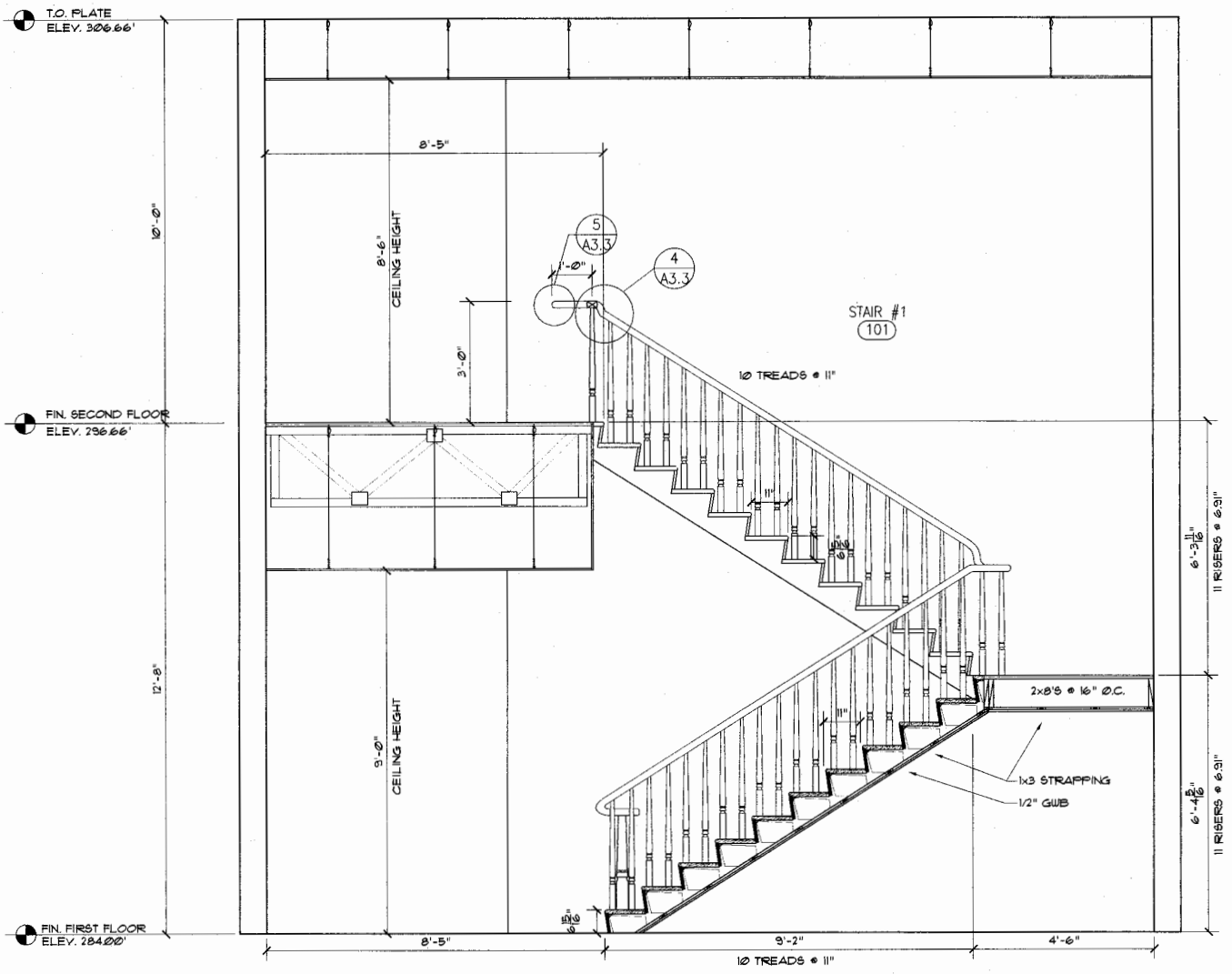
#	REVISION

DATE
SEP. 18, 1998

SCALE
1/8"=1'-Ø"

PROJECT NO.
1626

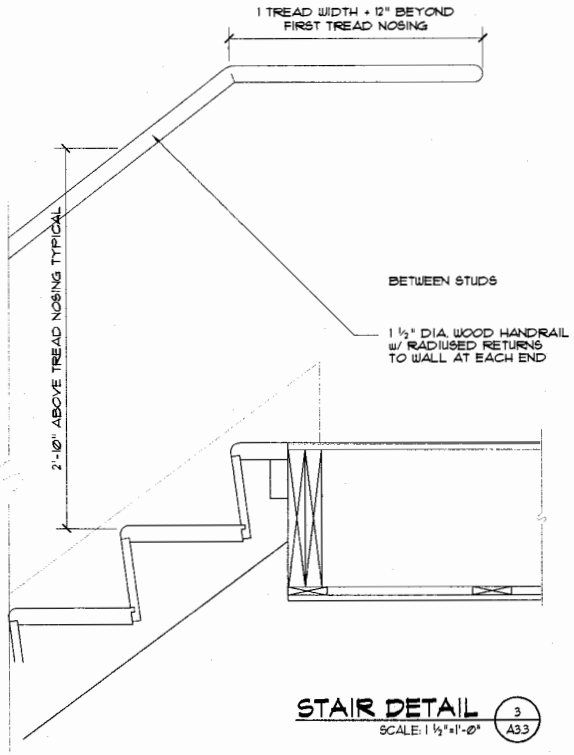
SHEET NO.
A3.2



STAIR #1 SECTION

1 / A3.3

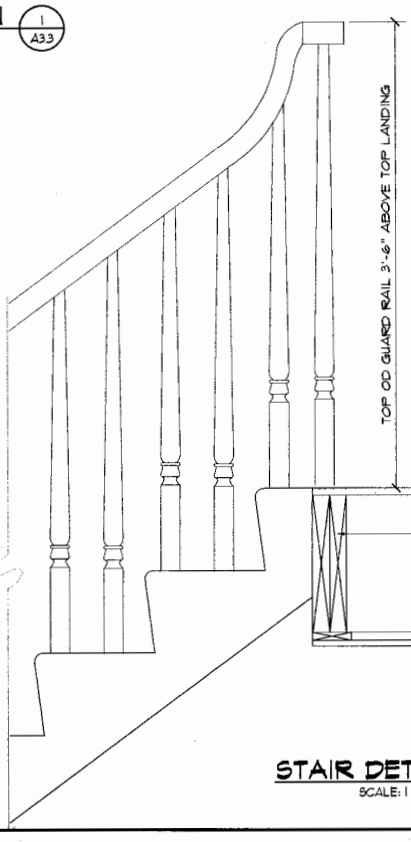
SCALE: ½"=1'-0"



STAIR DETAIL

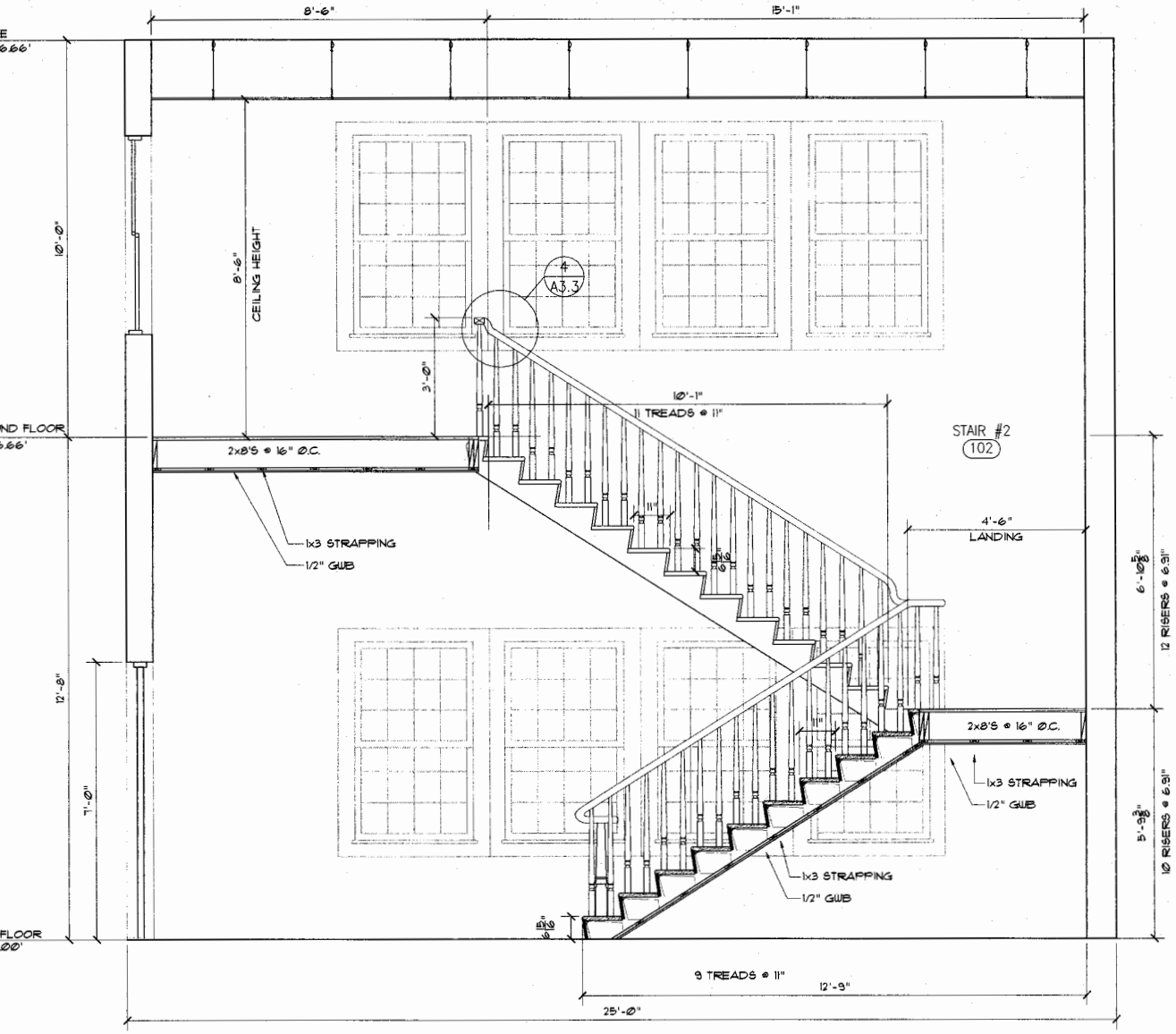
3 / A3.3

SCALE: 1 ½"=1'-0"



STAIR DET

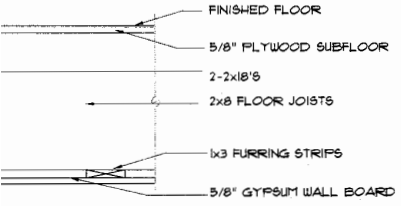
SCALE: 1

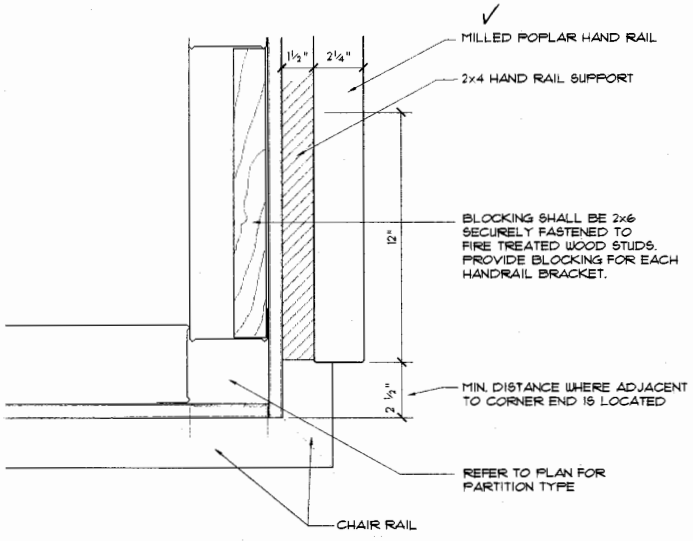


STAIR #2 SECTION

SCALE: ½"=1'-0"

2 A3.3





HANDRAIL BRACKET DETAIL

SCALE: 3"=1'-0"

5 A3.3

'AIL

½"=1'-0"

4 A3.3

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REGISTERED ARCHITECT JOSEPH D. LAGRASSE No. 4153 METHUEN COMMONWEALTH OF MASSACHUSETTS

PREPARED FOR
RYAN DEVELOPEMENT

SHEET TITLE
STAIR PLANS AND DETAILS

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

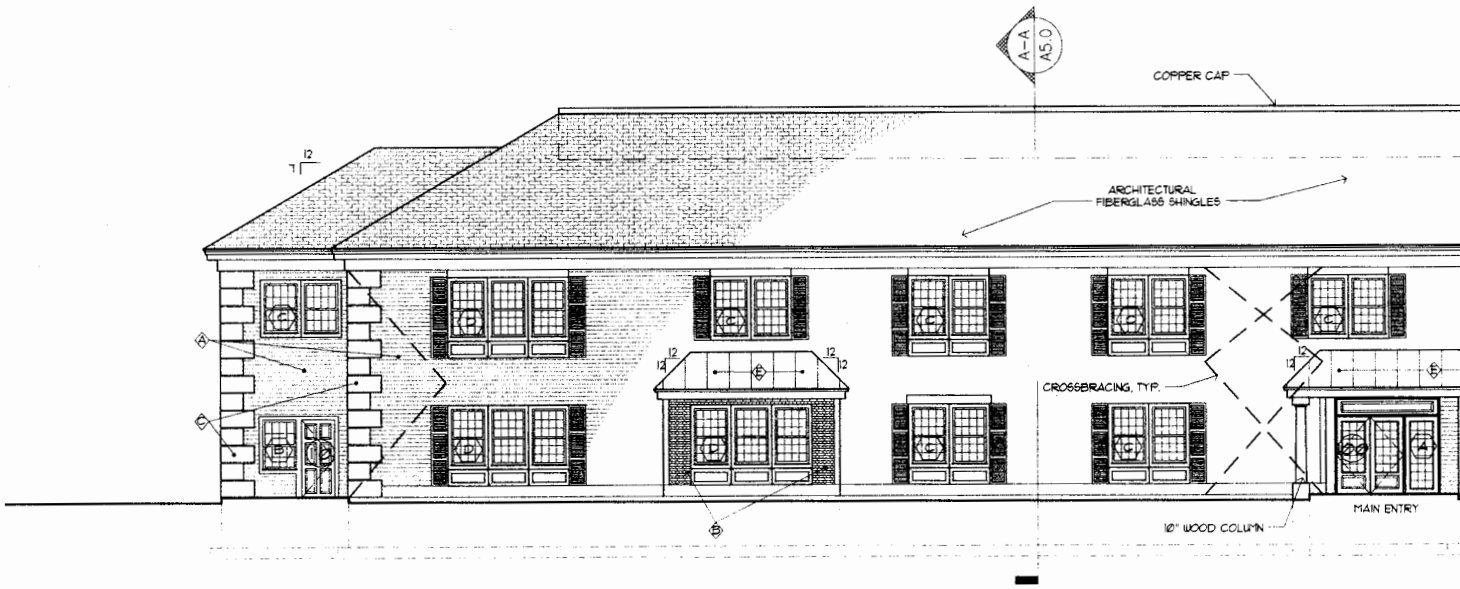
#	REVISION

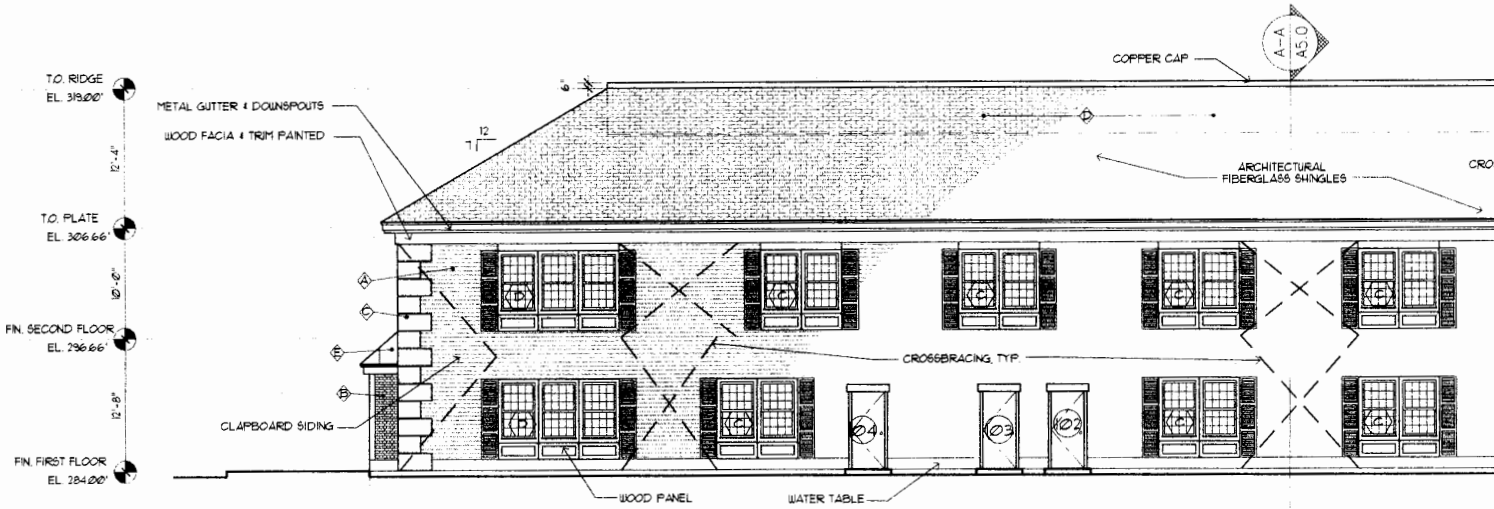
DATE
SEP. 18, 1998

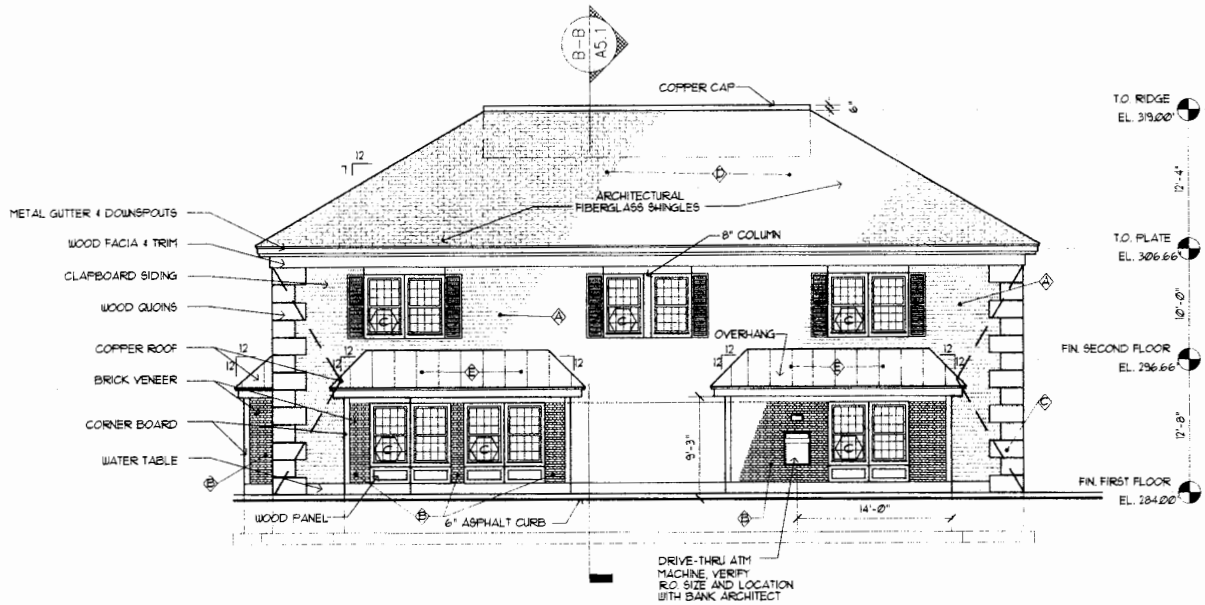
SCALE
AS NOTED

PROJECT NO.
1626

SHEET NO.
A3.3





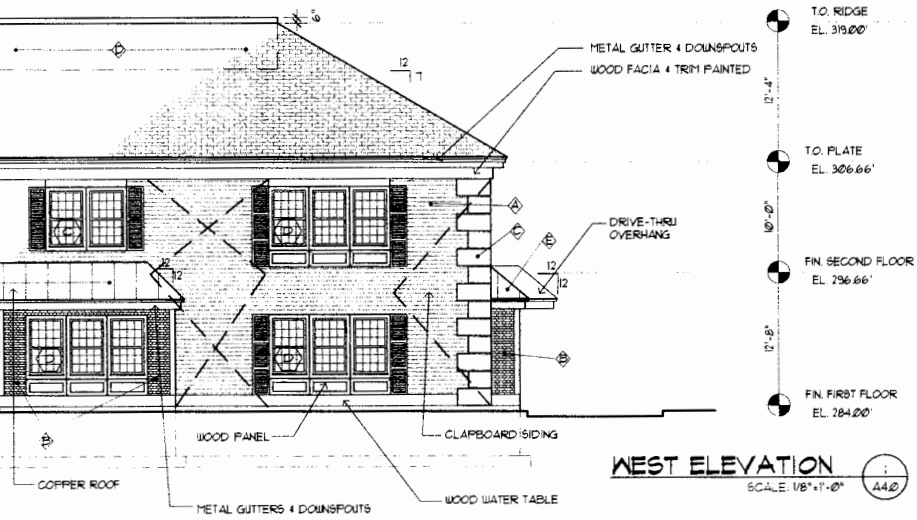


SOUTH ELEVATION

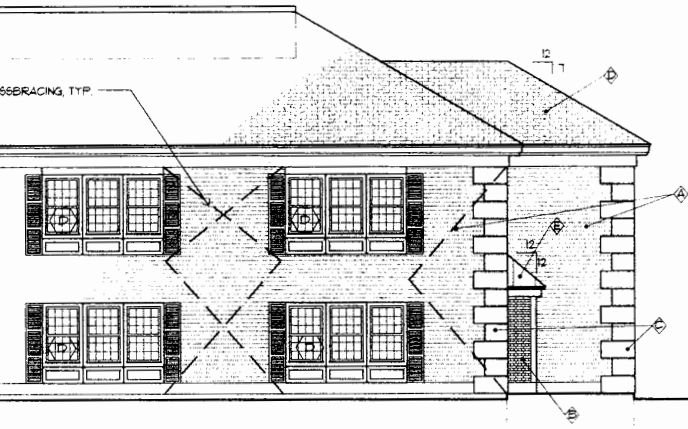
3
A4.0

SCALE: 1/8"=1'-0"

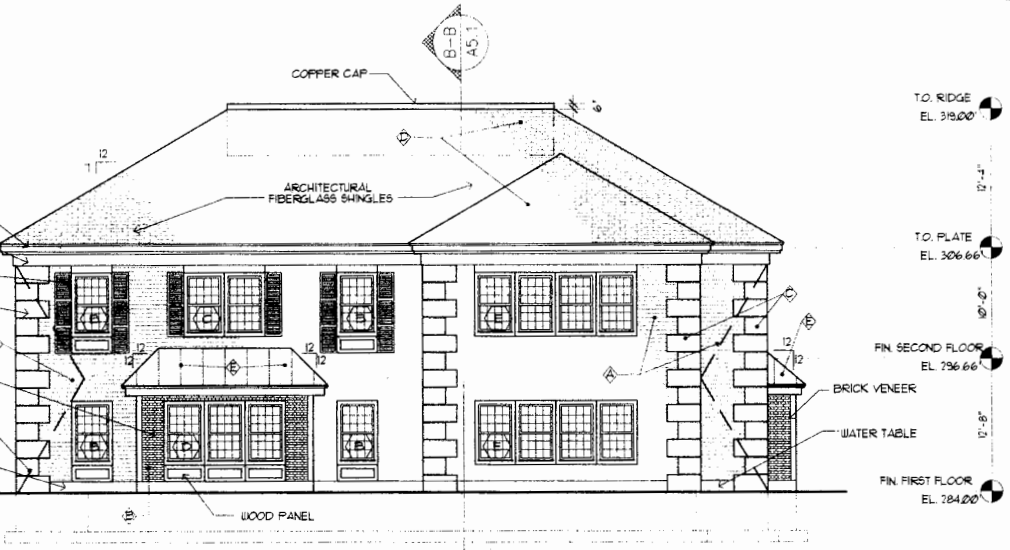
MATERIALS LEGEND	
A	FIBER CEMENT CLAPBOARD SIDING 6" TO WHEATHER
B	4" BRICK VENEER
C	MDO QUOINS PAINTED
D	25 YEAR ASPHAULT SHINGLE ROOF
E	COPPER ROOF



WEST ELEVATION
SCALE: 1/8"=1'-0" (1 / A4.0)

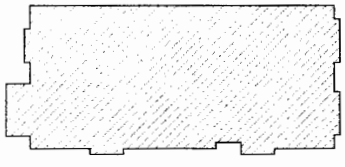


EAST ELEVATION
SCALE 1/8"=1'-0" (2 / A4.0)



NORTH ELEVATION
SCALE: 1/8"=1'-0" (4 / A4.0)

KEYPLAN



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Andover, Massachusetts 01810
(978) 470-3675

PREPARED FOR: RYAN DEVELOPEMENT

PROJECT NAME: LITTLETON OFFICE PARK

PROJECT ADDRESS: GREAT ROAD LITTLETON, MA

SHEET TITLE: BUILDING ELEVATIONS

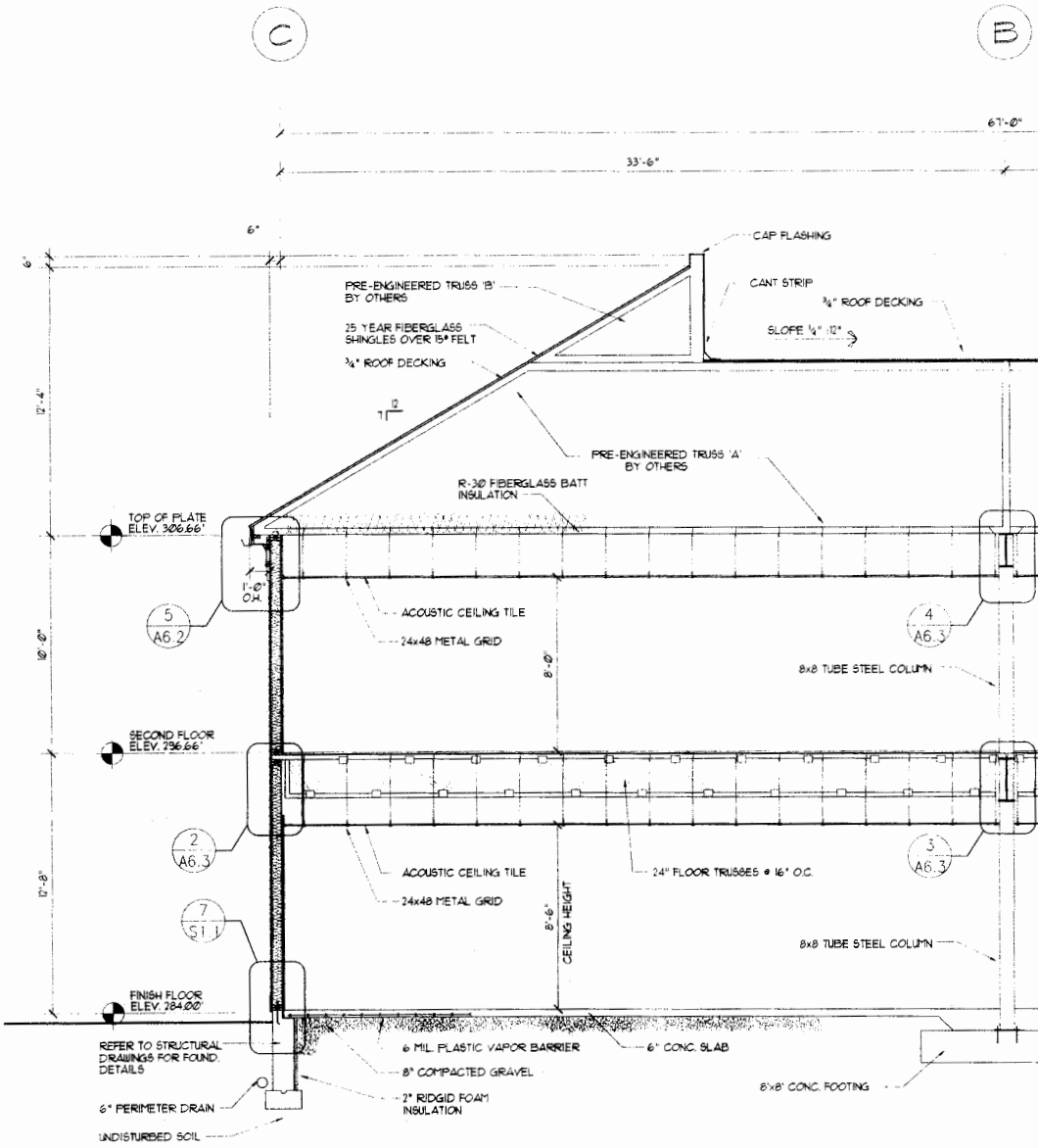
NO.	REVISION

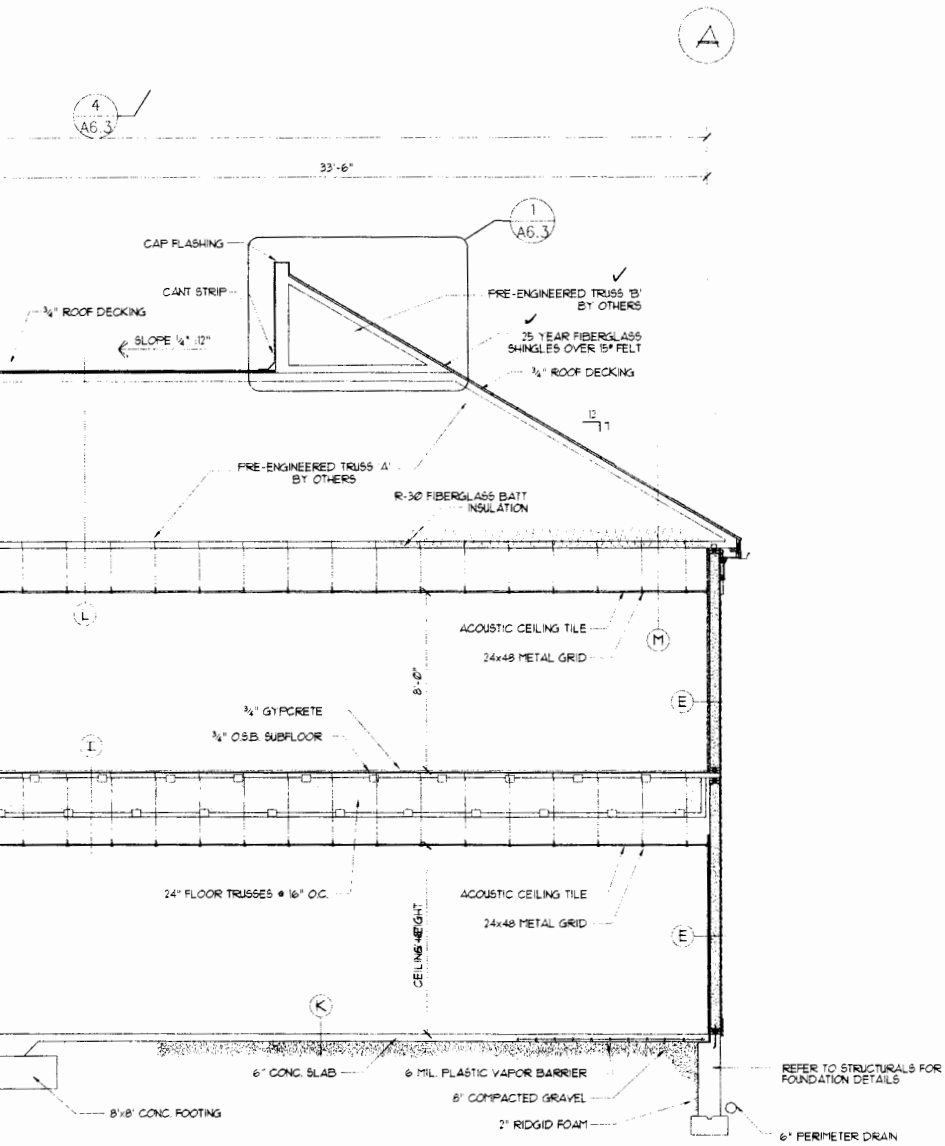
DATE: SEP. 18, 1998

SCALE: 1/8"=1'-0"

PROJECT NO.: 1626

SHEET NO.: A4.0


C
B
67'-0"
33'-6"
6"
6"
12'-4"
18'-0"
12'-8"
CAP FLASHING
CANT STRIP
¾" ROOF DECKING
SLOPE ¼" :12"
PRE-ENGINEERED TRUSS 'B' BY OTHERS
25 YEAR FIBERGLASS SHINGLES OVER 15# FELT
¾" ROOF DECKING
12
PRE-ENGINEERED TRUSS 'A' BY OTHERS
R-30 FIBERGLASS BATT INSULATION
TOP OF PLATE ELEV. 306.66'
1'-0" O.H.
5 A6.2
ACOUSTIC CEILING TILE
24x48 METAL GRID
8'-0"
4 A6.3
8x8 TUBE STEEL COLUMN
SECOND FLOOR ELEV. 296.66'
2 A6.3
3 A6.3
ACOUSTIC CEILING TILE
24x48 METAL GRID
24" FLOOR TRUSSES @ 16" O.C.
8'-6" CEILING HEIGHT
7 S1.1
8x8 TUBE STEEL COLUMN
FINISH FLOOR ELEV. 284.00'
REFER TO STRUCTURAL DRAWINGS FOR FOUND. DETAILS
6 MIL PLASTIC VAPOR BARRIER
6" CONC. SLAB
8" COMPACTED GRAVEL
2" RIDGID FOAM INSULATION
6" PERIMETER DRAIN
UNDISTURBED SOIL
8'x8' CONC. FOOTING



BUILDING SECTION A-A

SCALE: 1/4"=1'-0" (1 / A5.0)

Joseph D. LaGrasse & Associates Inc.
Architecture * Engineering * Land Planning * Interior Design
One Elm Square
Andover, Massachusetts 01810
(978) 470-3675

REGISTERED ARCHITECT — JOSEPH D. LaGRASSE — No. 4153 — REGISTERED — COMMONWEALTH OF MASSACHUSETTS

PREPARED FOR: RYAN DEVELOPEMENT

SHEET TITLE: BUILDING SECTION

PROJECT NAME: LITTLETON OFFICE PARK

PROJECT ADDRESS: GREAT ROAD LITTLETON, MA

McLaughlin

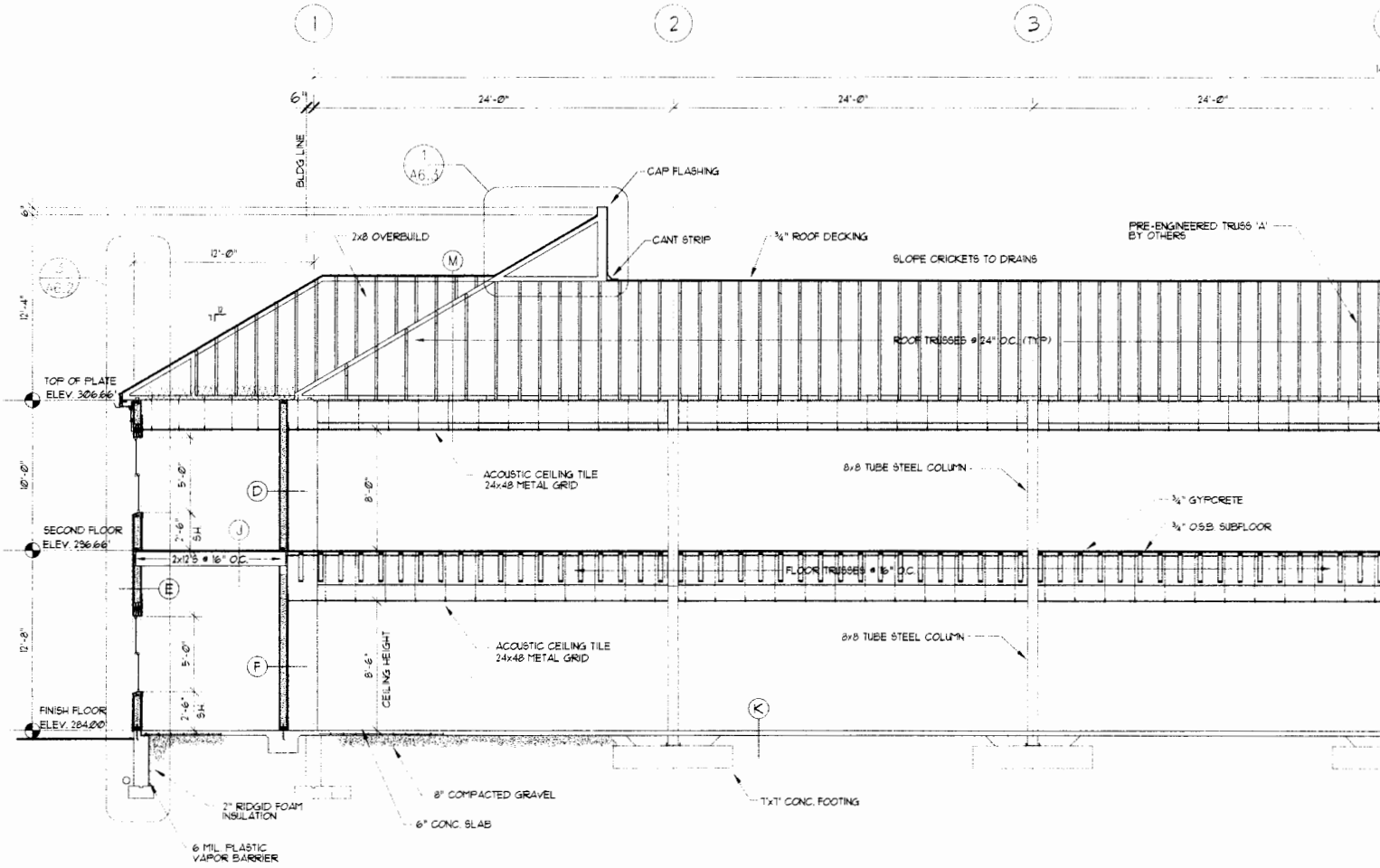
#	REVISION

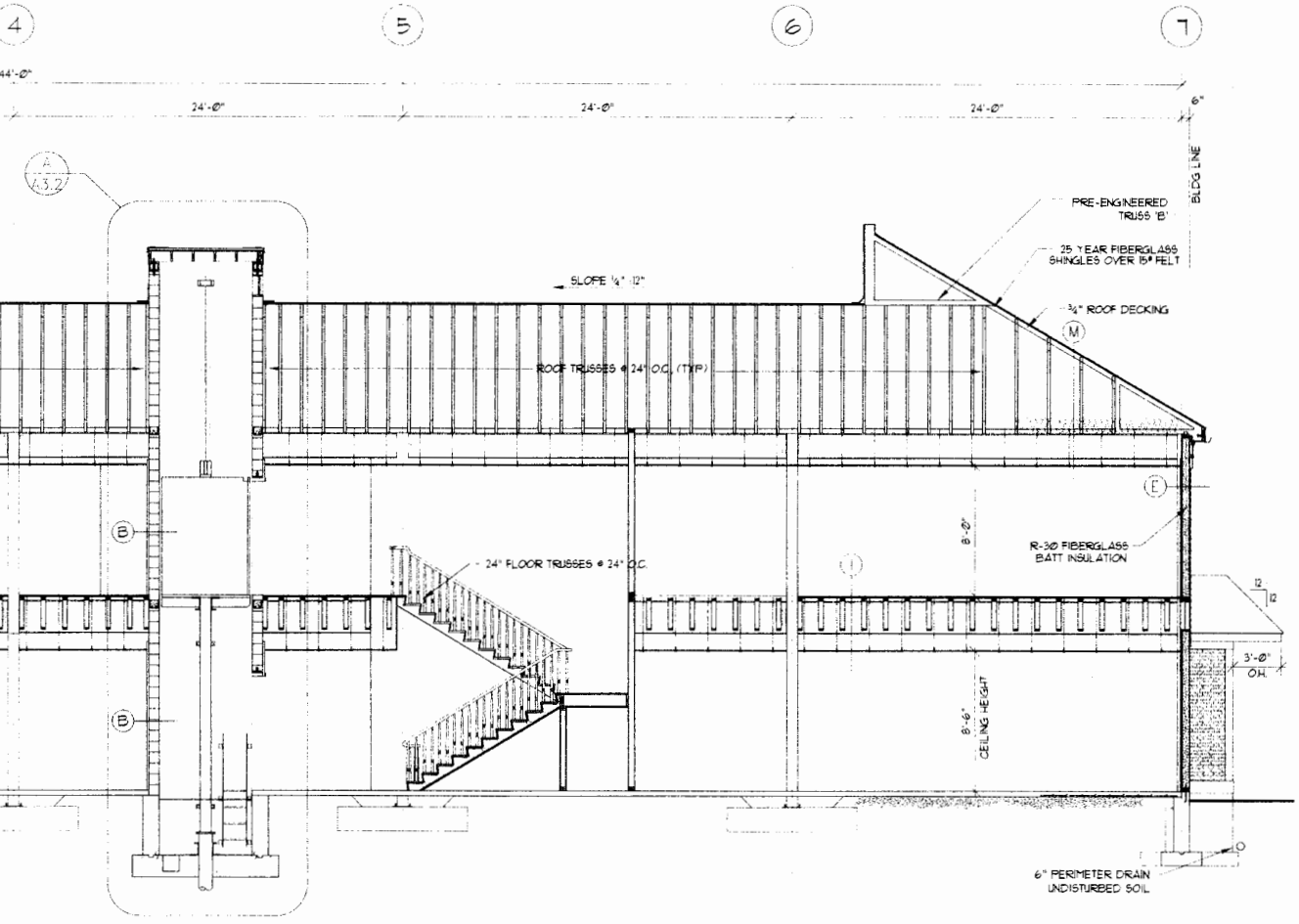
DATE: SEP. 18, 1998

SCALE: 1/8"=1'-0"

PROJECT NO.: 1626

SHEET NO.: A5.0


1
2
3
6"
24'-0"
24'-0"
24'-0"
BLDG. LINE
1
A6.3
CAP FLASHING
CANT STRIP
¾" ROOF DECKING
PRE-ENGINEERED TRUSS 'A'
BY OTHERS
SLOPE CRICKETS TO DRAINS
2x8 OVERBUILD
12'-0"
7"
12'-4"
ROOF TRUSSES @ 24" O.C. (TYP.)
TOP OF PLATE
ELEV. 306.66'
10'-0"
5'-0"
2'-6"
S.H.
8'-0"
ACOUSTIC CEILING TILE
24x48 METAL GRID
8x8 TUBE STEEL COLUMN
¾" GYPCRETE
¾" O.S.B. SUBFLOOR
SECOND FLOOR
ELEV. 296.66'
2x12'S @ 16" O.C.
FLOOR TRUSSES @ 16" O.C.
12'-8"
5'-0"
2'-6"
S.H.
8'-6"
CEILING HEIGHT
ACOUSTIC CEILING TILE
24x48 METAL GRID
8x8 TUBE STEEL COLUMN
FINISH FLOOR
ELEV. 284.00'
8" COMPACTED GRAVEL
6" CONC. SLAB
2" RIDGID FOAM
INSULATION
6 MIL. PLASTIC
VAPOR BARRIER
7'x7' CONC. FOOTING



BUILDING SECTION B-B (1 / A5.1)

SCALE: 1/8"=1'-Ø"

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Andover, Massachusetts 01810
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PREPARED FOR
RYAN DEVELOPEMENT

SHEET TITLE
BUILDING SECTION

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

McLaughlin

#	REVISION

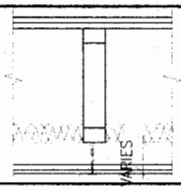
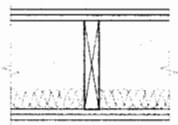
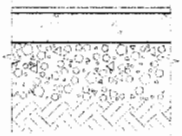
DATE
SEP. 18, 1998

SCALE
1/8"=1'-Ø"

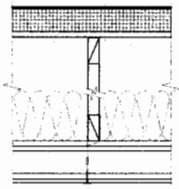
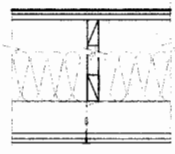
PROJECT NO.
1626

SHEET NO.
A5.1

FLOOR/CEILING CONDITIONS

TYPE	SECTION	MATERIALS
I		FINISH FLOOR 3/4" GYPCRETE 3/4" OSB 24" TRUSSES @ 16" O.C. 2" THERMAFIBER BETWEEN JOISTS SUSPENDED CEILING PANELS (2 X 4) AN GRID * SUBSTITUTE MINERAL WOOL FOR THERM
J		FINISH FLOOR 3/4" GYPCRETE 3/4" OSB WOOD JOIST 2" THERMAFIBER BETWEEN JOISTS 7/8" RESILIENT CHANNELS @ 16" O.C. 5/8" FIRECODE GYPSUM BOARD SOUND ATTENUATION BOARD * SUBSTITUTE MINERAL WOOL FOR THERM
K		FINISH FLOOR 6" CONCRETE SLAB (U.N.O) 8" COMPACTED PROCESSED GRAVEL 6 MIL. PLASTIC VAPOR BARRIER RECOMPACTED EXISTING SOIL SUITABLE FO COMPACTION

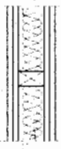
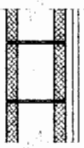
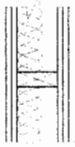
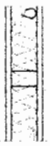
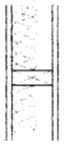
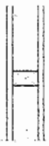
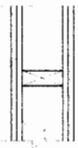
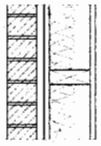
ROOF/CEILING CONDITIONS

TYPE	SECTION	MATERIALS
L		.060 EPDM ROOF MEMBRANE 1"RIGID INSULATION 3/4" PLYWOOD ROOF SHEATHING PRE-ENGINEERED ROOF TRUSS @ 24" O. 9" FRIBERGLASS BATT (R-30) VAPOR BARRIER SUSPENDED 2x4 CEILING GRID PANELS AND METAL GRID
M		ARCHITECTURAL SHINGLES 3/4" PLYWOOD ROOF SHEATHING PRE-ENGINEERED ROOF TRUSS @ 24" O. 2" THERMAL FIBER 9" FRIBERGLASS BATT VAPOR BARRIER SUSPENDED CEILING PANELS (2 X 4 LAY METAL GRID

	REMARKS
D METAL AFIBER	
AFIBER	
OR	

	REMARKS
.C.	
.C. IN) AND	

WALL ASSEMBLIES

TYPE	SECTION	MATERIALS	REMARKS
A		2 – 5/8" TYPE 'X' GYPSUM BOARD 2x4 STUD @ 16" O.C. (MIN) 2 – 5/8" TYPE 'X' GYPSUM BOARD 2" SOUND ATTENUATION BLANKET (MIN)	SOUND ATTENUATION BLANKETS CAN BE MINIMUM OF 2"
B		8" CMU WALL (2 HR RATED) 7/8" METAL CHANNEL 5/8" GYPSUM WALL BOARD	FURRING CHANNELS ARE TYPICALLY INSTALLED PERPENDICULAR TO GYPSUM BOARD SHEETS.
C		2 – 5/8" TYPE 'X' GYPSUM BOARD 2x6 STUD @ 16" O.C. SOUND ATTENUATION BLANKET 2 – 5/8" TYPE 'X' GYPSUM BOARD	INSULATE WITH SOUND ATTENUATION BLANKETS WHERE APPLICABLE
D		5/8" GYPSUM BOARD 2x4 STUD @ 16" O.C. (NON–BEARING) SOUND ATTENUATION BLANKET 5/8" GYPSUM BOARD	USE SOUND ATTENUATION BLANKET IN CORRIDOR AND TENANT WALLS.
E		CLAPBOARD SIDING w/ AIR INFILTRATION BARRIER 1/2" PLYWOOD SHEATHING 2x6 WOOD STUD @ 16" O.C. R–19 FIBERGLASS INSULATION VAPOR BARRIER 5/8" GYPSUM WALL BOARD	
F		5/8" FIRECODE GYPSUM WALL BOARD 2x6 WOOD @ 16" O.C. (BEARING) SOUND ATTENUATION BLANKET 5/8" FIRECODE GYPSUM WALL BOARD	BEARING WALLS USE 2x6 STUD CONSTRUCTION. USE SOUND ATTENUATION BLANKET IN CORRIDOR AND TENANT WALLS
G		5/8" GYPSUM WALL BOARD 2x4 WOOD @ 16" O.C. 5/8" GYPSUM WALL BOARD	USE SOUND ATTENUATION BLANKET IN CORRIDOR AND TENANT WALLS
H		5/8" MOISTURE RESISTENT GWB 2x6 WOOD @ 16" O.C. SOUND ATTENUATION BLANKETS 5/8" MOISTURE RESISTENT GWB	
N		BRICK VENEER 1" AIR SPACE AIR INFILTRATION BARRIER 1/2" PLYWOOD SHEATHING 2x6 WOOD STUD @ 16" O.C. R–19 FIBERGLASS INSULATION VAPOR BARRIER 5/8" GYPSUM WALL BOARD	

NOTES: ALL NON BEARING WALLS ARE TO EXTEND TO THE UNDERSIDE OF TRUSSES ABOVE. ALLOW 3/8" DEFLECTION SPACE BETWEEN TOP OF WALL AND TRUSS ABOVE.

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Andover, Massachusetts 01810
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PREPARED FOR
RYAN DEVELOPEMENT

SHEET TITLE
PARTITION, FLOOR, CEILING, AND ROOF ASSEMBLIES

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

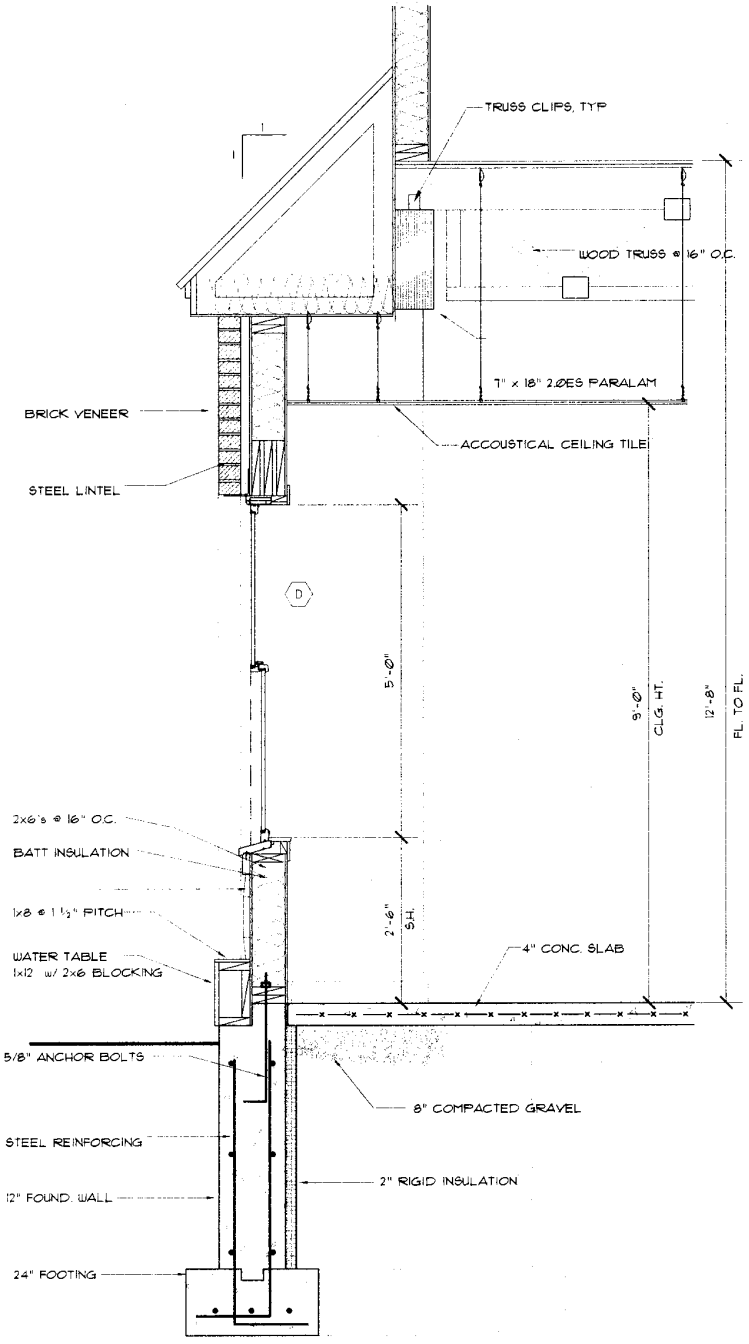
#	REVISION

DATE
SEP. 18, 1998

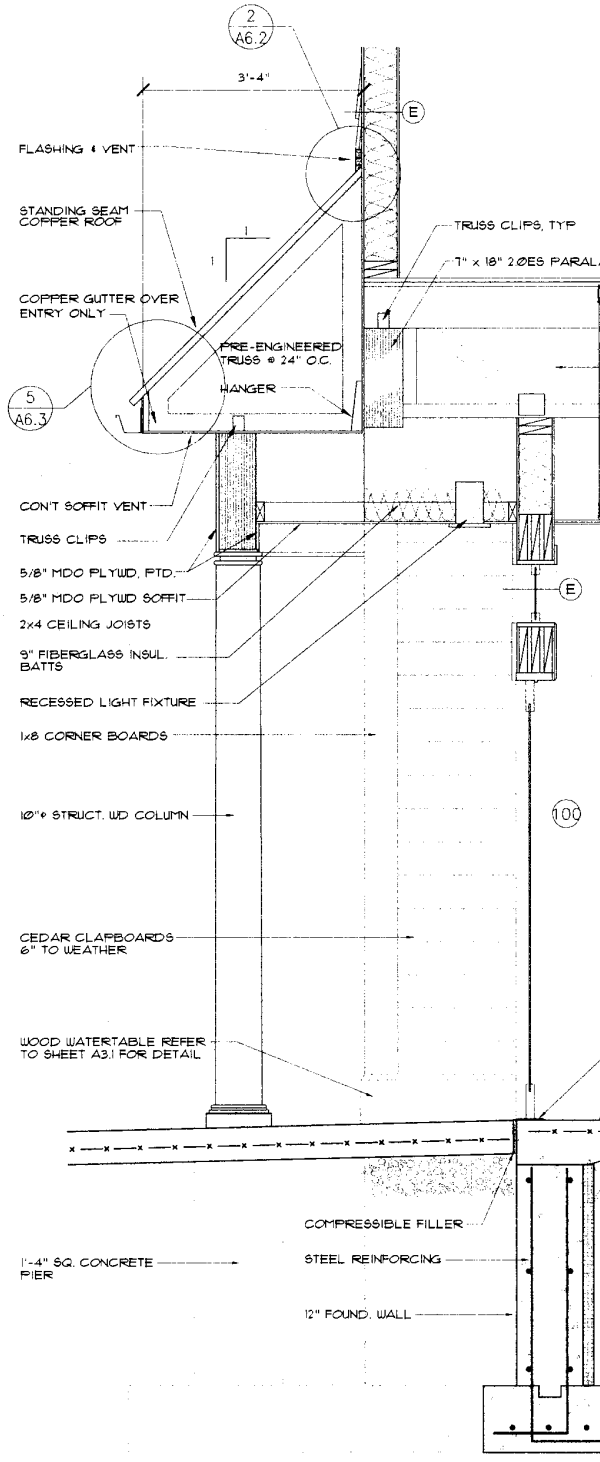
SCALE
N.T.S.

PROJECT NO.
1626

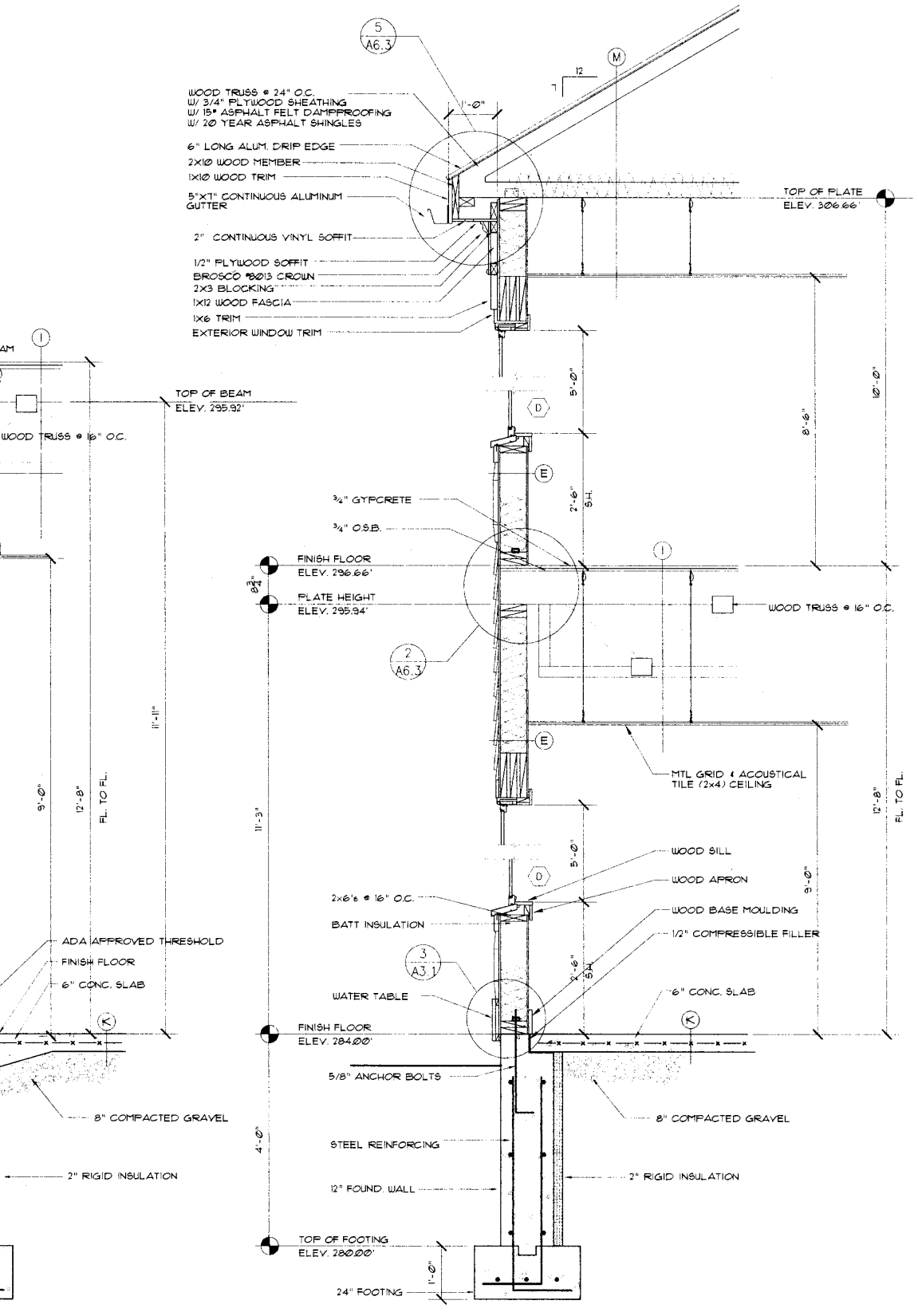
SHEET NO.
A6.0



WALL SECTION @ BAY (1 / A6.1)
SCALE: 3/4"=1'-0"



WALL SECTION @ EN
SCALE:



NTRY 2 A6.1
3/4"=1'-0"

WALL SECTION 3 A6.1
SCALE: 3/4"=1'-0"

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PREPARED FOR
RYAN DEVELOPEMENT

SHEET TITLE
WALL SECTIONS

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

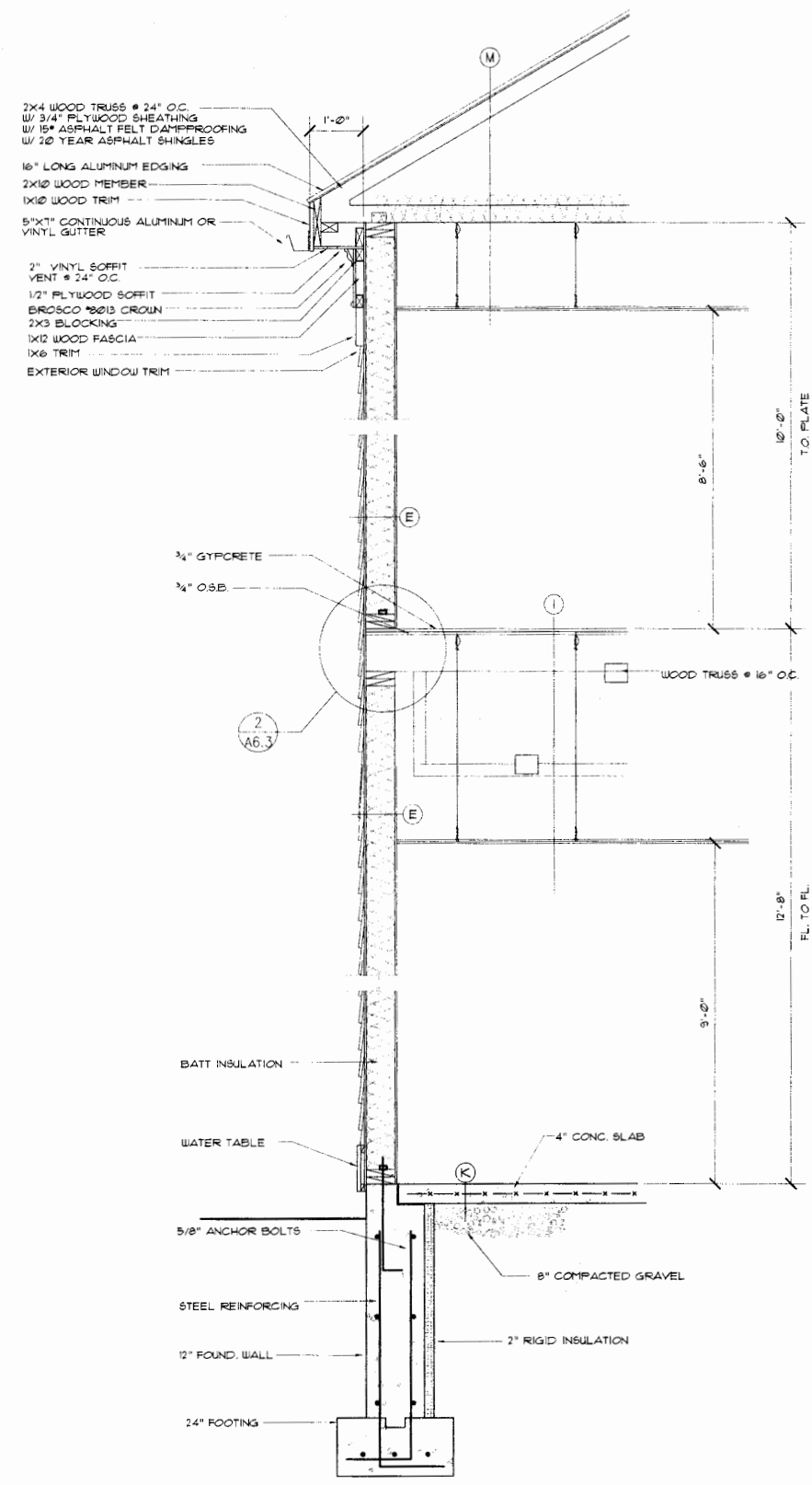
REVISION
#

DATE
SEP. 18, 1998

SCALE
AS NOTED

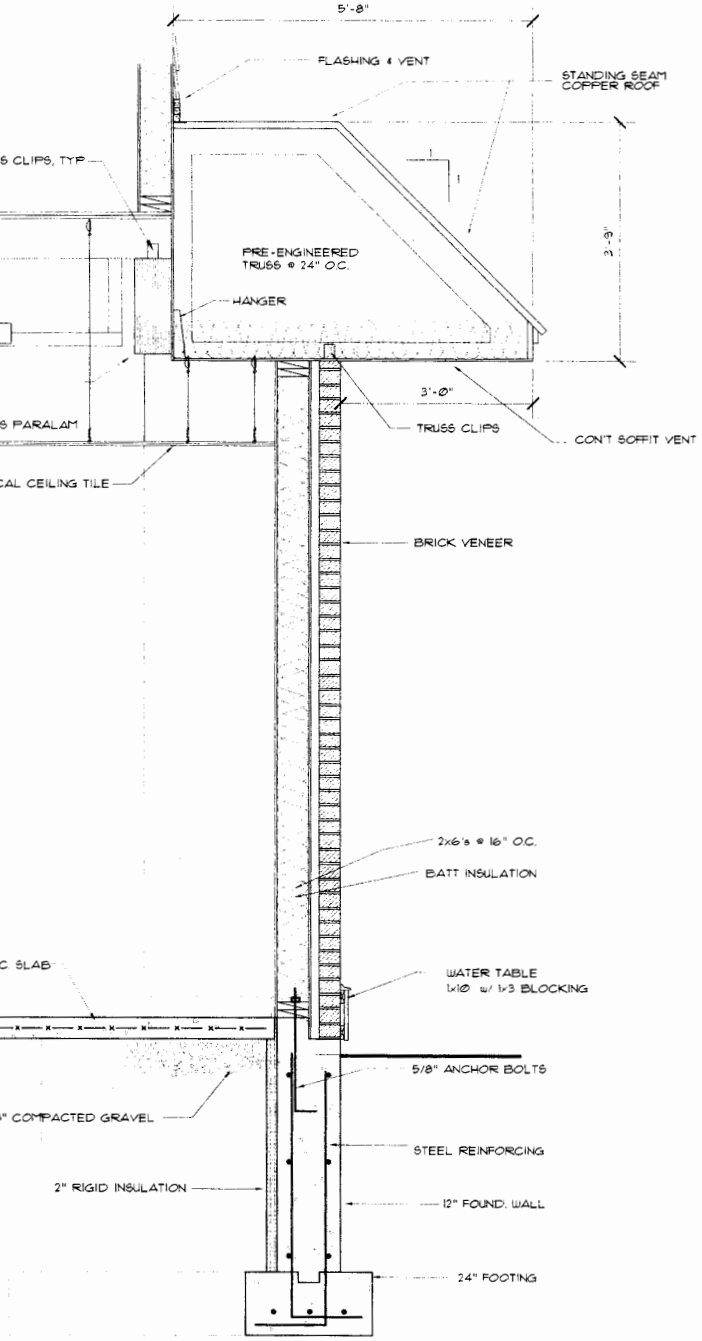
PROJECT NO.
1626

SHEET NO.
A6.1



WALL SECTION 4 A6.2

SCALE: 3/4"=1'-0"



WALL SECTION @ A.T.M. (5 / A6.2)

SCALE: 3/4"=1'-0"

REGISTERED ARCHITECT — JOSEPH D. LAGRASSE No. 4153 ANDOVER, MASS. — COMMONWEALTH OF MASSACHUSETTS

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PREPARED FOR: RYAN DEVELOPEMENT

SHEET TITLE: WALL SECTIONS

McLaughlin

PROJECT NAME: LITTLETON OFFICE PARK

PROJECT ADDRESS: GREAT ROAD LITTLETON, MA

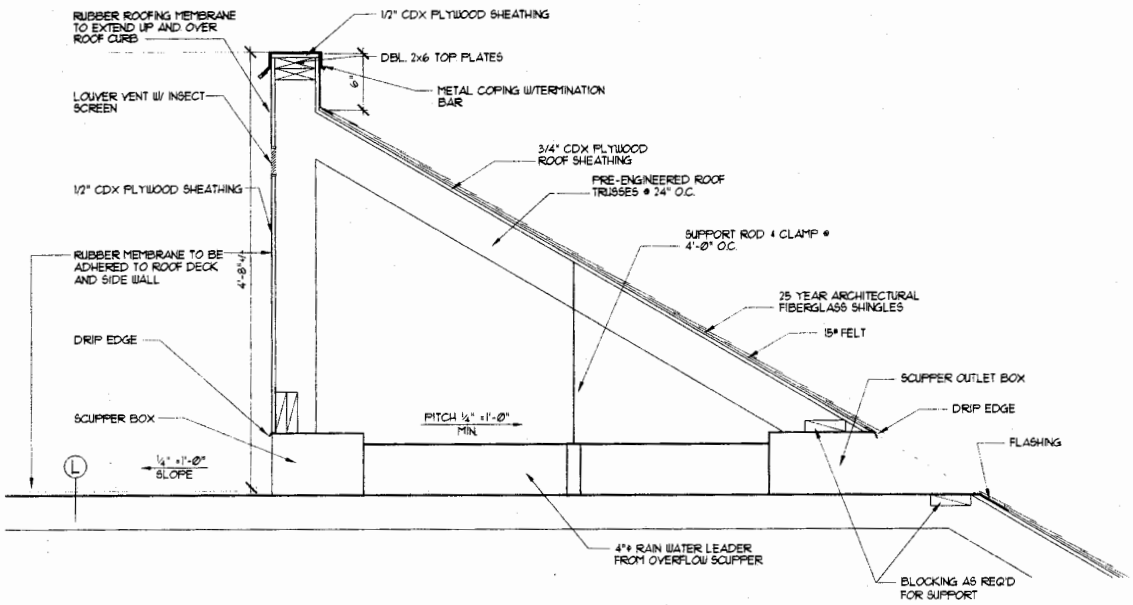
#	REVISION

DATE: SEP. 18, 1998

SCALE: AS NOTED

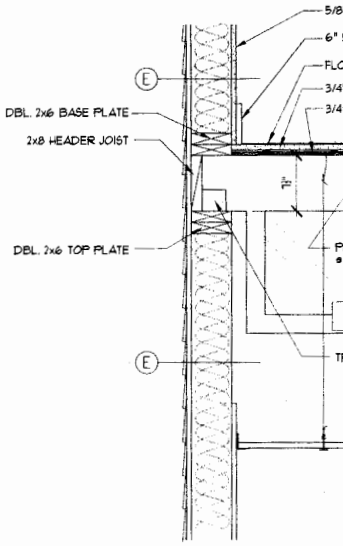
PROJECT NO.: 1626

SHEET NO.: A6.2

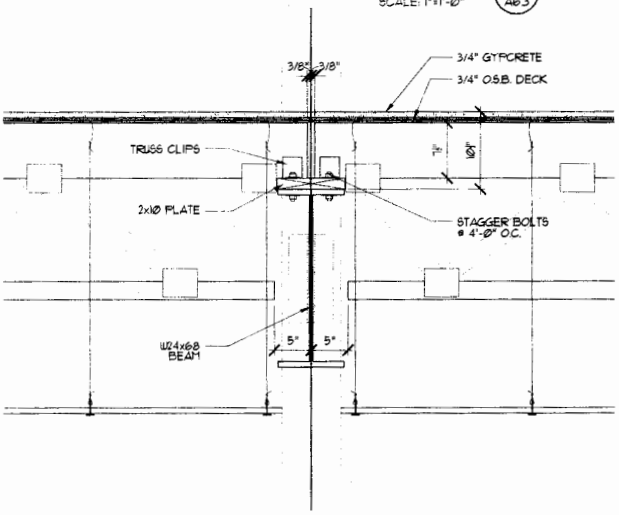


SCUPPER OUTLET DETAIL (1/A6.3)

SCALE: 1"=1'-0"

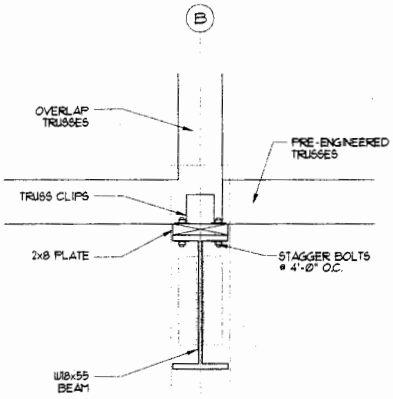


JOIST @ EXTERIO



FLOOR TRUSSES @ BEAM (3/A6.3)

SCALE: 1"=1'-0"



ROOF TRUSSES @ BEAM (4/A6.3)

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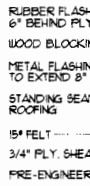


FLASH

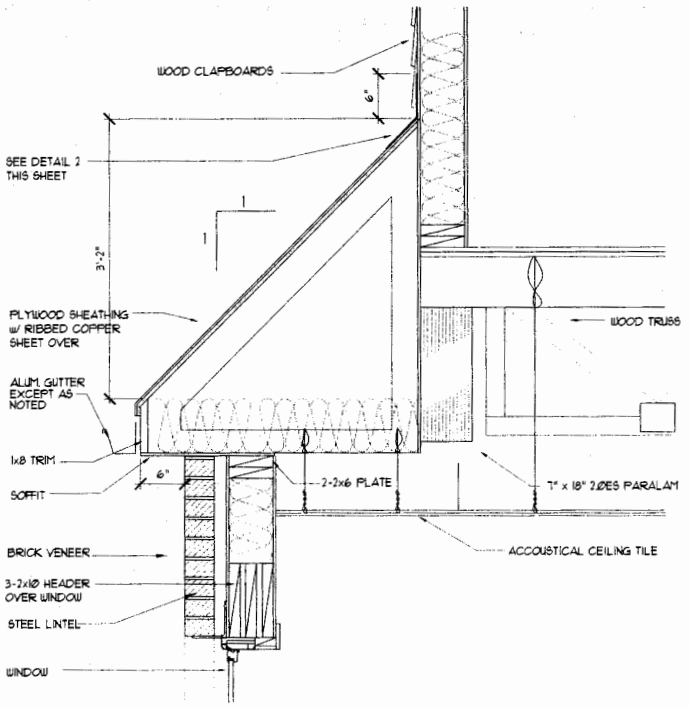
" GWB
BASE MOULDING
OOR COVERING
" GYPCRETE
" O.S.B. DECKING

RE-ENGINEERED TRUSS
16" O.C.

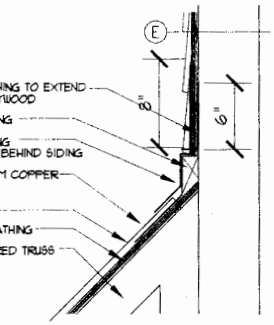
RUSS CLIPS

1

R WALL
SCALE: 1"=1'-0"
2
A6.3



FLASHING DETAIL
SCALE: 1"=1'-0"
5
A6.3



HING @ COPPER ROOF
SCALE: 1 1/2"=1'-0"
2
A6.2

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PREPARED FOR
RYAN DEVELOPEMENT

SHEET TITLE
DETAILS

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

#	REVISION

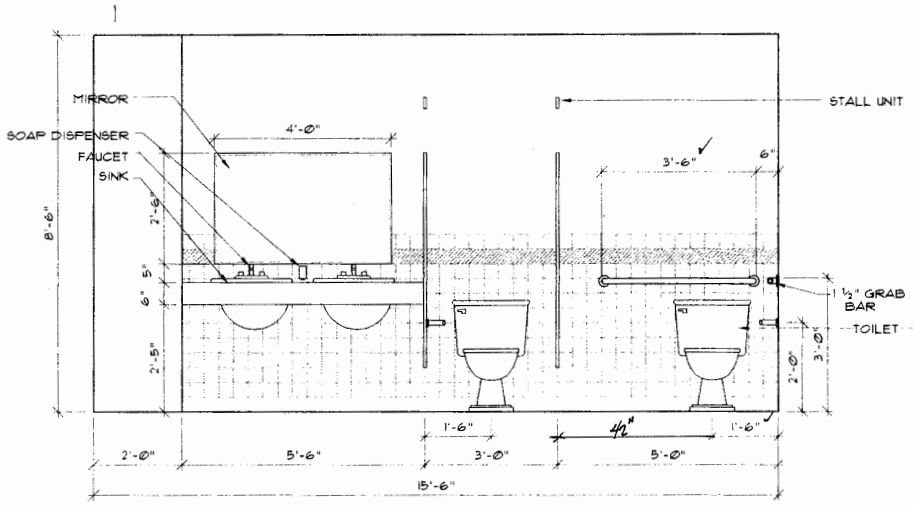
DATE
SEPT. 18, 1998

SCALE
AS NOTED

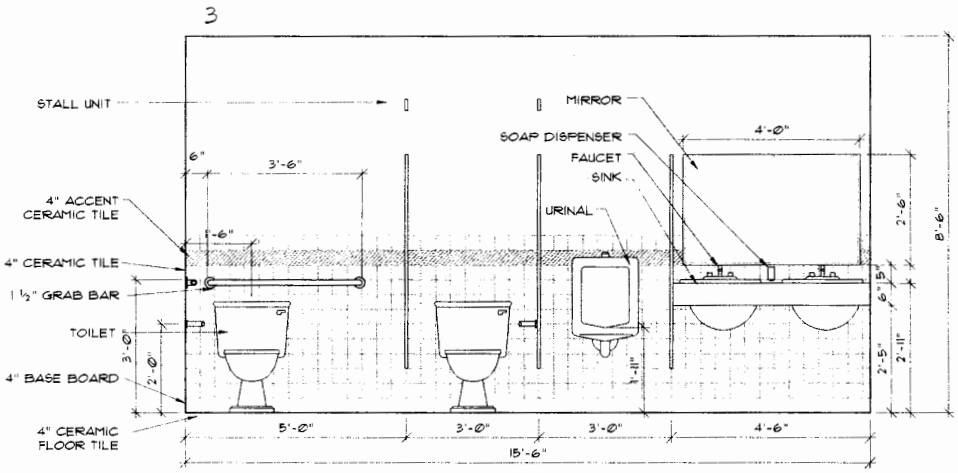
PROJECT NO:
1626

SHEET NO.
A6.3

WOMEN'S RESTROOM

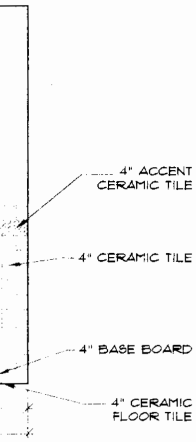


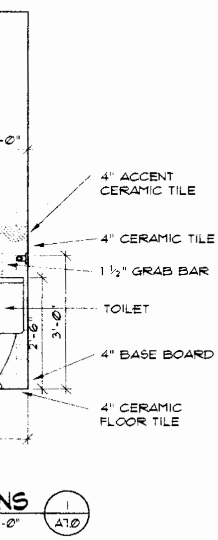
MEN'S RESTROOM



RESTROOM ELEVATIO

SCALE 1/2"





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PREPARED FOR
RYAN DEVELOPEMENT

SHEET TITLE
INTERIOR ELEVATIONS

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

McLaughlin

#	REVISION

DATE
SEP. 18, 1998

SCALE
AS NOTED

PROJECT NO.
1626

SHEET NO.
A7.0

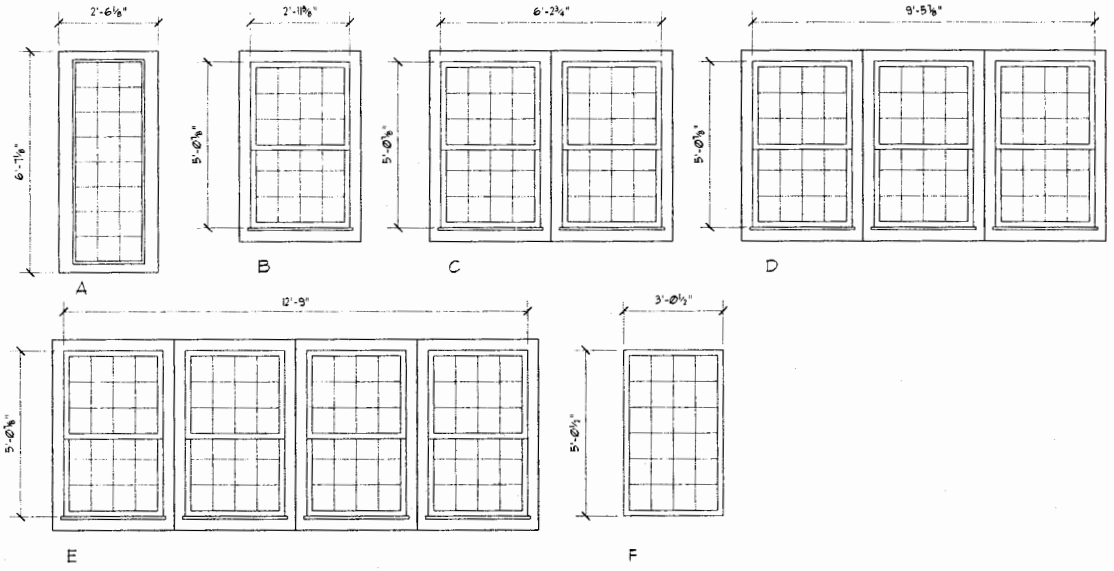
DOOR SCHEDULE

DOOR #	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	DOOR SIZE THICK	DOOR TYPE	DOOR MAT'L	DOOR LABEL	DOOR HRDW.	FRAME TYPE	FRAME MAT'L	REMARKS
100	6'-0"	6'-8"	1 3/8"	A	WOOD			1	WOOD	
101	3'-0"	6'-8"	1 3/8"	B	WOOD			2	WOOD	
102	3'-0"	7'-0"	1 3/4"	C	STEEL			3	P.M.	FIRE RATED DOOR
103	3'-0"	7'-0"	1 3/4"	C	STEEL			3	P.M.	FIRE RATED DOOR
104	3'-0"	6'-8"	1 3/8"	B	WOOD			2	WOOD	
105	3'-0"	6'-8"	1 3/8"	D	WOOD			4	WOOD	
106	3'-0"	6'-8"	1 3/8"	D	WOOD			4	WOOD	
107	3'-0"	6'-8"	1 3/8"	B	WOOD			2	WOOD	
108	3'-0"	6'-8"	1 3/8"	B	WOOD			2	WOOD	
109	3'-0"	7'-0"	1 3/4"	C	STEEL			3	P.M.	FIRE RATED DOOR
110	3'-0"	6'-8"	1 3/8"	B	WOOD			2	WOOD	
201	3'-0"	6'-8"	1 3/8"	B	WOOD			2	WOOD	
202	3'-0"	7'-0"	1 3/4"	C	STEEL			3	P.M.	FIRE RATED DOOR
203	3'-0"	6'-8"	1 3/8"	B	WOOD			2	WOOD	
204	3'-0"	6'-8"	1 3/8"	B	WOOD			2	WOOD	

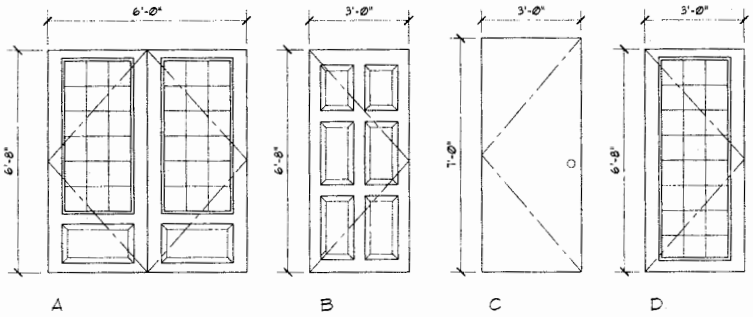
WINDOW SCHEDULE

WINDOW No.	UNIT MODEL	UNIT DIMENSION	ROUGH OPENING	HEAD HEIGHT	REMARKS
A		2'-6 1/8" x 6'-7 1/8"	2'-7" x 6'-8"	6'-8"	
B		2'-11 5/8" x 5'-0 7/8"	3'-0 1/8" x 5'-1 1/4"	7'-6"	
C		6'-2 3/4" 6'-3 1/4"	6'-3 1/4" x 5'-1 1/4"	7'-6"	
D		9'-5 7/8" x 9'-6 7/8"	9'-6 7/8" x 5'-1 1/4"	7'-6"	
E		12'-9" x 12'-10 1/2"	12'-10 1/2" x 5'-1 1/4"	7'-6"	
F		2'-11 15/16" x 4'-11 1/8"	3'-0 1/2" x 5'-0 1/2"	7'-6"	

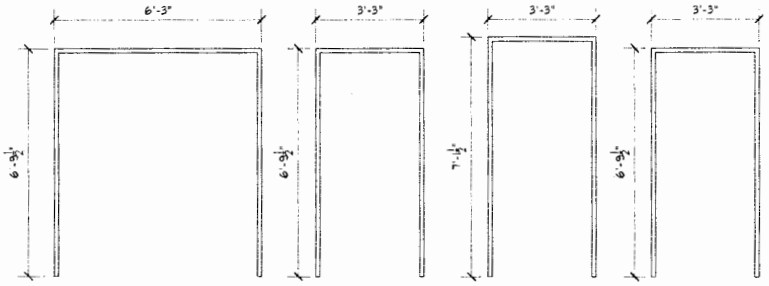
WINDOW TYPES

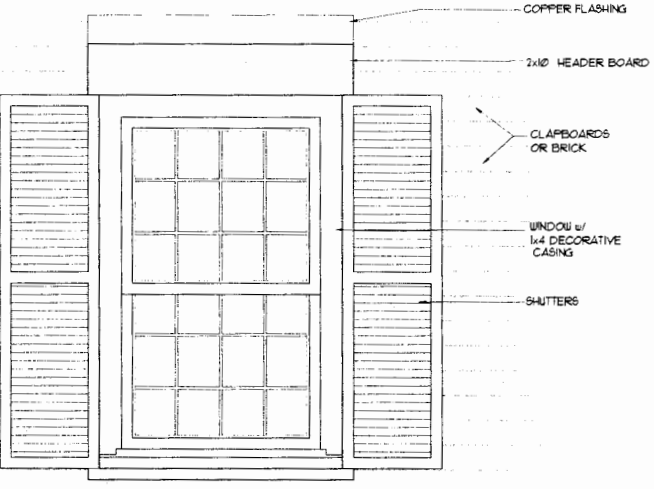


DOOR TYPES

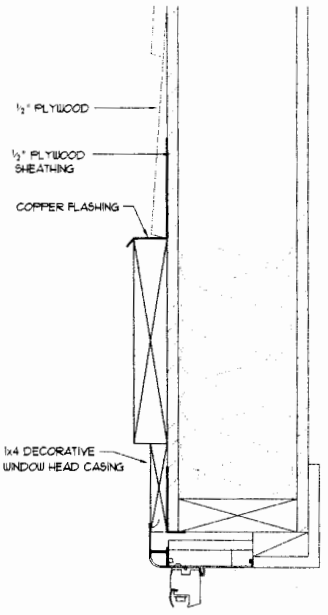


FRAME TYPES





WINDOW DETAIL 5 A9.Ø
SCALE: ¾"=1'-Ø"



FLASHING DETAIL 6 A9.Ø
SCALE 3"=1'-Ø"

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REGISTERED ARCHITECT — D. LAGRASSE — No. 4353 METHUEN, MASS. — COMMONWEALTH OF MASSACHUSETTS

PREPARED FOR: RYAN DEVELOPEMENT

PROJECT NAME: LITTLETON OFFICE PARK

PROJECT ADDRESS: GREAT ROAD LITTLETON, MA

SHEET TITLE: DOOR & WINDOW SCHEDULES

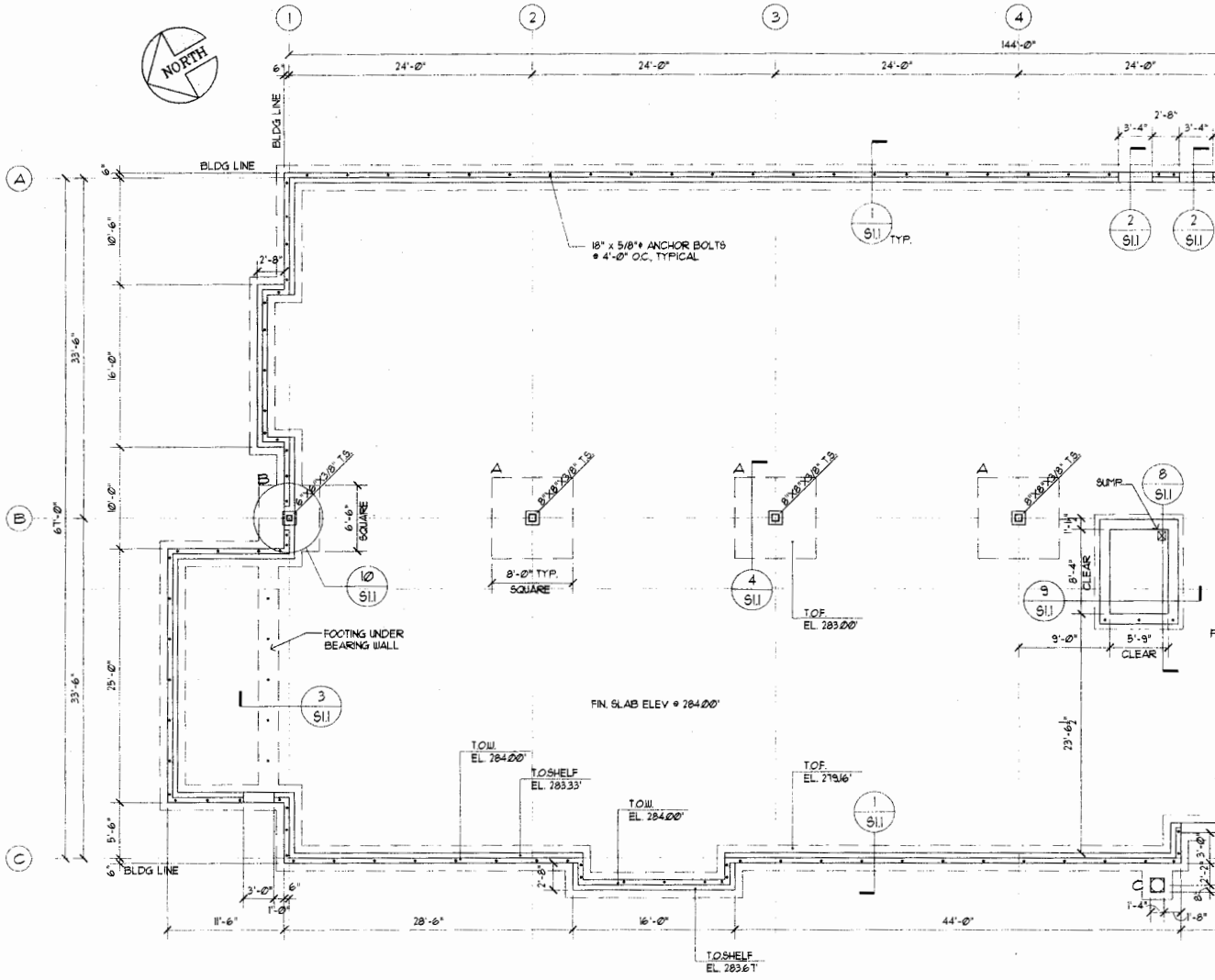
#	REVISION

DATE: SEP. 18, 1998

SCALE: 1/8"=1'-Ø"

PROJECT NO.: 1626

SHEET NO.: A9.0



NOTES:

C1 All concrete shall have a 28 day strength of 3000 PSI with 3/4 inch stone aggregate, with 6% entrained air for exposed concrete.

C2 All reinforcing shall be deformed bars of new billet steel conforming to ASTM A615, Grade 60. All welded wire fabric shall conform to ASTM A185.

C3 All reinforcement should be securely held in place while placing concrete if required, additional bars or stirrups shall be provided by the contractor to furnish support for all new bars.

C4 Vertical construction joint in walls shall be used only when unavoidable and shall be located at least 1'-0" from any column line of wall opening for foundation walls.

C5 Minimum concrete cover for reinforcing steel shall be 3/4 inch for walls. All concrete exposed to weather of earth fill shall have minimum concrete cover of 2 inch for bars larger than #5, 1-1/2 inch for #5 bars or smaller and 3 inch for all concrete placed against earth. For all other concrete minimum cover shall be 1-1/2 inch for all new bars.

C6 All reinforcement bars shall be lapped as per embedment and splice length as recommended by ACI 318-77. LAP wall top reinforcement at center of span. LAP wall footing and wall bottom reinforcement at supports. LAP wall inside face horizontal reinforcement at MID-SPAN. Terminate continuous bars at discontinuous ends with standard hook.

C7 Reinforced concrete design is ultimate strength design as per ACI building code (ACI 318-77).

C8 All plumbing slots shall be filled with concrete to same depth as the slab after pipings installed, except as noted.

C9 No horizontal construction joints are to be made in slabs and walls.

C10 Shoring shall remain in place until concrete has attained adequate strength to withstand the superimposed loads without any overstress.

C11 Mixing , placing, curing, etc., of concrete shall conform to the latest code ACI Specifications and Standards.

C12 Include all spacer, chairs, bolsters, ties and other devices necessary for properly placing, spacing, supporting and fastening reinforcement in place. (Metal accessories shall be galvanized where legs will be exposed in finished concrete surfaces.) Accessories shall conform to requirements of the concrete reinforcing steel institute (CRSI) "Manual of standard Practice for Reinforced Concrete Construction." Chairs and other accessories fabricated from concrete, ceramic or plastic may be used & to be installed by the contractor.

C13 Contractor shall verify dimensions and locations of all slots, pipe sleeves, etc. as required by other trades before concre is poured. These items to be installed by contractor.

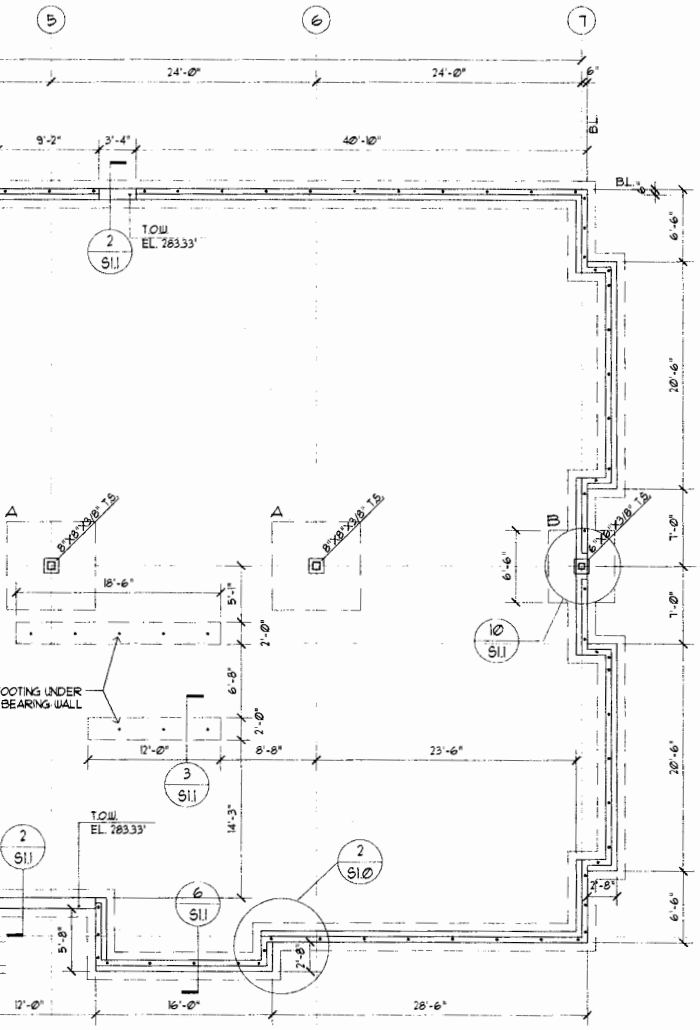
C14 Special attention is directed to the requirement that the contractor must adjust the shoring, using surveying instruments, during and immediately after the placing of concrete for walls and slabs. This adjustment must not be attempted after the initial set of the concrete.

C15 Contractor shall submit drawings showing intended pouring sequence and location of construction joints to the engineer for approval.

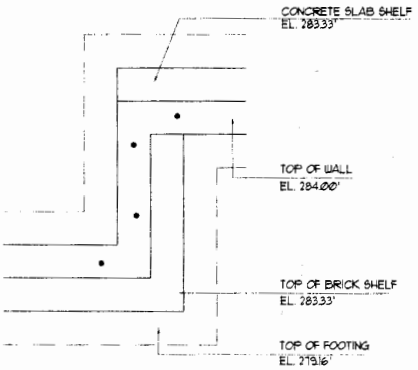
C16 Center lines of footings, walls, columns and beams shall be same unless otherwise noted.

C17 Representative test cylinders will be taken from the concrete as recommended by ACI Standards. Each cylinder will be identified by a letter or number, or a combination of the two, in consecutive order. These cylinders shall be made, aged and tested as specifie

C18 Top of concrete foundations shall be trowelled smooth and shall be within 1/8" of Finish Floor.



FIRST FLOOR PLAN (1 / A1.0)
SCALE: 1/8"=1'-0"



FOUNDATION WALL DETAIL (2 / S1.0)
SCALE: 3/4"=1'-0"

F1 All footings shall bear on undisturbed soil with a minimum bearing capacity of 1.5 TSF where possible. Where ledge is to be removed a minimum of six inches of compacted gravel is required below footings and slab on grade.

F2 Contractor is responsible to adequately protect all excavation slopes.

F3 No backfilling against foundation walls shall be done until 28 days after pouring concrete.

F4 In no case shall bulldozers or other heavy equipment be permitted closer than 6'-0" from any foundation.

F6 All backfilled areas which shall receive slabs on ground shall be compacted layer by layer (12" MAX.) lifts to at least 95% of maximum density at an optimum moisture content, as determined by the modified AASHO Compaction Test.

FOOTING & PIER SCHEDULE		
A	8'-0" SQ. x 16"	15# 5's EW BOT
B	6'-6" SQ. x 16"	9# 5's EW BOT
C	3'-0" SQ. x 16"	4# 7's EW BOT

DESIGN DATA:	
ROOF SNOW LOAD	30 PSF
FLOOR LIVE LOADS	
OFFICE AREAS	80 PSF
CORRIDORS	100 PSF
WIND AND SEISMIC	AS PER MASS. STATE CODE
SOIL BEARING	2 TONS / SF

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PREPARED FOR
RYAN DEVELOPEMENT

SHEET TITLE
FOUNDATION PLAN

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

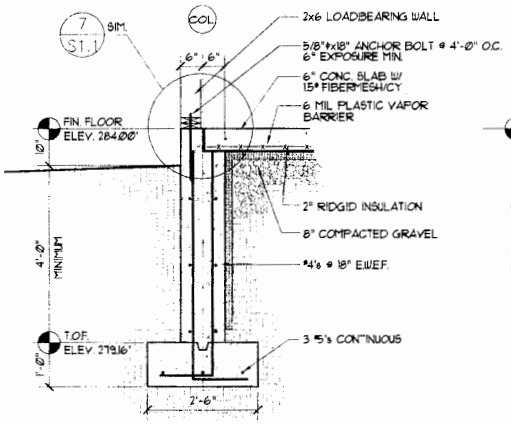
#	REVISION
1	08/21/98
2	09/15/98 TOTAL SHEET

DATE
JULY 30, 1998

SCALE
1/8" = 1'-0"

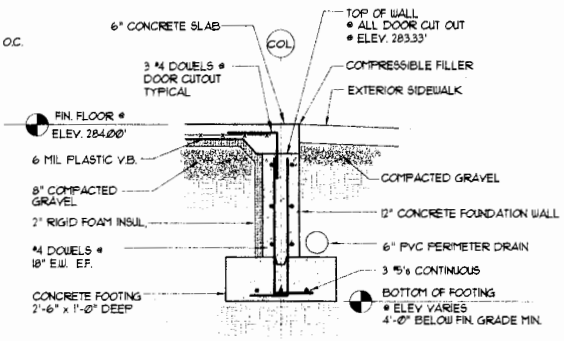
PROJECT NO.
1626

SHEET NO.
S1.0



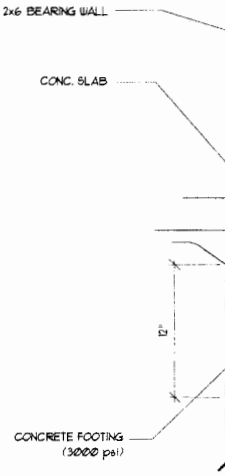
FOUNDATION SECTION

SCALE: 1/2"=1'-Ø"

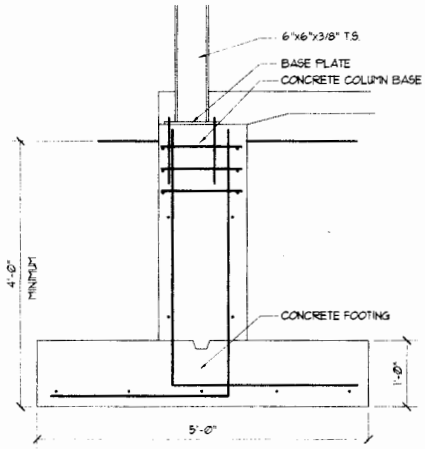


DOOR CUTOUT SECTION

SCALE: 1/2"=1'-Ø"

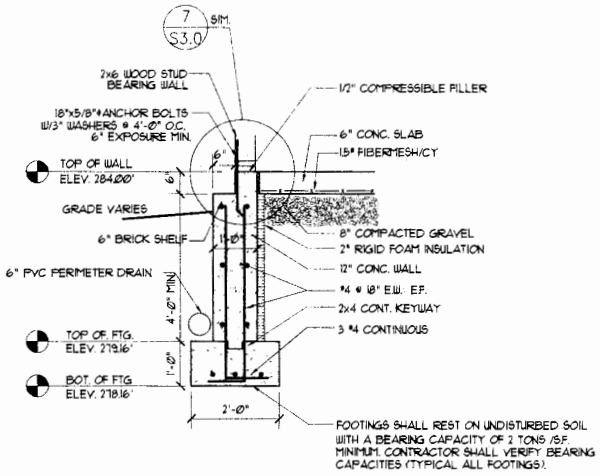


FOOT



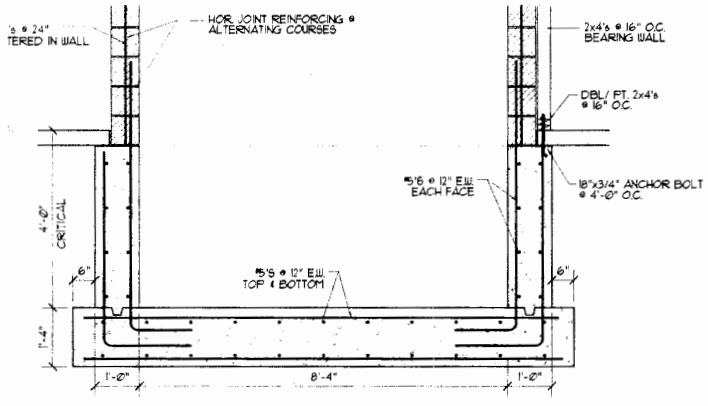
COLUMN FOOTING

SCALE: 3/4"=1'-Ø"



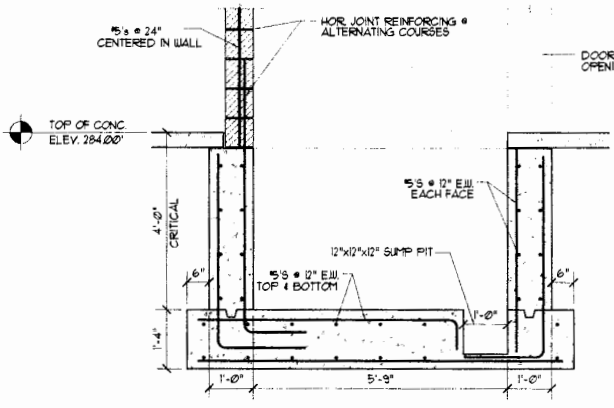
BRICK SHELF SECTION

SCALE: 1/2"=1'-Ø"



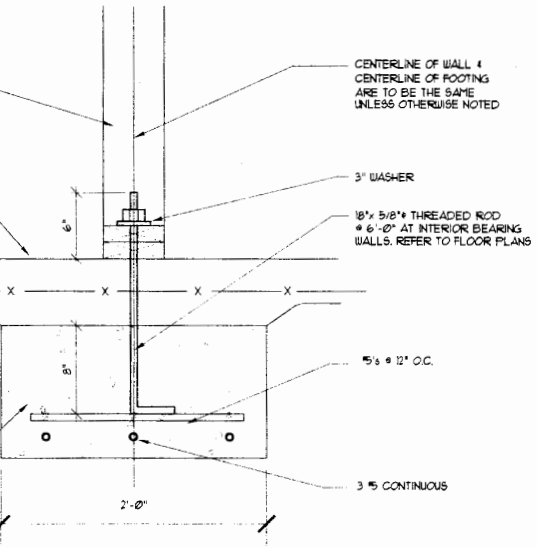
ELEVATOR PIT SECTION

SCALE: 3/4"=1'-Ø"

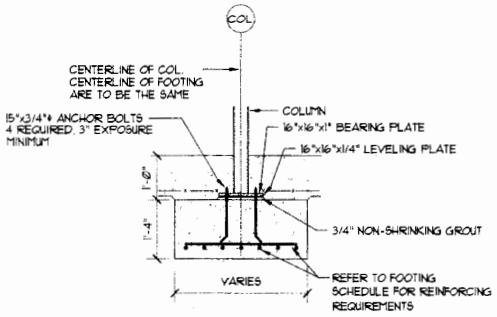


ELEVATOR PIT SECTION

SCALE: 3/4"=1'-Ø"



TING @ INTERIOR WALL 3 / S1.1
SCALE: 1 1/2"=1'-Ø"



COLUMN & FOOTING SECTION 4 / S1.0
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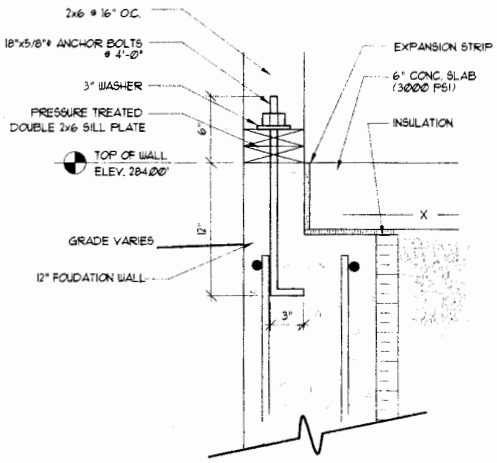
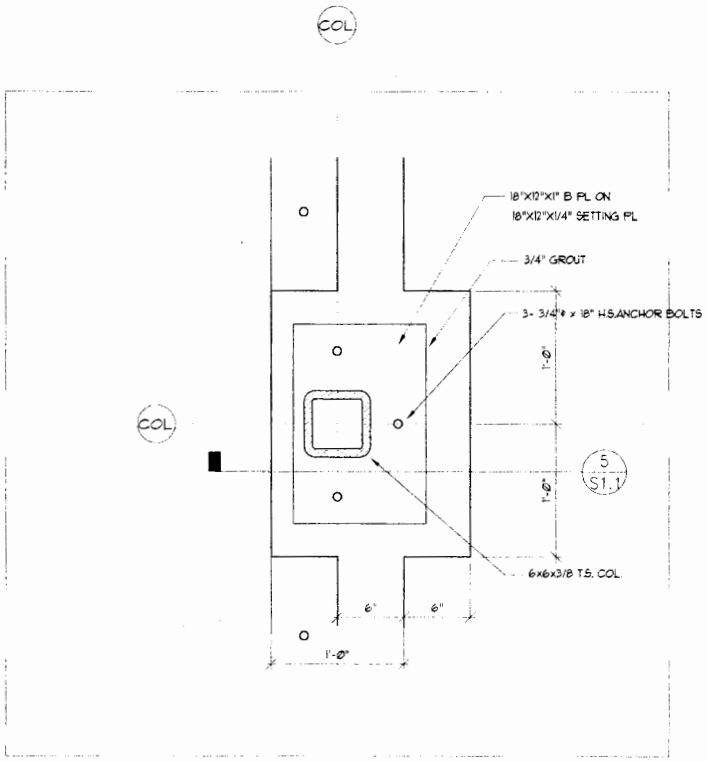
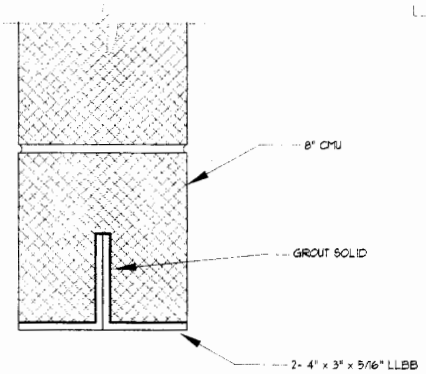


FOUNDATION DETAIL 7 / S1.1
SCALE: 1 1/2"=1'-Ø"



COLUMN & PLATE DETAIL 10 / S1.1
SCALE: 1 1/2"=1'-Ø"



LINTEL @ ELEVATOR DOOR 11 / S1.1
SCALE: 3"=1'-Ø"

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PREPARED FOR
RYAN DEVELOPEMENT

SHEET TITLE
FOUNDATION DETAILS & SECTIONS

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

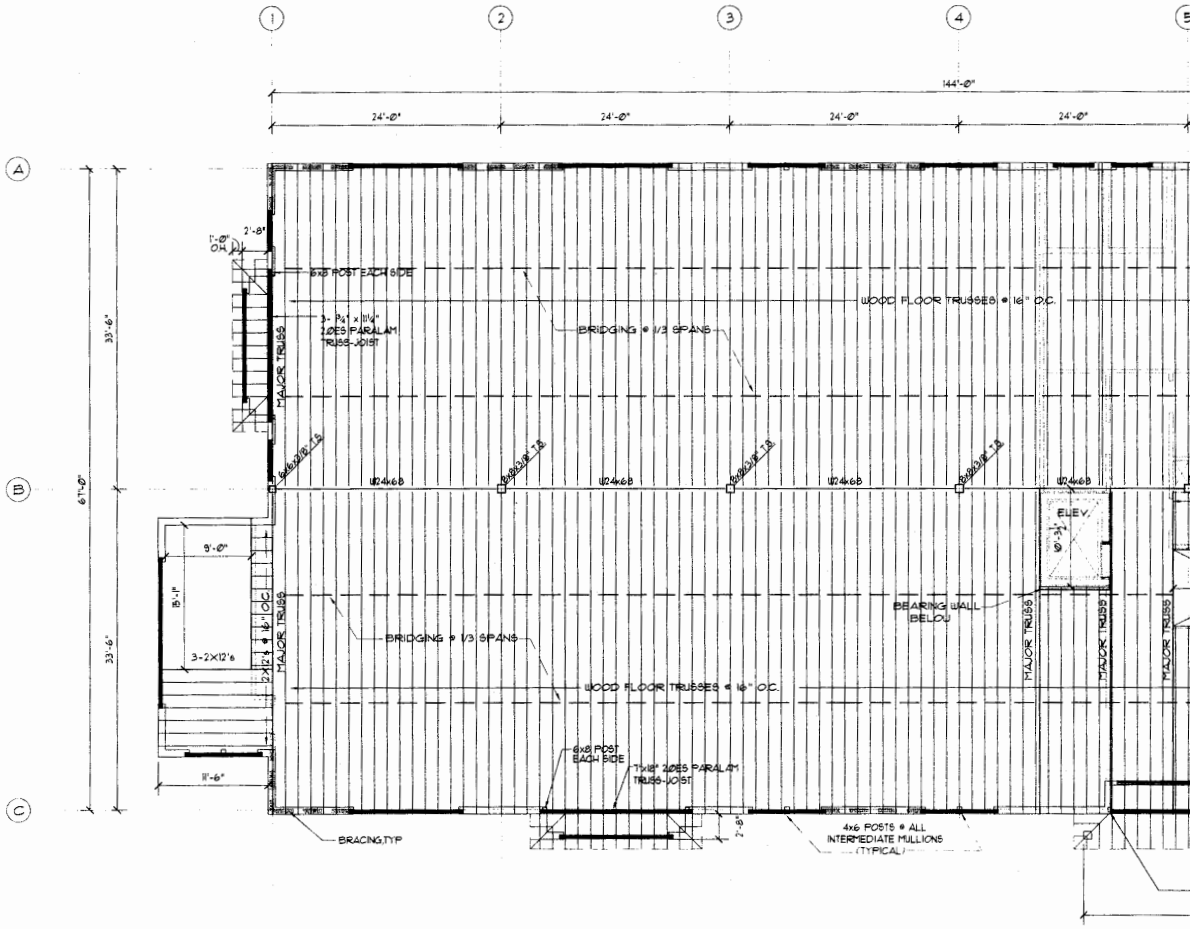
REVISION	
1	08/21/98
2	09/15/98 TOTAL SHEET

DATE
JULY 30, 1998

SCALE
AS NOTED

PROJECT NO.
1626

SHEET NO.
S1.1



WOOD AND PLASTICS

GENERAL

1.1. GENERAL CONDITIONS APPLY TO THIS DIVISION.

1.2. SCOPE:
- a. INCLUDED -
  1) FURNISH LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR COMPLETION OF WORK UNLESS INDICATED OR NOTED OTHERWISE.

1.3. LUMBER & PLYWOOD
- a. GRADING -
  1) IN ACCORD WITH PS 20-70, ANSI A 191.1-1974, AND NATIONAL GRADING RULES FOR SOFTWOOD DIMENSION LUMBER AND BEARING GRADE STAMP OF WWPA, SPIB, A2A, OR OTHER ASSOCIATION RECOGNIZED BY THE AMERICAN LUMBER STANDARDS COMMITTEE.
- b. GRADE MARKING -
  1) ALL SPECIES OF LUMBER, PLYWOOD, AND STANDARD GLUED LAMINATED LUMBER SHALL BE IDENTIFIED BY A GRADE MARK OR A CERTIFICATE OF INSPECTION ISSUED BY AN APPROVED LUMBER GRADING OR INSPECTION BUREAU OR AGENCY LISTED ABOVE.

1.4. EXECUTION:
- a. FRAME, ANCHOR, TIE, AND BRACE MEMBERS OR PARTS TO DEVELOP STRENGTH AND RIGIDITY NECESSARY FOR PURPOSES FOR WHICH THEY ARE USED.
- b. PREPARATION, FABRICATION, AND INSTALLATION OF WOOD MEMBERS AS WELL AS GLUES AND MECHANICAL DEVICES FOR FASTENING THEM SHALL CONFORM TO GOOD ENGINEERING PRACTICES.

1.5. PROTECTION:
- a. PROTECT LUMBER AND PLYWOOD AND KEEP UNDER COVER IN TRANSIT AND AT JOB SITE.
- b. DO NOT DELIVER MATERIAL UNDULY LONG BEFORE IT IS REQUIRED.
- c. STORE ON LEVEL RACKS AND KEEP FREE OF GROUND TO AVOD WARPING. STACK TO INSURE PROPER VENTILATION AND DRAINAGE.

1.6. SEASONING:
- a. MOISTURE OF LUMBER TWO INCHES OR LESS IN THICKNESS SHALL NOT EXCEED 19%.
- b. PLYWOOD SHALL BE DRY.

1.7. LUMBER SHALL BE S4S.

ROUGH CARPENTRY

TYPICAL FOR ALL FRAMING LUMBER EXCEPT SHEARWALLS SHALL BE AS NOTED ON DETAILS

GENERAL

1.1. DIVISION 06 GENERAL APPLIES TO THIS SECTION.

1.2. SCOPE:
- a. INCLUDES -
  1) MATERIALS AND LABOR FOR INSTALLATION OF CONCRETE FORMWORK.
  2) INSTALLATION OF MISCELLANOUS IRON & STEEL EXCEPT WHERE NOTED OTHERWISE.
  3) INSTALLATION OF GLU-LAM BEAMS.
  4) INSTALLATION OF WOOD TRUSSES AND TRUSSED RAFTERS
  5) ITEMS SPECIFIED BELOW.

1.3. DIMENSION LUMBER:
- a. OF QUALITY TO MEET THE FOLLOWING MINIMUM STRESS GRADE REQUIREMENTS EXCEPT FOR INTERIOR NON-BEARING 2"X4" OR 2"X6" PARTITIONS WHICH SHALL BE SPRUCE / PINE / FIR NO. 2 OR BETTER GRADE, OR APPROVED EQUAL.
  DIMENSION LUMBER SHALL BE CLEARLY GRADE MARKED. MAXIMUM VARIATION SHALL BE MINUS 5% WITHOUT REDESIGN.

STRUCTURAL LIGHT FRAMING 2" TO 12" THICK	
Fb BENDING	1000 PSI
Ft TENSION	425 PSI
Fc PERPENDICULAR	425 PSI
Fc PARALLEL	1100 PSI
Fv SHEAR	70 PSI
E	1,300 KSI

NOTE 1: STRESSES SHOWN ARE ALLOWABLE FOR REPETITIVE USE. ADDITIONAL INCREASE FOR SNOW OR OTHER LIVE LOADS IS 15% MAXIMUM UNLESS WIND LOADS GOVERN. A 33% INCREASE IN STRESSES FOR LUMBER WILL BE ALLOWED FOR WIND LOADS ONLY IF STRESSES OF LUMBER UNDER TOTAL LOAD WITHOUT WIND ARE NOT EXCEEDED.

FASTENERS AND SUPPORTS

GENERAL

1.1. DIVISION 06 GENERAL APPLIES T

1.2. SCOPE:
- a. INCLUDES -
  1) ROUGH HARDWARE NOT SP

PRODUCTS

2.1. BOLTS, WOOD SCREWS, STEEL JO
- a. STANDARD TYPE AND MAKE

2.2. STRAP ANCHORS:
- a. TWELVE GAUGE X 1-1/4 INCH W

2.3. APPROVED MANUFACTURES:
- a. SIMPSON, SILVER, OR EQUAL
  SCHEDULE OF CONNECTORS "S

EXECUTION

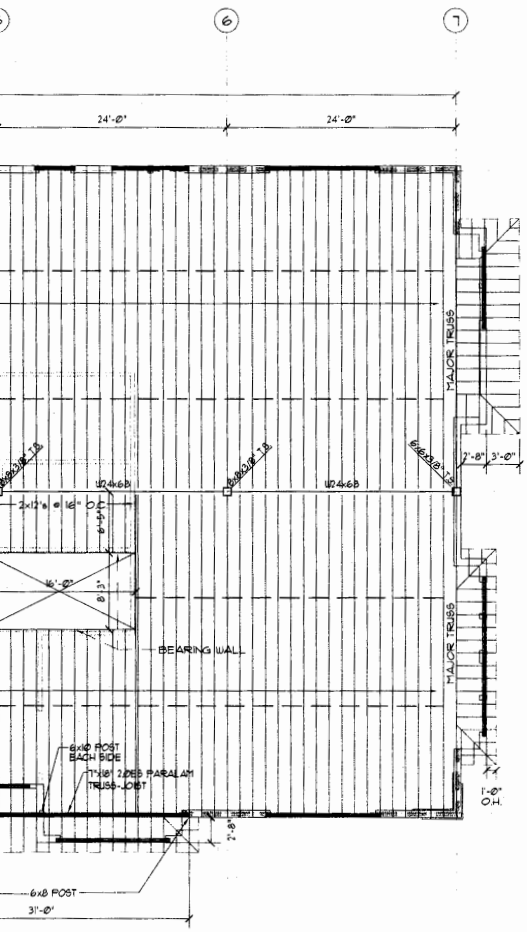
3.1. INSTALL AS INSTRUCTED, REQUIR

3.2. SECURE ONE MANUFACTURER AP
MEMBER.

WOOD TRUSSES AND WOOD BARS

THESE PLANS INCORPORATE THE US
FLOOR TRUSSES, WOOD BARS, GLU-L
IT SHALL BE THE MANUFACTURER'S R
STRUCTURAL ENGINEER, REGISTERED
MASSACHUSETTS. SAID ENGINEER SH
DETAILING OF ALL RELATED ITEMS,
BLOCKS, WEB STIFFENERS, BRIDGING
ALL REQUIREMENTS OF THE LATEST S
LOCAL CODES. ALL SIZES AND DETA
THE MANUFACTURER'S ENGINEER SHA
FOR REVIEW BY THE ENGINEER OF R
ENGINEER OF ANY RESPONSIBILITY F

THE USE OF THE TERM DOUBLE TRUS
MEMBER SIZE IS THE RESPONSIBILTY



SECOND FLOOR FRAMING PLAN

SCALE: 1/8"=1'-Ø" (1 / S2-Ø)

TO THIS SECTION.

ECIFIED IN OTHER SECTIONS.

IST HANGERS, EXPANSION BOLTS.
FOR JOB REQUIREMENTS.

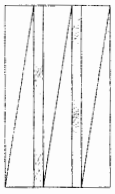
IDE, PUNCHED FOR NAILING AT NICE INCHES ON CENTER.

CODE APPROVED HANGERS AND CONNECTORS. SEE PLAN
SILVER" DESIGNATIONS USED.

ED, AND ACCORDING TO BEST PRACTICE.
PROVED SPIKE IN EACH HOLE THAT BEARS ON FRAMING

E OF PROPRIETARY ITEMS SUCH AS ROOF TRUSSES,
AM, LAMINATED VENEER LUMBER (LVL), AND PARALAM.
ESPONSIBILITY TO ENGAGE THE SERVICES OF A
TO PRACTICE IN THE COMMONWEALTH OF
ALL BE SOLEY RESPONSIBLE FOR THE DESIGN AND
NCLUDING BUT NOT LIMITED TO: HANGERS, SQUASH
BRACING, ETC. THE STRUCTURAL DESIGN SHALL MEET
STATE BUILDING CODE AS WELL AS ANY APPLICABLE
AILS SHALL BE CLEARLY NOTED ON THE SHOP DRAWINGS.
LL SUBMIT A SET OF CALCULATIONS BEARING HIS SEAL
ECORD. THIS SHALL NOT RELIEVE THE MANUFACTURER'S
OR THE DESIGN UNDER HIS REIGN.

S OR TRIPLE WOOD BAR IS GENERIC ONLY. THE ACTUAL
F OF THE MANUFACTURER'S ENGINEER AS DESCRIBED ABOVE.



3- 2x10's @ ½" PLYWOOD FILLERS

TYP. HEADER

SCALE: 3"=1'-Ø" (2 / S2-Ø)

NOTE: 4x6 POSTS @ ALL INTERMEDIATE MULLIONS (TYPICAL)

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PREPARED FOR
RYAN DEVELOPEMENT

SHEET TITLE
SECOND FLOOR FRAMING PLAN

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

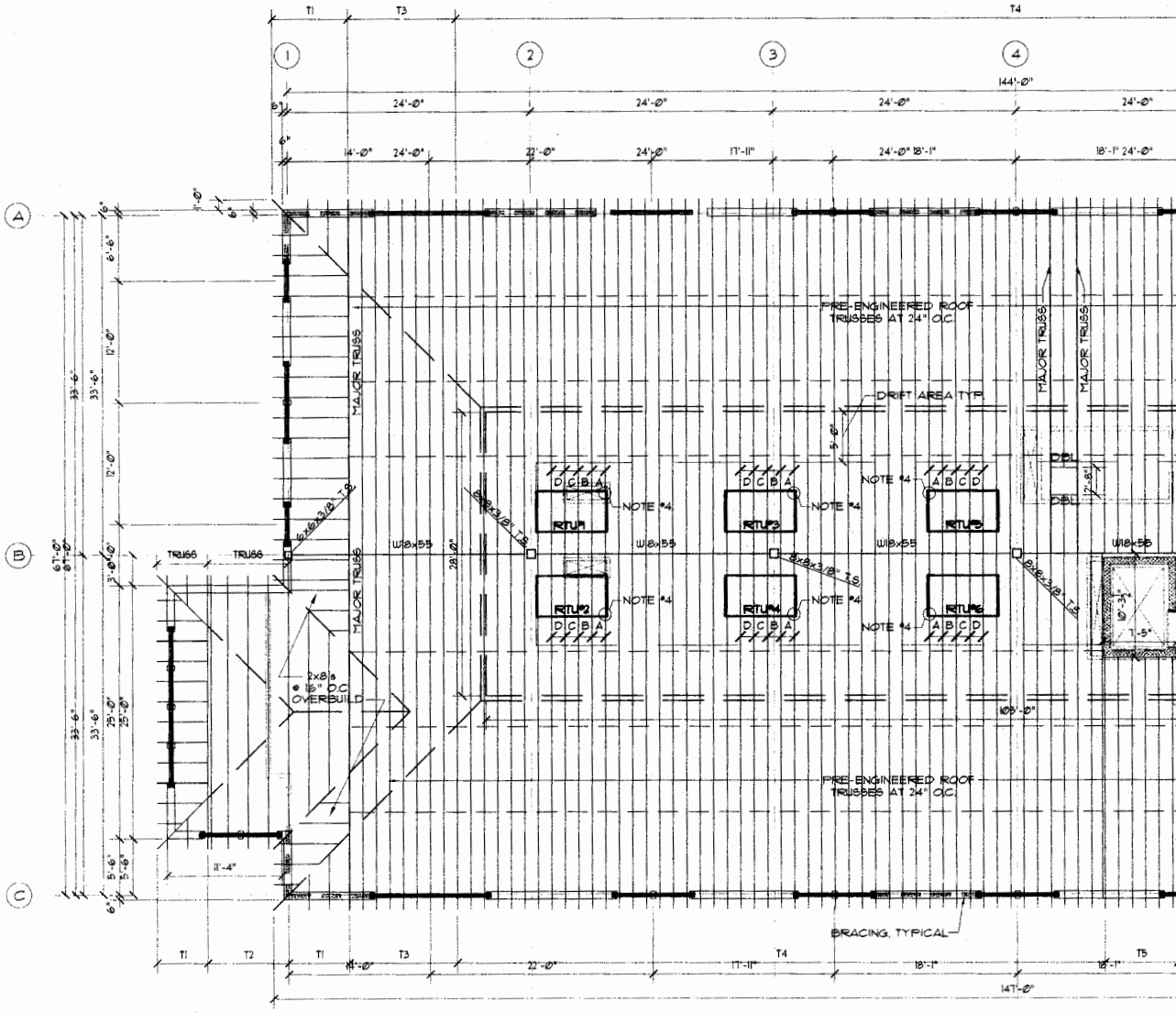
#	REVISION
1	08/21/98
2	09/15/98 TOTAL SHEET

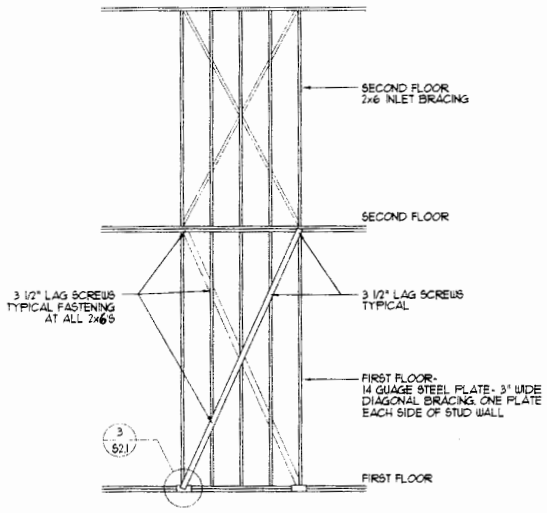
DATE
JULY 31, 1998

SCALE
1/8"=1'-Ø"

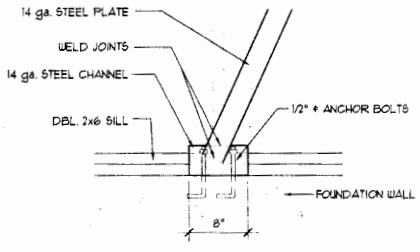
PROJECT NO.
1626

SHEET NO.
S2.0

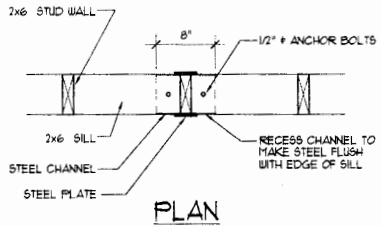




BRACING ELEVATION (2 / S2.1)
SCALE: 1/4"=1'-0"

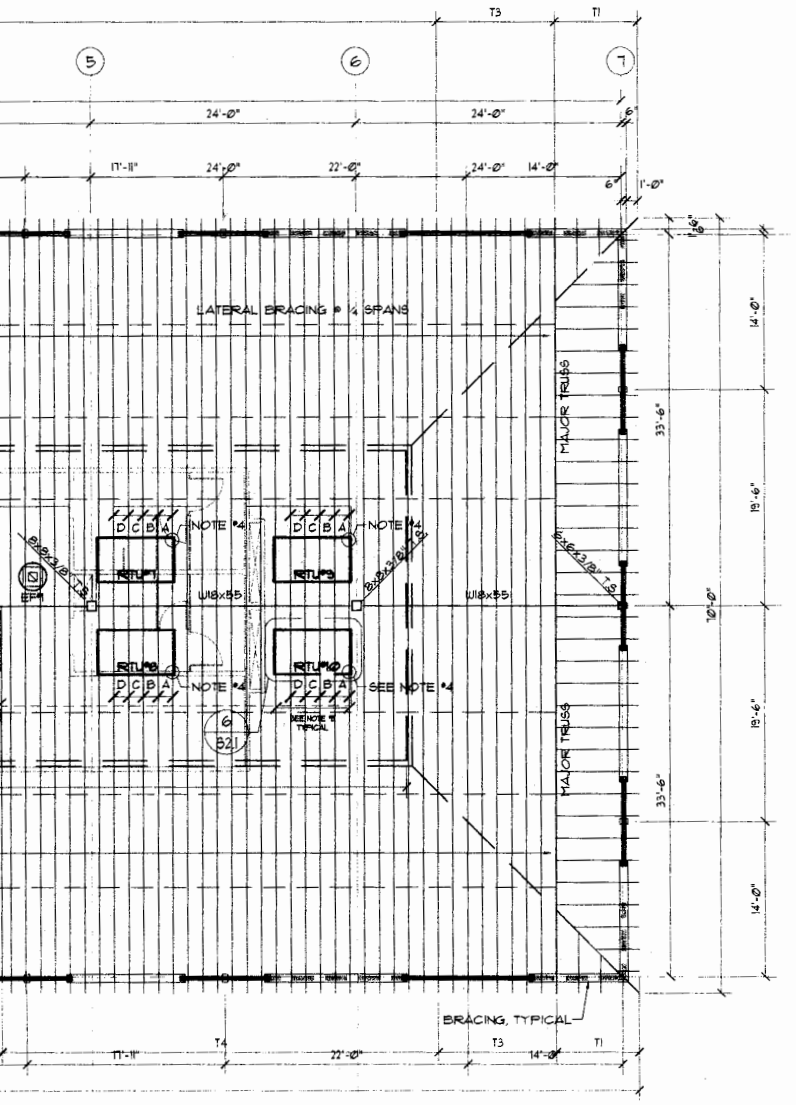


ELEVATION



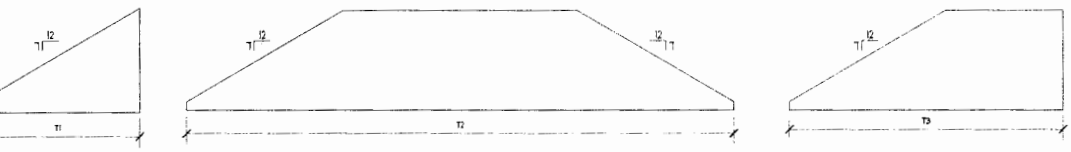
PLAN

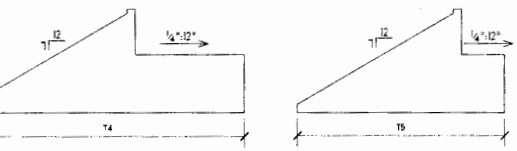
PLATE DETAIL (3 / S2.1)
SCALE: 1"=1'-0"



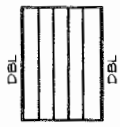
NOTE:
ALL HEADERS SHALL BE 3-2x1Ø'S W/ 1/2" PLYWOOD FILLERS AND 4x6 POSTS AT INTERMEDIATE JAMBS

ROOF FRAMING PLAN
SCALE: 1/8"=1'-Ø" (1 / S2.1)

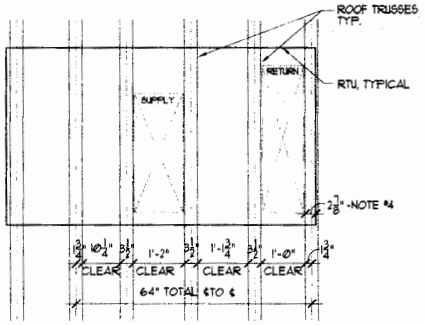




TRUSS PROFILES
SCALE: N.T.S. (4 / S2.1)



PENTHOUSE ROOF
SCALE: 1/8"=1'-Ø" (5 / S2.1)



RTU DETAIL
SCALE: 1/2"=1'-Ø" (6 / S2.1)

NOTES:

1. EACH UNIT IS A 5 TON RTU, 7'-Ø" x 4'-Ø"
2. ALL UNITS WEIGH APPROX. 85Ø LBS. INCL. CURB
3. ALL UNITS ARE APPROX. 34" HIGH PLUS 12" CURB
4. ALIGN CURB TO BEAR ON ROOF TRUSS, AND RETURN AIR TO PASS BETWEEN ROOF TRUSSES
5. TYPICAL TRUSS CLEAR SPACING BETWEEN ROOF TRUSSES AT A,B,C,4D LOCATIONS BEGINNING AT EXTERIOR CORNER DESCRIBED UNTER NOTE *4
6. TRUSS MANUFACURER SHALL DESIGN APPROPRIATE DRIFT LOADING @ ROOF

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PREPARED FOR
RYAN DEVELOPEMENT

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

SHEET TITLE
ROOF FRAMING PLAN

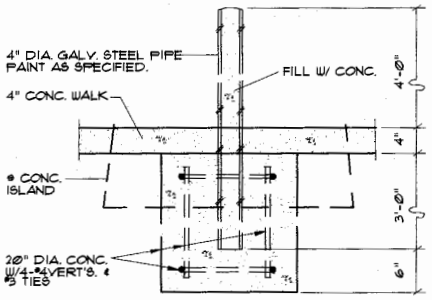
#	REVISION
1	Ø8/21/98
2	9/15/98 TOTAL SHEET

DATE
AUGUST 3, 1998

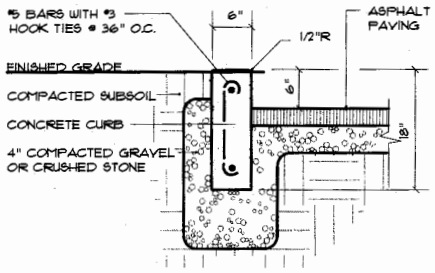
SCALE
1/8" = 1'-Ø"

PROJECT NO.
1626

SHEET NO.
S2.1

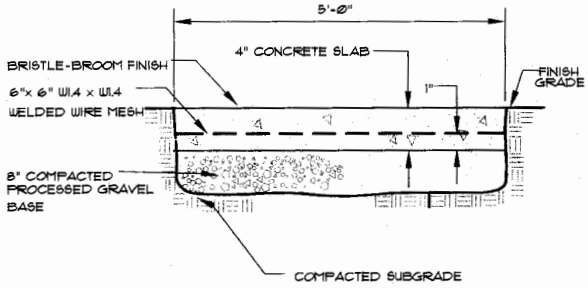


BOLLARD PIPE (1 C1.1)
SCALE: N.T.S.

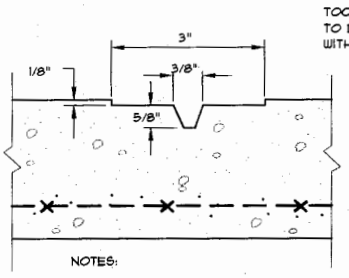


CONCRETE CURB (2 C1.1)
SCALE: N.T.S.

CAP

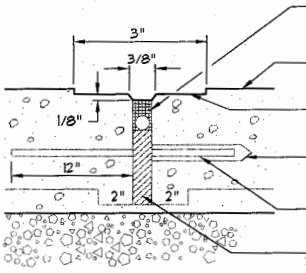


CONCRETE SIDEWALK (6 C1.1)
SCALE: N.T.S.

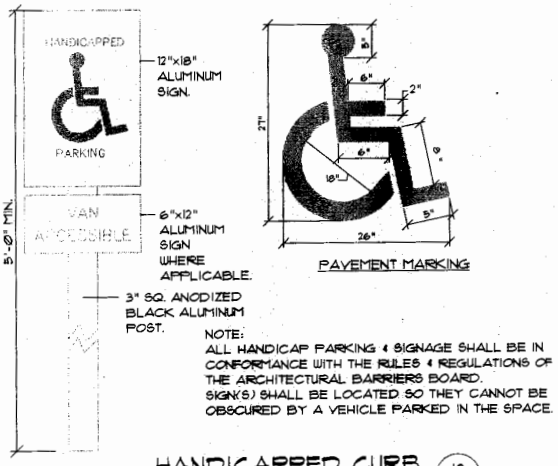


NOTES:
1. EXPANSION JOINTS (E.J.) @ 20'-0" O.C. UNLESS OTHERWISE NOTED
2. CONTROL JOINTS (C.J.) @ 5'-0" O.C. UNLESS OTHERWISE NOTED

CONTROL JOINT @ SIDEWALK (7 C1.1)
SCALE: N.T.S.

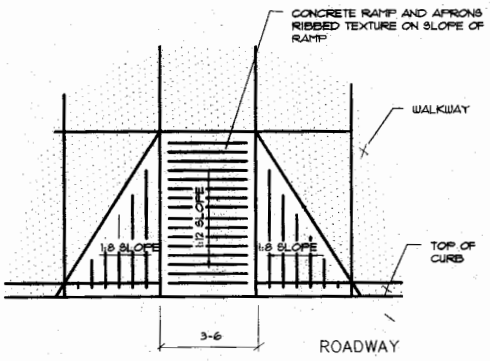


EXPANSION JOINT

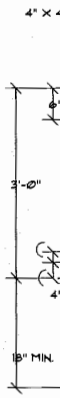


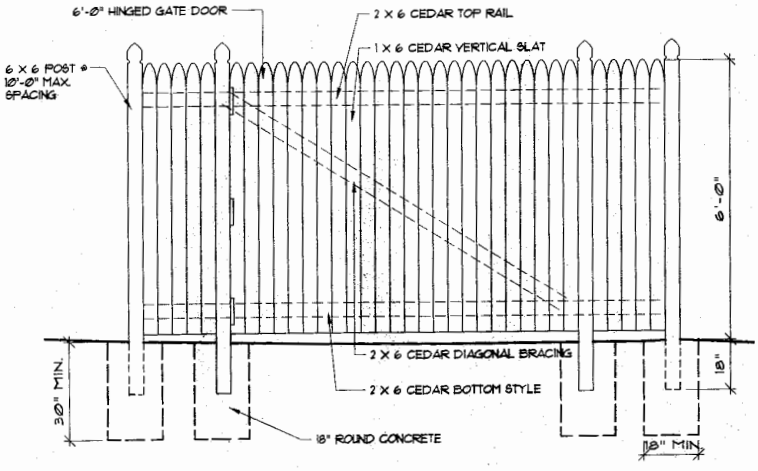
NOTE:
ALL HANDICAP PARKING & SIGNAGE SHALL BE IN CONFORMANCE WITH THE RULES & REGULATIONS OF THE ARCHITECTURAL BARRIERS BOARD. SIGN(S) SHALL BE LOCATED SO THEY CANNOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE.

HANDICAPPED CURB (10 C1.1)
SCALE: N.T.S.

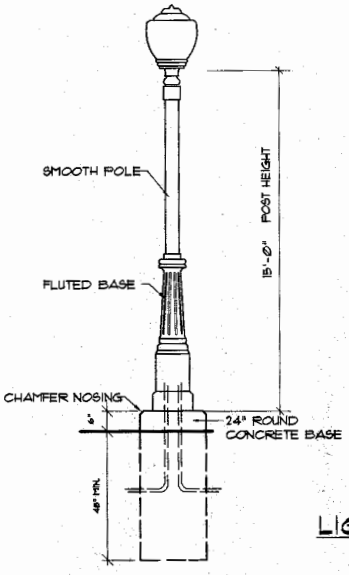


HANDICAPPED SIGN & PAVEMENT DETAIL (11 C1.1)
SCALE: N.T.S.





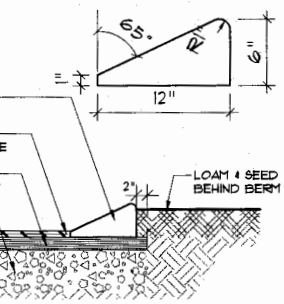
STOCKADE FENCE DETAIL (15 C1.1)
SCALE: N.T.S.



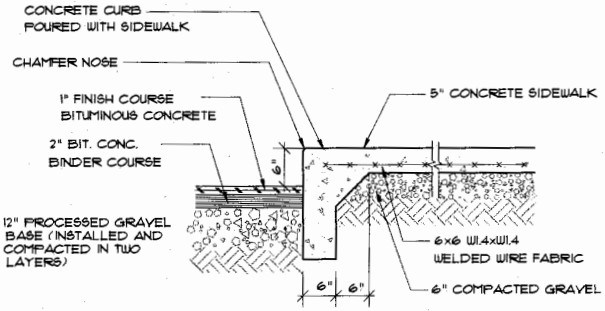
HAND HOLE
2"X45° BEVEL
GRADE
30" MIN.
FEEDER CONDU
6'-6" CONCRET PEDESTAL

NOTE:
PROVIDE REBA OF POLE MANUF

LIGHTPOST WITH PIER



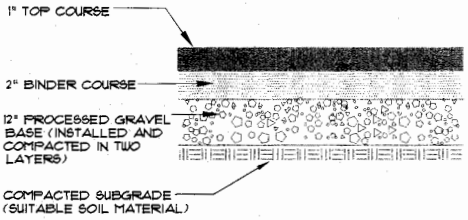
E COD BERM (4 C1.1)
SCALE: N.T.S.



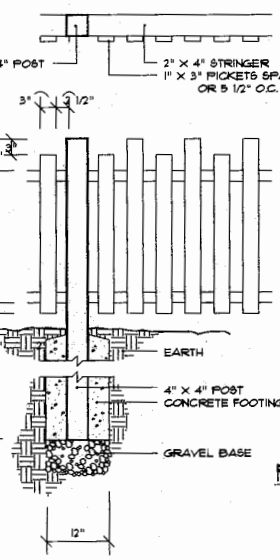
CONCRETE SIDEWALK/PLATFORM (5 C1.1)
SCALE: N.T.S.

- SPECIFIED SEALANT TO MIN 1/2" DEPTH
- TYPICAL MEDIUM BROOM FINISH
- EDGE TOOL SURFACE
- 12" EXPANSION SLEEVE, W/ WAXED TUBE TO PREVENT BONDING
- #4 SMOOTH DOWEL 2'-0" O.C. (TYP)
- PREMOLDED EXPANSION JOINT WITH STRIP OFF CAP TO FORM SEALANT JOINT. REMOVE AFTER POUR.

DETAIL (8 C1.1)
SCALE: N.T.S.

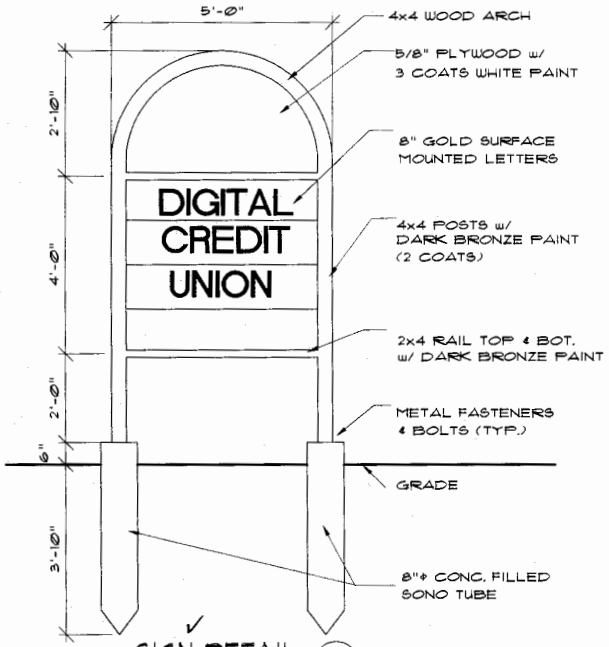


PAVEMENT SECTION (9 C1.1)
SCALE: N.T.S.

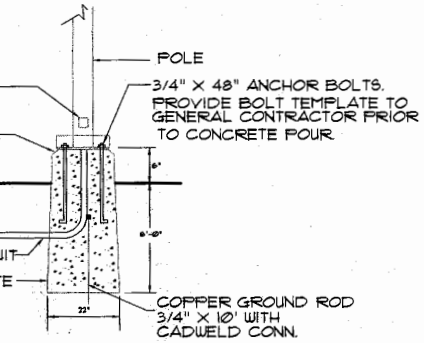


NOTES:
- ALL NAILS AND HARDWARE TO BE HOT DIPPED GALVANIZED
- PICKETS TO BE HUNG WITH UNIFORM HEIGHT AND SPACING.
- FENCE TO BE PAINTED OR STAINED AS PER SPECIFICATIONS
- POSTS TO BE SPACED 6" O.C.
- WOOD POSTS AND STRINGERS TO BE WOLMANIZED PINE GRADE C OR BETTER

PICKET FENCE (12 C1.1)
SCALE: N.T.S.



SIGN DETAIL (3 C1.1)
SCALE: N.T.S.



AR PER REQUIREMENTS
FACTURER.

R DETAIL (14 C1.1)
SCALE: N.T.S.

24" X 30"

SIGN (15 C1.1)
SCALE: N.T.S.

24" X 24"

SIGN (16 C1.1)
SCALE: N.T.S.

30" X 30"

SIGN (17 C1.1)
SCALE: N.T.S.

Joseph D. LaGrasse & Associates Inc.
Architecture * Engineering * Land Planning * Interior Design
One Elm Square
Andover, Massachusetts 01810
(978) 470-3675

PREPARED FOR
RYAN DEVELOPEMENT

SHEET TITLE
SITE DETAILS

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

REVISION

DATE
JULY 10, 1998

SCALE
AS NOTED

PROJECT NO.
1626

SHEET NO.
C1.2

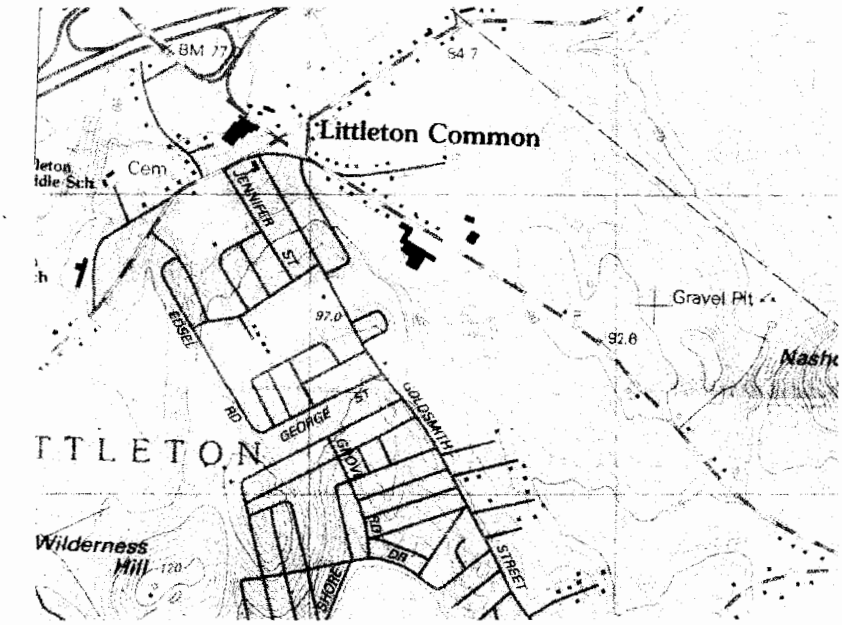
NOTES:

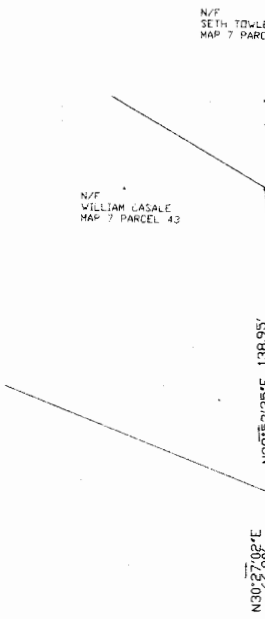
1. THIS PLAN IS FOR THE CONSTRUCTION OF SITE IMPROVEMENTS ONLY
2. ALL WORK SHALL COMPLY WITH APPLICABLE STATE & LOCAL CODES.
3. IF ANY PART OF THIS DESIGN IS TO BE ALTERED IN ANY WAY, THE DESIGN ENGINEER AND THE APPROVING AUTHORITY SHALL BE NOTIFIED IN WRITING PRIOR TO CONSTRUCTION
4. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL UTILITIES AND STRUCTURES PRIOR TO THE START OF WORK. THE CONTRACTOR SHALL COORDINATE ALL EXCAVATION WITH DIG-SAFE.
5. REFERENCE

   PLAN IN BOOK 12271 PAGE 233 MSRD
   DEED BOOK 13061 PAGE 132 MSRD.

6. SITE IS NOT IN THE 100 YEAR FLOOD PLAIN.
7. SITE IS SUBJECT TO THE WETLANDS PROTECTION ACT.
8. ZONING DISTRICT: BUSINESS.
9. SITE IS SHOWN ON THE LITTTLETON ASSESSORS MAP 7 PARCEL 26.
10. SITE IS SERVICED BY TOWN WATER.
11. WORK HOURS: 7AM – 5PM, MONDAY – SATURDAY.
12. UNSUITABLE MATERIALS BENEATH THE SEPTIC SYSTEM, THE BUILDING, AND THE PAVEMENT WILL BE REMOVED FROM THE SITE AS PART OF THIS PROJECT.
13. SEE ZBA DECISION FOR PLANTING AROUND SITE PERIMETER.

NOTES.





ZONING REQUIREMENTS TABLE

ZONING DISTRICT: BUSINESS

REQUIREMENT	REQUIRED	PROPOSED
MINIMUM LOT AREA (SF)	15000	55784
MINIMUM LOT FRONTAGE (FEET)	100	138
MINIMUM LOT FRONTYARD (FEET)	25	28
MINIMUM LOT SIDEYARD (FEET)	15	15
MINIMUM LOT REARYARD (FEET)	25	7 (PARKING) ***
MAXIMUM BUILDING HEIGHT (FEET)	32	32
MAXIMUM BUILDING AREA (%)	50% ✓	36% ✓
MAXIMUM USAGE (BLDG & PAVE)	80%	77%
PARKING SPACES (1 PER 150 SF)	134	72 ****

*** VARIANCE REQUIRED

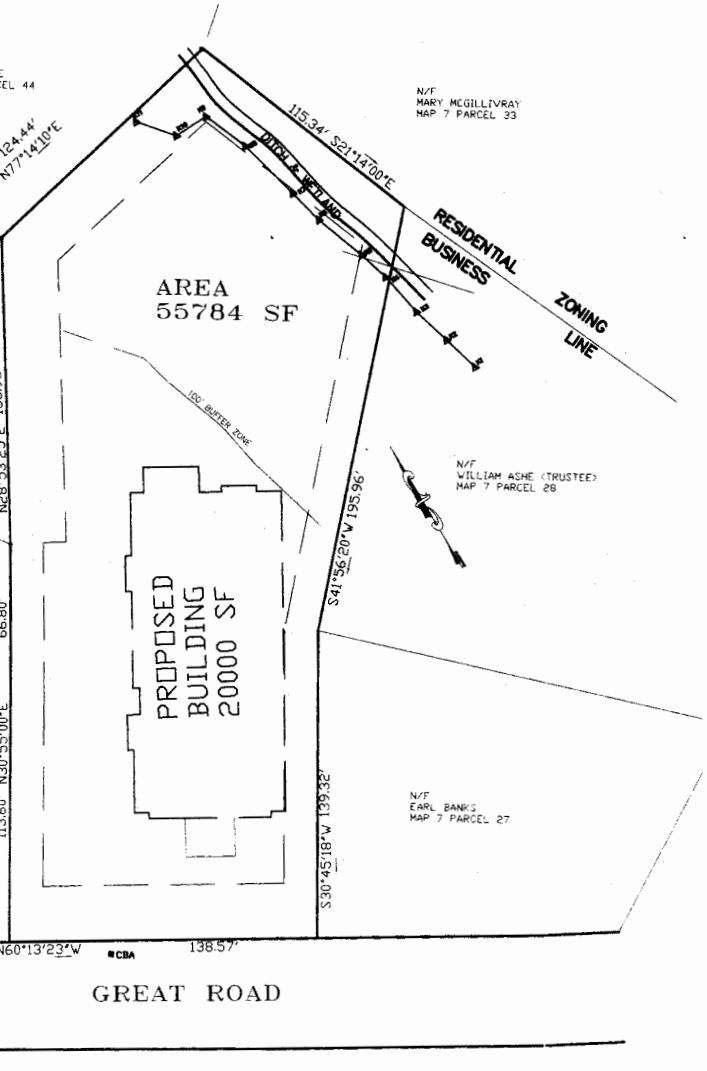
DIGITAL CREDIT UNION
SITE PLAN

INDEX & LOCUS PLAN

255 GREAT ROAD
LITTLETON, MA

APPROVAL UNDER THE SUBDIVISION CONTROL CONTROL LAW IS NOT REQUIRED.
PLANNING BOARD APPROVAL
DATE: Sept 24 1998 ✓

CHAIRMAN



CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

I FURTHER CERTIFY THAT THE PROPERTY LINES SHOWN ON THIS PLAN ARE THE DIVIDING LINES OF EXISTING OWNERSHIPS AND THE LINES OF THE STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND THAT NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN.

COMMONWEALTH OF MASSACHUSETTS BERNARD H. HAMILL # 33595 REGISTERED LAND SURVEYOR

COMMONWEALTH OF MASSACHUSETTS BERNARD H. HAMILL # 32401 CIVIL REGISTERED PROFESSIONAL ENGINEER

DATE: 8 JULY 1998
REVISED: 4 AUG. 1998
11 SEPT. 1998
17 SEPT. 1998
24 SEPT. 1998

GRAPHIC SCALE

40 0 20 40 80 160

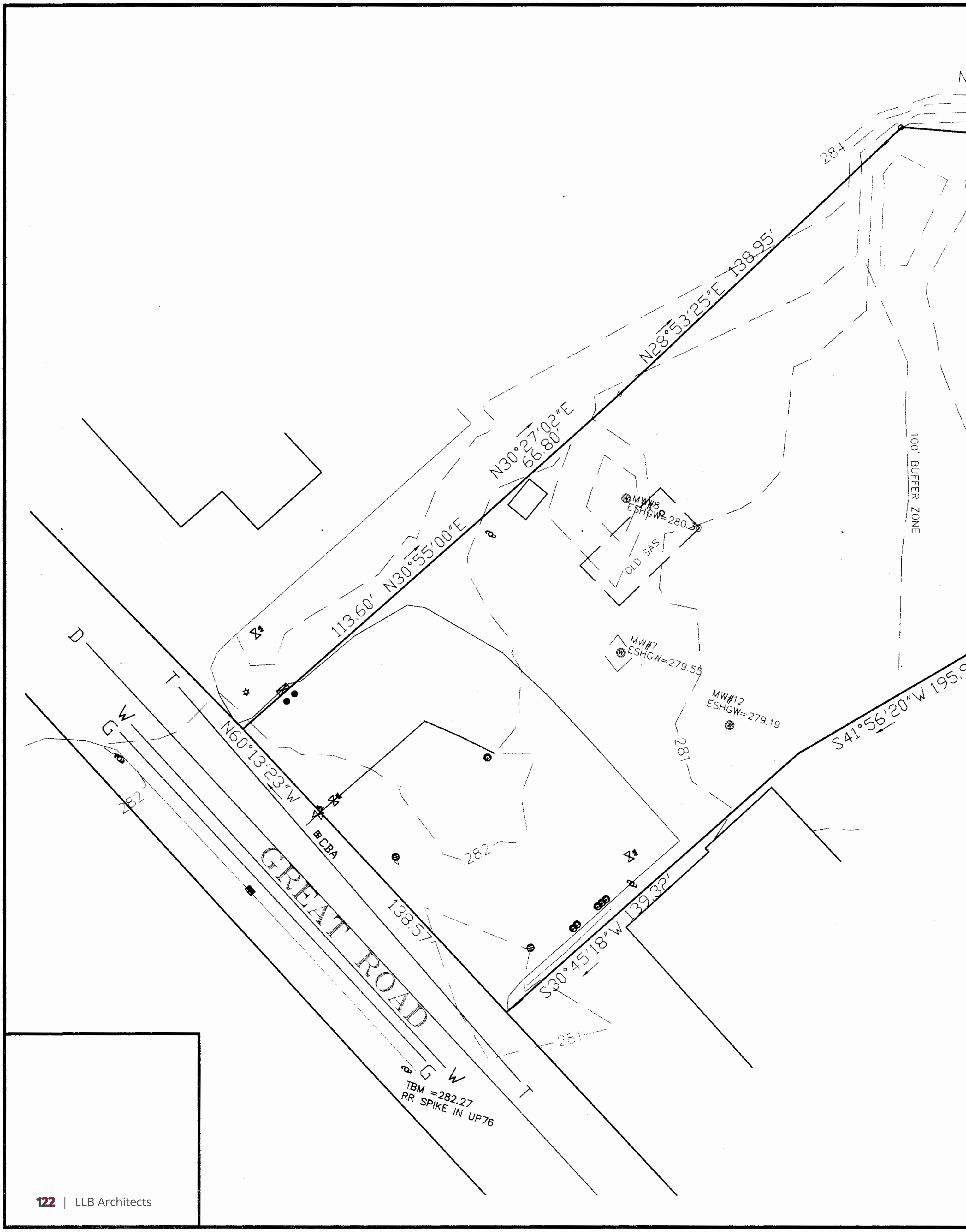
(IN FEET)
1 inch = 40 ft

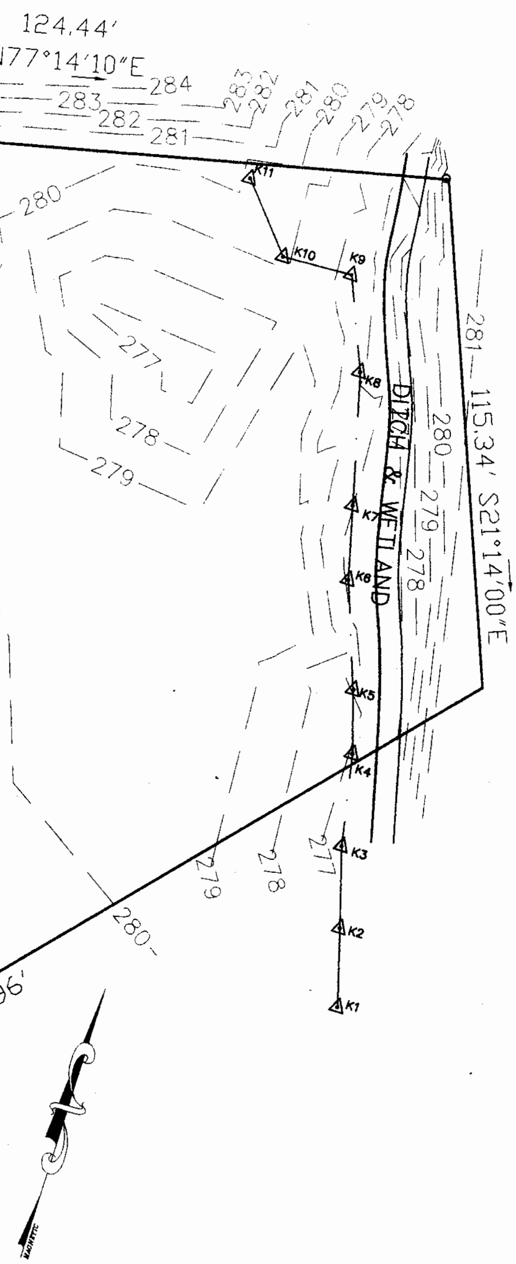
PREPARED FOR:

RYAN DEVELOPMENT CORP
4 PARK DR.
WESTFORD, MA 01886

PREPARED BY:

H-STAR ENGINEERING, INC.
9 ACTON ROAD, SUITE 17
CHELMSFORD, MA 01824
(978) 256-9216


284
N28°53'25"E 138.95'
N30°27'02"E
66.80'
113.60' N30°55'00"E
100' BUFFER ZONE
MW#8
ESHGW=280.30
OLD SAS
MW#7
ESHGW=279.55
MW#12
ESHGW=279.19
281
S41°56'20"W 195.9
N60°13'23"W
CBA
GREAT ROAD
282
138.57'
S30°45'18"W 139.32'
281
TBM =282.27
RR SPIKE IN UP76



EXISTING SITE

DIGITAL CREDIT UNION

255 GREAT ROAD
LITTLETON, MA

APPROVAL UNDER THE SUBDIVISION CONTROL CONTROL LAW IS NOT REQUIRED.

PLANNING BOARD APPROVAL

DATE: Sept 24 1998

CHAIRMAN

CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

COMMONWEALTH OF MASSACHUSETTS
BERNARD H. HAMILL
No. 33595
REGISTERED LAND SURVEYOR

LEGEND

- MONUMENT FOUND
- CONIFERIOUS TREE
- DECIDIOUS TREE
- EXISTING FIRE HYDRANT
- GAS VALVE
- IRON PIPE FOUND
- LIGHT POST
- MAILBOX
- ROCK
- SHRUB
- SURVEY STATION
- TREE STUMP
- STONEWALL
- UTILITY POLE
- ANCHOR POINT
- WELL
- WATER VALVE
- BENCH MARK
- TREE LINE
- SHRUB LINE
- BRUSH LINE
- ELEVATION POINT
- IRON PIN SET (IPS)
- PK SET
- DRILL HOLE SET (DHS)
- DRAINAGE MAN HOLE
- SEWER MAN HOLE
- EDGE OF WETLAND
- EDGE OF STREAM
- GAS LINE

DATE: 8 JULY 1998
REVISED: 4 AUG. 1998

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PREPARED FOR:

RYAN DEVELOPMENT CORP
4 PARK DR.
WESTFORD, MA 01886

PREPARED BY:

H-STAR ENGINEERING, INC.
9 ACTON ROAD, SUITE 17
CHELMSFORD, MA 01824
(978) 256-9216

SHEET 2 OF 9

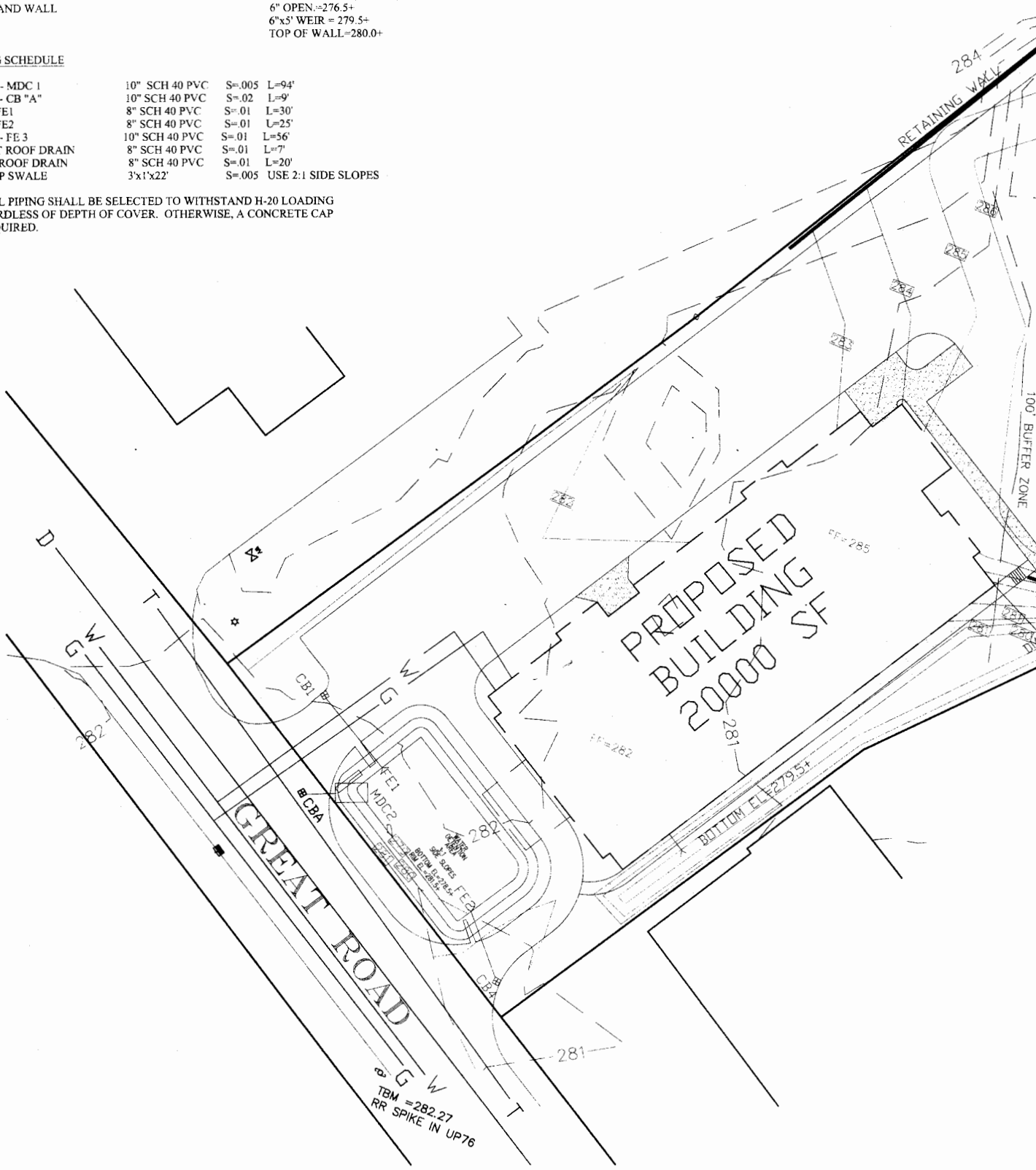
DRAINAGE STRUCTURE SCHEDULE

STRUCTURE	RIM	INV IN	INV OUT
CB "A"	281.24	10" PVC=278.72 (MDC 2)	12" RCP = 275.84
DMH 1	280.4+	6" OPEN.=279.55 (POND)	10" PVC = 279.54 (MDC1)
MDC 2	280.9+	5" OPEN. = 279.00	10" PVC = 278.90 (CB A)
		4" OPEN. = 279.50	
		6"x12" OPEN. = 280.40	
CB1	281.5+		8" PVC = 279.30 (POND FE1)
CB4	281.0+		8" PVC=279.25 (POND FE2)
MDC 1	282.6+	10" PVC = 279.07	10" PVC = 278.90 (FE3)
FE 1			8" PVC = 279.00 (POND)
FE 2			8" PVC = 279.00 (POND)
FE 3			10" PVC=278.34 (SWALE)
WETLAND WALL			6" OPEN.=276.5+
			6"x5' WEIR = 279.5+
			TOP OF WALL=280.0+

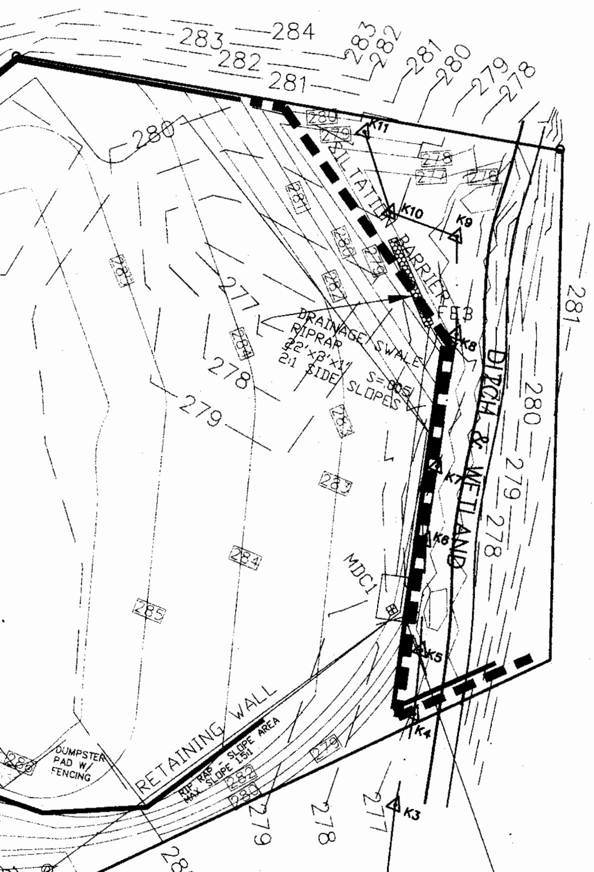
PIPING SCHEDULE

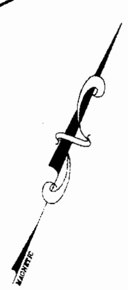
DMH1 - MDC 1	10" SCH 40 PVC	S=.005	L=94'
MDC2 - CB "A"	10" SCH 40 PVC	S=.02	L=9'
CB1 - FE1	8" SCH 40 PVC	S=.01	L=30'
CB4 - FE2	8" SCH 40 PVC	S=.01	L=25'
MDC1 - FE 3	10" SCH 40 PVC	S=.01	L=56'
FRONT ROOF DRAIN	8" SCH 40 PVC	S=.01	L=7'
REAR ROOF DRAIN	8" SCH 40 PVC	S=.01	L=20'
RIPRAP SWALE	3'x1'x22'	S=.005	USE 2:1 SIDE SLOPES

***ALL PIPING SHALL BE SELECTED TO WITHSTAND H-20 LOADING REGARDLESS OF DEPTH OF COVER. OTHERWISE, A CONCRETE CAP IS REQUIRED.



PROPOSED SITE PLAN
DIGITAL CREDIT UNION
255 GREAT ROAD
LITTLETON, MA





APPROVAL UNDER THE SUBDIVISION CONTROL
CONTROL LAW IS NOT REQUIRED.
PLANNING BOARD APPROVAL
DATE: *Sept 24, 1998*

CHAIRMAN

CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

LEGEND

- MONUMENT FOUND
- CONIFERIOUS TREE
- DECIDIOUS TREE
- EXISTING FIRE HYDRANT
- GAS VALVE
- IRON PIPE FOUND
- LIGHT POST
- MAILBOX
- ROCK
- SHRUB
- SURVEY STATION
- TREE STUMP
- STONEWALL
- UTILITY POLE
- ANCHOR POINT
- WELL
- WATER VALVE
- BENCH MARK
- TREE LINE
- SHRUB LINE
- BRUSH LINE
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- IRON PIN SET (IPS)
- PK SET
- DRILL HOLE SET (DHS)
- DRAINAGE MAN HOLE
- SEWER MAN HOLE
- EDGE OF WETLAND
- EDGE OF STREAM
- GAS LINE

DATE: 8 JULY 1998
REVISED: 4 AUG. 1998
24 AUG. 1998
11 SEPT. 1998
17 SEPT. 1998

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

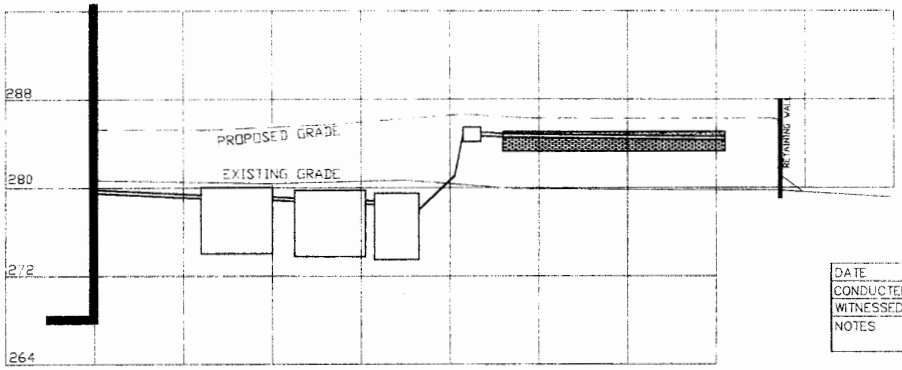
PREPARED FOR:

RYAN DEVELOPMENT CORP
4 PARK DR.
WESTFORD, MA 01886

PREPARED BY:

H-STAR ENGINEERING, INC.
9 ACTON ROAD, SUITE 17
CHELMSFORD, MA 01824
(978) 256-9216

SYSTEM PROFILE: HORIZONTAL SCALE: 1"=20' VERTICAL SCALE: 1"=8'



SOIL TESTING: DEEP HOLES

	DH1	DH2	DH3	DH4	DH5	DH6
	ELEV=281.8	ELEV=281.6	ELEV=280.4	ELEV=279.7	ELEV=279.8	ELEV=
	FILL 24"	FILL 24"	FILL 30"	FILL 30"	FILL 12"	FIL
	MOTTLES 5 2.5YR3/6 42"	MOTTLES 4 2.5YR3/6 42"	MOTTLES 2.5YR3/6 36"	MOTTLES 2.5YR3/6 36"	Ap 10YR3/1 24"	MOTT 2.5YR
	Ap 10YR3/1 48"	Ap 10YR3/1 48"	Ap 10YR3/1 42"	Ap 10YR3/1 42"	MOTTLES 4 2.5YR3/6 WEEPING @ 3'	Ap 1
	WEEPING @ 4' Bw 10YR4/4 SW @ 4.5' 64"	WEEPING @ 4.5' Bw 10YR5/6 64"	Bw 2.5Y6/4 60"	Bw 10YR4/4 60"	Bw 10YR5/4 42"	Bw 1 WEEP
	C1 10YR5/3 S & G ELEV= 108'	SW @ 5.5' C1 10YR5/3 S & G ELEV= 108'	WEEPING @ 5' SW @ 5.5' C1 10YR5/3 S & G ELEV= 132'	WEEPING @ 5' SW @ 5.5' C1 10YR5/3 S & G ELEV= 120'	SW @ 3.5 C1 10YR5/3 S & G ELEV= 120'	SW C1 S ELEV

DATE	2 JUNE 98
CONDUCTED BY	H-STAR ENG. INC.
WITNESSED	B. SULLIVAN (NABH)
NOTES	DH1A – SW @ 3' IN OLD LEACHING SYSTEM – SEE MONITORING WELLS FOR IN SEASON GW OBSERVATIONS. 10' DEEP DEWATERING TRENCH ACROSS SITE – NO REFUSAL, FILL NOTED

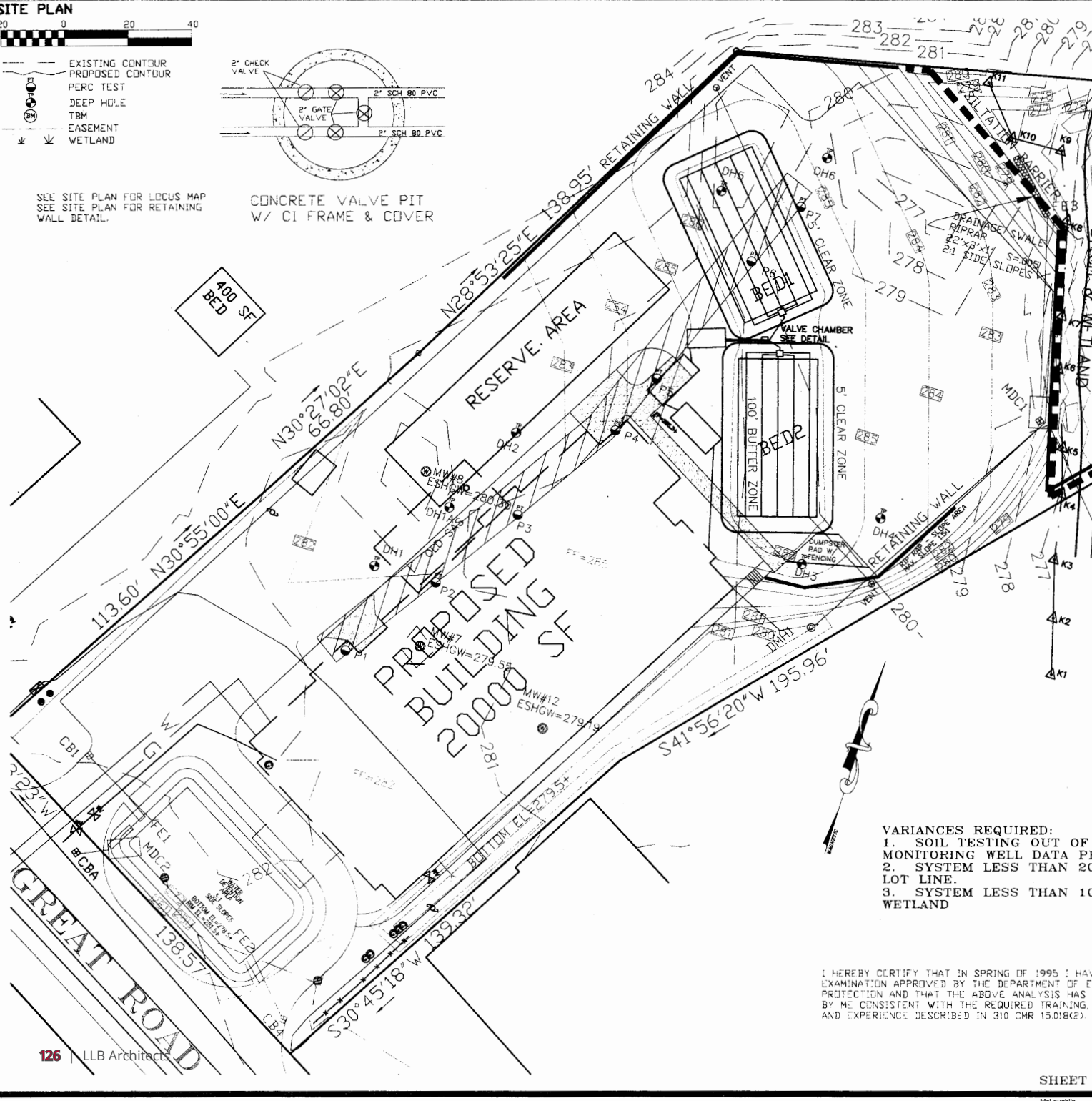
SITE PLAN

20 0 20 40

EXISTING CONTOUR
PROPOSED CONTOUR
PERC TEST
DEEP HOLE
TBM
EASEMENT
WETLAND

SEE SITE PLAN FOR LOCUS MAP
SEE SITE PLAN FOR RETAINING WALL DETAIL.

CONCRETE VALVE PIT
W/ CI FRAME & COVER

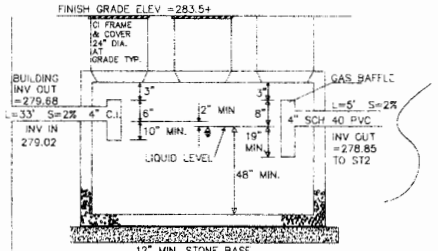


VARIANCES REQUIRED:
1. SOIL TESTING OUT OF MONITORING WELL DATA PE
2. SYSTEM LESS THAN 20 LOT LINE.
3. SYSTEM LESS THAN 10 WETLAND

I HEREBY CERTIFY THAT IN SPRING OF 1995 I HAV EXAMINATION APPROVED BY THE DEPARTMENT OF E PROTECTION AND THAT THE ABOVE ANALYSIS HAS BY ME CONSISTENT WITH THE REQUIRED TRAINING, AND EXPERIENCE DESCRIBED IN 310 CMR 15.018(2)

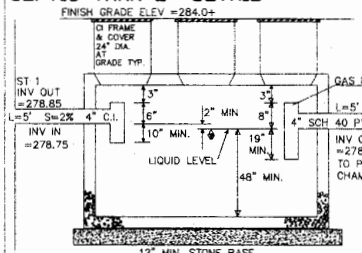
SHEET

SEPTIC TANK 1 DETAIL



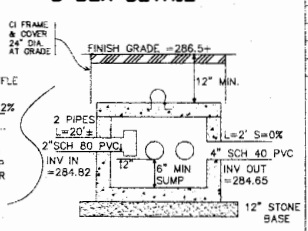
SEPTIC TANK 3000 GAL
SUGGESTED MANUFACTURER - SHEA
H-20

SEPTIC TANK 2 DETAIL



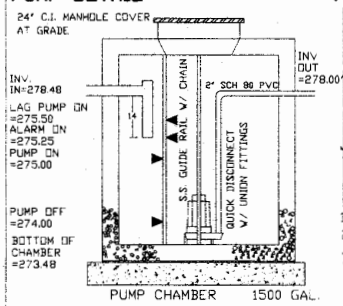
SEPTIC TANK 2 - 3000 GAL
SUGGESTED MANUFACTURER - SHEA
H-20

D-BOX DETAIL

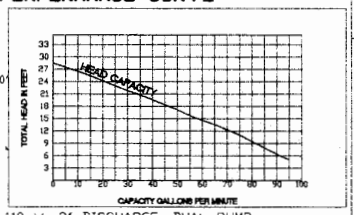


H-20
2 EACH

PUMP DETAIL

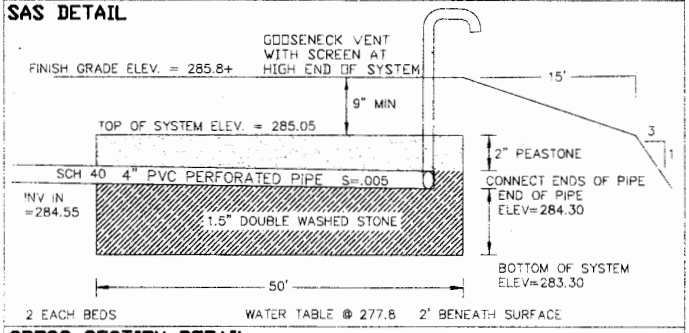


PERFORMANCE CURVE

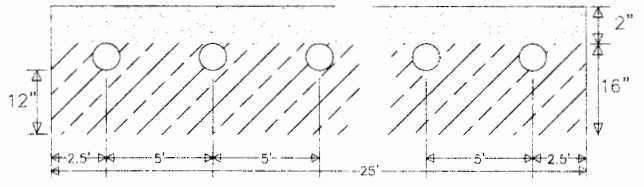


110 V, 2" DISCHARGE, DUAL PUMP
20' TOTAL HEAD @ 25 GPM
.5 HP 'MYERS' OR EQUAL
VISUAL AND AUDIBLE ALARM
TO BE INSTALLED ON SEPARATE CIRCUIT
DUPLEX PUMPS MUST ALTERNATE

SAS DETAIL



CROSS SECTION DETAIL

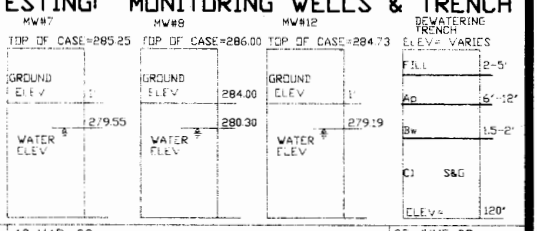


LEACHING BED CROSS SECTION
NTS 5 PIPES (2 BEDS)

REVISIONS

4 AUG. 98 - ST2 UPGRADE ✓
11 SEPT. 98 - TANK RELOCATION ✓

SOIL TESTING: MONITORING WELLS & TRENCH



DATE	12 MAR. 90	25 JUNE 98
CONDUCTED BY	GHR ENG. CORP.	H-STAR ENG. INC.
WITNESSED		B. SULLIVAN (NABH)
NOTES	SITE MONITORING & CLEANUP	

PERC TEST

	P1	P2	P3	P4	P5	P6	P7
SATURATION	20 MIN	18 MIN	20MIN	COULD	COULD	COULD	COULD
12"-9"	24 MIN	10 MIN	10 MIN	NOT	NOT	NOT	NOT
9"-6"		3 MIN	8 MIN	SAT.	SAT.	SAT	SAT.
PERC RATE	DISCONT	2 MIN/IN	3 MIN/IN	2 MIN/IN	2 MIN/IN	2 MIN/IN	2 MIN/IN
DEPTH	4'	4'	4'	4'	4'	4'	4'
DATE	25 JUNE 98						
CONDUCTED BY	H-STAR ENG. INC.						
WITNESSED	B. SULLIVAN (NABH)						

DESIGN CALCULATIONS

ESTIMATED FLOW
20000 SF OFFICE AT 75 GAL/1000SF/DAY=1500 GAL/DAY

SEPTIC TANK SIZE
1500 GPD (AVERAGE DAILY FLOW) x 2.00=3000 GAL
SUGGESTED PRIMARY SEPTIC TANK SIZE=3000 GAL
SUGGESTED SECONDARY SEPTIC TANK SIZE=1500 GAL

LEACHING AREA ANALYSIS
PERCOLATION RATE=2 MIN/INCH (CLASS I)
DESIGN TO 10 MIN/IN (CLASS II)
LATERAL LOADING=.60 GAL/SF/DAY
BOTTOM LOADING=.60 GAL/SF/DAY
TOTAL LATERAL AREA=0 SF
TOTAL BOTTOM AREA=2500 SF
TOTAL SYSTEM CAPACITY=1500 GAL/DAY
BOARD OF HEALTH REQUIREMENT=---SF

DOSING CALCULATIONS:
4 DOSE PER DAY = 375 GAL
=50.1 CF
15min/dose =
= 3.3 CFM
= 25 GPM
TANK INT.= 50 CF/FT
PUMP ON - PUMP OFF
50.1 CF/ 50 CF/FT=1.00 FT
STATIC HEAD =11 FT
KINETIC HEAD=6 FT
TOTAL HEAD=17 FT

NOTES:

1. THIS PLAN SHOWS THE DESIGN OF A SUBSURFACE SEWAGE DISPOSAL SYSTEM BASED ON DESIGN CRITERIA ONLY.
2. THIS SYSTEM IS DESIGNED FOR RESIDENTIAL/DOMESTIC USE ONLY.
3. NO GARBAGE GRINDERS ALLOWED.
4. VENT LINES AND SOIL PIPES ARE TO BE INSTALLED AS PER THE NATIONAL PLUMBING CODE AND STATE BUILDING REGULATIONS.
5. ZONING REGULATIONS ARE SOLELY OWNER RESPONSIBILITY.
6. ONLY THOSE FEATURES READILY OBSERVABLE ARE SHOWN.
7. EXISTING AND PROPOSED WELLS ARE 100' OR MORE FROM EXISTING AND PROPOSED SEPTIC SYSTEMS.
8. SEPTIC TANK MUST BE WATERTIGHT AND DURABLE.
9. FIRST TWO (2) FEET OF DISTRIBUTION BOX OUTLET PIPES MUST BE LAID LEVEL.
10. ALL STONE PLACED IN LEACHING AREA SHALL MEET TITLE V REQUIREMENTS (IE, LESS THAN 2% PASSING A #200 SIEVE).
11. FINISHED GRADE ABOVE LEACHING AREA MUST HAVE 2% SLOPE.
12. NO WETLANDS WITHIN 75 FEET OF SYSTEM.
13. NO STRUCTURES OR VEHICULAR TRAFFIC ON SYSTEM AREAS AFTER CONSTRUCTION EXCEPT AS SHOWN ON THESE PLANS.
14. ALL PIPE TO BE TIGHT JOINTED 4" SCH 40 PVC EXCEPT AS NOTED.
15. ALL ORGANIC SUBSTANCES MUST BE REMOVED FROM THE LEACHING AREA FOR A DISTANCE OF 5 FEET. REPLACE WITH COARSE CLEAN SAND.
16. IF SEPTIC TANK SLUDGE DEPTH EXCEEDS 25% OF LIQUID DEPTH, TANK SHOULD BE PUMPED. OTHERWISE, PUMP EVERY TWO YEARS.
17. DEVIATION FROM THIS PLAN WILL VOID ANY CERTIFICATION OF THIS PLAN OR SYSTEM WARRANTEE.
18. CONTRACTOR SHALL VERIFY SITE FEATURES PRIOR TO CONSTRUCTION.
19.

SUBSURFACE SEWAGE DISPOSAL SYSTEM

LOCATED AT

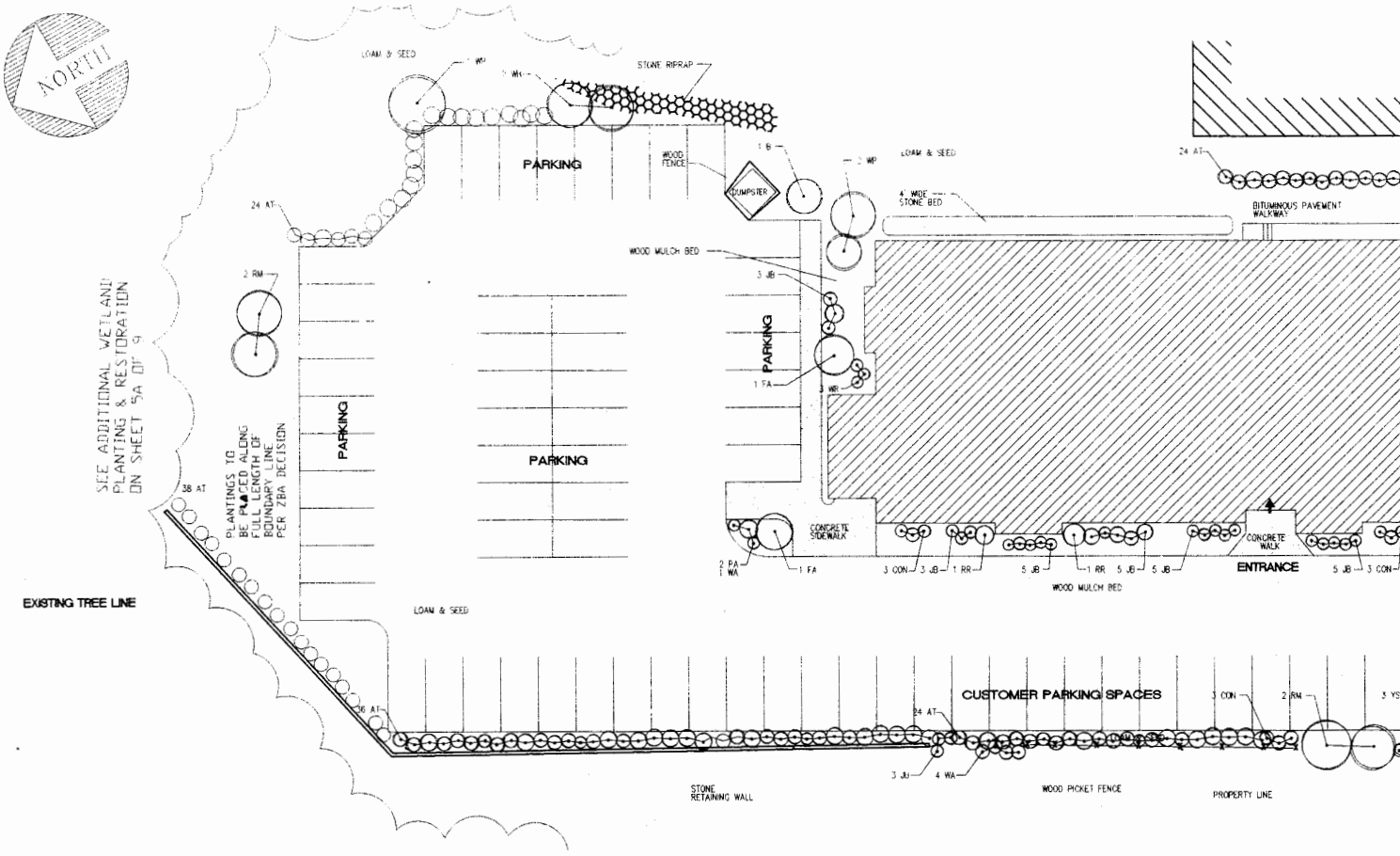
ASSSESSORS MAP 7 PARCEL 26

255 GREAT ROAD

LITTLETON, MA

OWNER: RYAN DEVELOPMENT
STREET: 4 PARK DRIVE
TOWN: WESTFORD, MA 01886
DATE: 8 JULY 1998
SCALE: 1" = 20'

DESIGNED BY:
H-STAR ENGINEERING, INC.
CHELMSFORD, MA 01824
(978) 256-9216



LANDSCAPING SCHEDULE

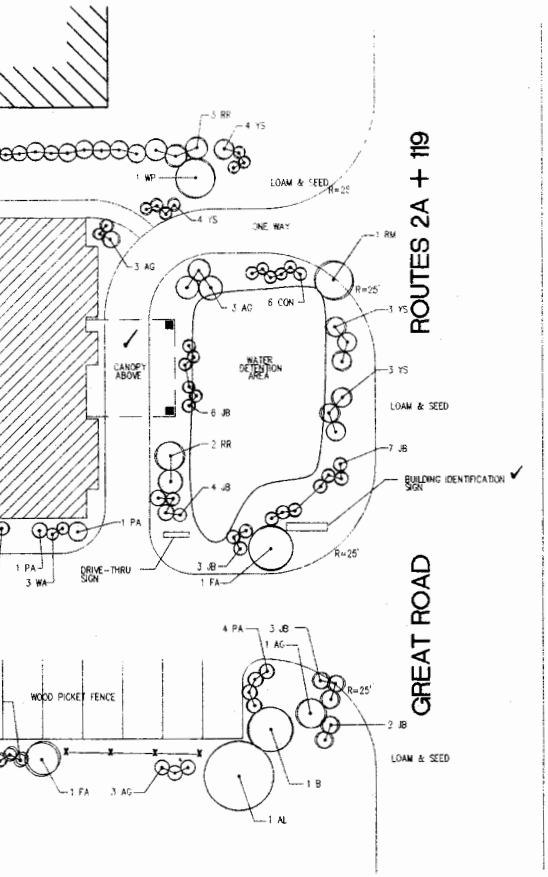
SYMBOL	NAME	SIZE @ PLANTING	QUANTITY	REMARKS
RM	RED MAPLE	12'	5	
B	BIRCH	12'	2	
WH	WASHINGTON HAWTHORNE	10'	2	
WP	WHITE PINE	12'	4	
AL	AMERICAN LINDEN	12'	1	
JB	JAPANESE BARBERI	24"	51	
JU	JUNIPER	24"	3	
FA	FLOWERING CRABAPPLE	10'	5	
WR	WHITE RHODODENDRON	36"	3	
RR	RED RHODODENDRON	36"	7	
PA	PINK AZALEA	36"	8	
WA	WHITE AZALEA	36"	5	
YS	YEW SPREADING	36"	17	
CON	CONEASTER -- YELLOW	24"	15	
AG	ARBORVITAE GLOBE	36"	9	
AT	ARBORVITAE TALL	36"	144	

LANDSCAPING PLAN

DIGITAL CREDIT UNION

255 GREAT ROAD

LITTLETON, MA



APPROVAL UNDER THE SUBDIVISION CONTROL CONTROL LAW IS NOT REQUIRED.

PLANNING BOARD APPROVAL

DATE: Sept 24, 1998

CHAIRMAN

CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

COMMONWEALTH OF MASSACHUSETTS BERNARD H. HAMILL # 33595 REGISTERED LAND SURVEYOR

COMMONWEALTH OF MASSACHUSETTS BERNARD H. HAMILL # 32401 CIVIL REGISTERED PROFESSIONAL ENGINEER

PLAN PREPARED BY J. LAGRASSE & ASSOC.

DATE: 8 JULY 1998
REVISED: 4 AUG. 1998
11 SEPT. 1998
17 SEPT. 1998
24 SEPT. 1998

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PREPARED FOR:

RYAN DEVELOPMENT CORP
4 PARK DR.
WESTFORD, MA 01886

PREPARED BY:

H-STAR ENGINEERING, INC.
9 ACTON ROAD, SUITE 17
CHELMSFORD, MA 01824
(978) 256-9216

CONSTRUCTION SEQUENCE:

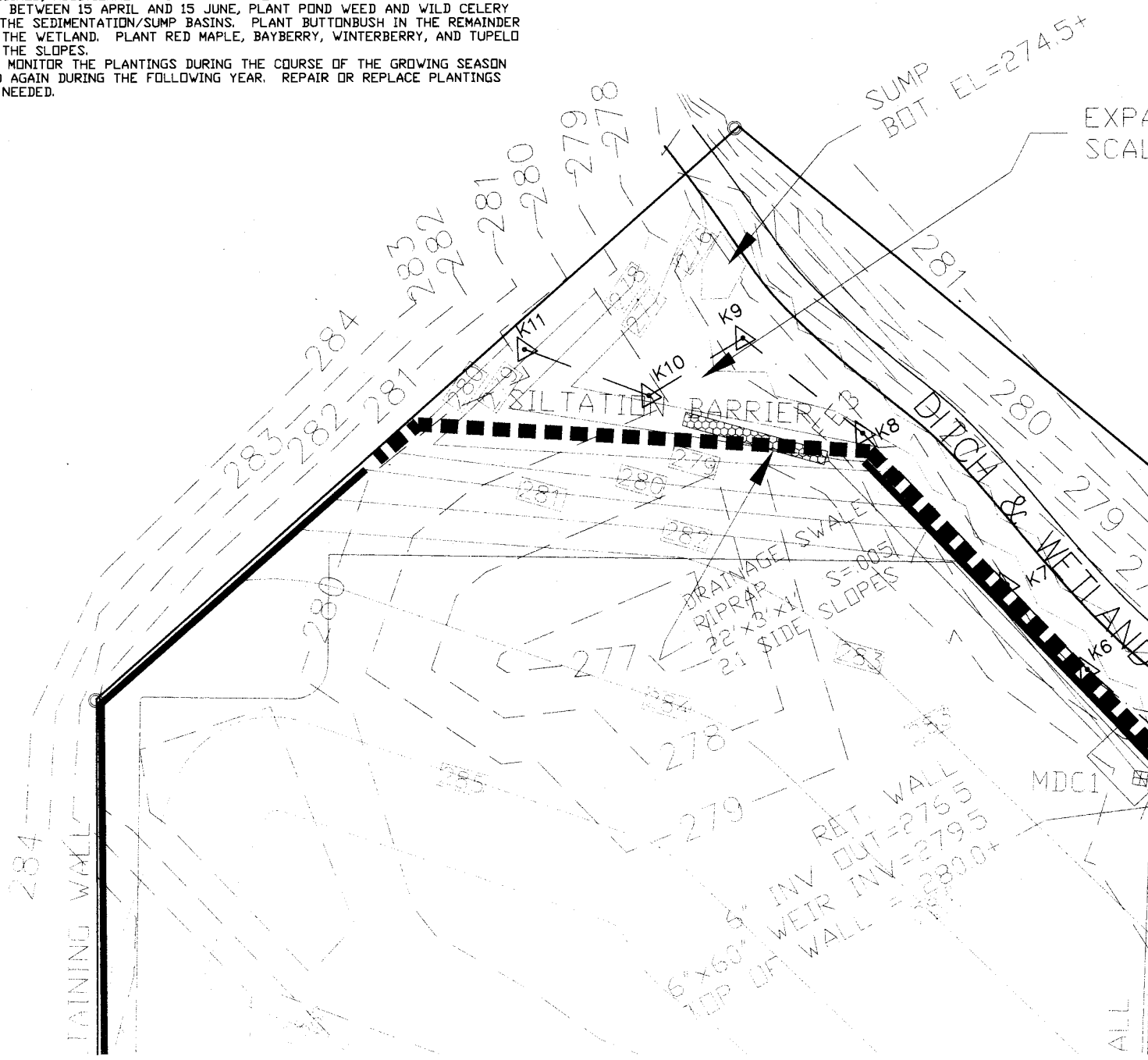
1. CONSTRUCTION OF THE REPLICATION AREA SHALL BE SUPERVISED BY A WETLAND SCIENTIST OR A PROFESSIONAL ENGINEER.
2. A HAYBALE BARRIER SHALL BE INSTALLED AROUND THE ENTIRE RESTORATION AREA PRIOR TO THE START OF WORK.
3. ACCESS TO THE WETLAND AREA WILL BE FROM THE SIDE CLOSEST TO THE PROPOSED PARKING LOT.
4. ORGANIC SOILS FROM THE WETLAND AREAS BEING DISTURBED SHALL BE EXCAVATED AND STOCKPILED.
5. THE WETLAND RESTORATION AREAS SHALL BE EXCAVATED AND CONTOURED USING THE STOCKPILED ORGANIC SOILS IN THE TOP LAYER.
6. THE FINISHED RESTORATION AREAS SHALL BE SCARIFIED WITHOUT SMOOTHING. THE IMPROVED WETLAND AREA SHALL HAVE MICROTOPOGRAPHY AS SHOWN ON THE PLAN. THE DITCH SHALL BE SCALLOPED AND CURVED TO PREVENT STRAIGHT LINE FLOW. OUTLET AND INLET PIPES SHALL FEED TO OR FROM A SUMP AT LEAST 12 INCHES DEEPER THAN THE SURROUNDING ELEVATION.
7. THE WETLAND AREA SHALL BE MULCHED, AND THEN SEEDED WITH WETLAND HERBACEOUS SEEDS. SEEDING SHALL BE COMPLETED AS SOON AS POSSIBLE AFTER THE FINAL CONTOURING, BUT ONLY DURING THE GROWING SEASON.
8. THE DISTURBED SLOPES OUTSIDE OF THE WETLAND AREAS SHALL BE FULLY STABILIZED WITH MULCH AND SHALL BE SEEDED WITH FAST GROWING GRASSES TO PREVENT EROSION. SEEDING SHALL BE DONE AS SOON AS POSSIBLE.
9. THE IMPROVED WETLANDS SHALL BE OBSERVED FOR A PERIOD OF NOT LESS THAN 6 MONTHS REGARDING TYPICAL WATER LEVELS AND FLOW PATTERNS. IF REQUIRED, ADDITIONAL OR SUBSTITUTE PLANTINGS SHALL BE MADE.
10. BETWEEN 15 APRIL AND 15 JUNE, PLANT POND WEED AND WILD CELERY IN THE SEDIMENTATION/SUMP BASINS. PLANT BUTTONBUSH IN THE REMAINDER OF THE WETLAND. PLANT RED MAPLE, BAYBERRY, WINTERBERRY, AND TUPELO ON THE SLOPES.
11. MONITOR THE PLANTINGS DURING THE COURSE OF THE GROWING SEASON AND AGAIN DURING THE FOLLOWING YEAR. REPAIR OR REPLACE PLANTINGS AS NEEDED.

WETLAND PLANTING SCHEDULE:

ZONE 1 - SEDIMENTATION BASIN
1. VALISNARIA AMERICANA
2. POTAMOGETON PECTINATUS

ZONE 2 - DEEP MARSH
3. CEPHALANTHUS OCCIDENTALIS
4.

ZONE 3 - EMBANKMENTS AROUND
5. ACER RUBRUM
6. ILEX VERTICILLATA
7. MYRICA PENSYLVANICA
8. NYSSA SYLVATICA VARI BIFL
9.



	WILD CELERY	18" O.C.
	POND WEED	18" O.C.
	BUTTONBUSH	3' O.C.
	WETLAND SEED MIX	HYDROSEEDED
WETLAND AREA		
	RED MAPLE	3 EACH
	WINTERBERRY	3 EACH
	BAYBERRY	3 EACH
ORA	TUPELO	2 EACH
	GRASS MIX	HYDROSEEDED

AND WETLAND AREA
LLOP DITCH LINE

WETLAND RESTORATION PLAN

DIGITAL CREDIT UNION

255 GREAT ROAD

LITTLETON, MA

APPROVAL UNDER THE SUBDIVISION CONTROL CONTROL LAW IS NOT REQUIRED.
PLANNING BOARD APPROVAL
DATE: Sept 24, 1998

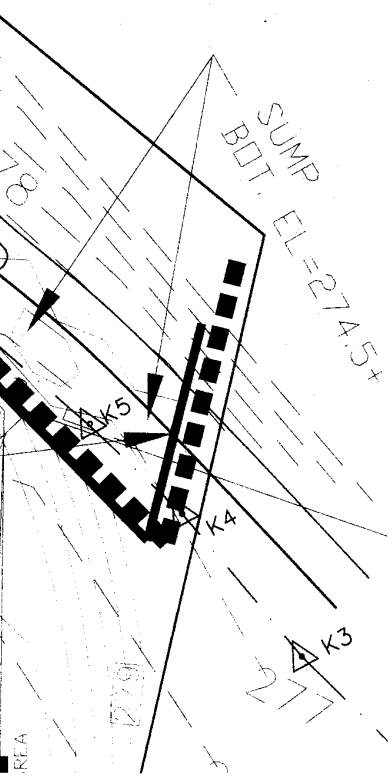
CHAIRMAN

CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

COMMONWEALTH OF MASSACHUSETTS BERNARD H HAMILL # 33595 REGISTERED LAND SURVEYOR

COMMONWEALTH OF MASSACHUSETTS BERNARD H HAMILL # 32401 CIVIL REGISTERED PROFESSIONAL ENGINEER



LEGEND

- MONUMENT FOUND
- CONIFERIOUS TREE
- DECIDIOUS TREE
- EXISTING FIRE HYDRANT
- GAS VALVE
- IRON PIPE FOUND
- LIGHT POST
- MAILBOX
- ROCK
- SHRUB
- SURVEY STATION
- TREE STUMP
- STONEWALL
- UTILITY POLE
- ANCHOR POINT
- WELL
- WATER VALVE
- BENCH MARK
- TREE LINE
- SHRUB LINE
- BRUSH LINE
- ELEVATION POINT
- IRON PIN SET (IPS)
- PK SET
- DRILL HOLE SET (DHS)
- DRAINAGE MAN HOLE
- SEWER MAN HOLE
- EDGE OF WETLAND
- EDGE OF STREAM
- GAS LINE

DATE: 8 JULY 1998
REVISED: 4 AUG. 1998
24 AUG. 1998
11 SEPT. 1998
17 SEPT. 1998

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

PREPARED FOR:

RYAN DEVELOPMENT CORP
4 PARK DR.
WESTFORD, MA 01886

PREPARED BY:

H-STAR ENGINEERING, INC.
9 ACTON ROAD, SUITE 17
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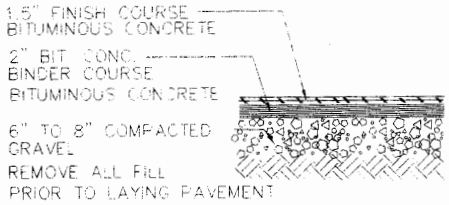
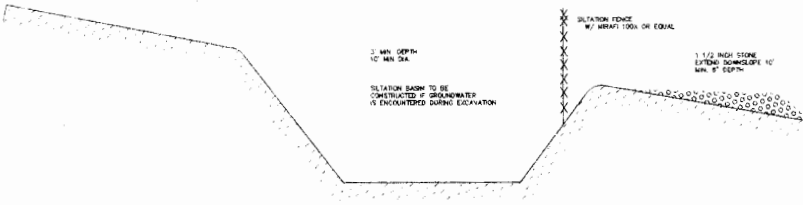
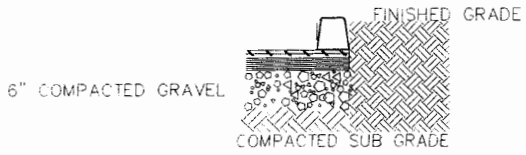


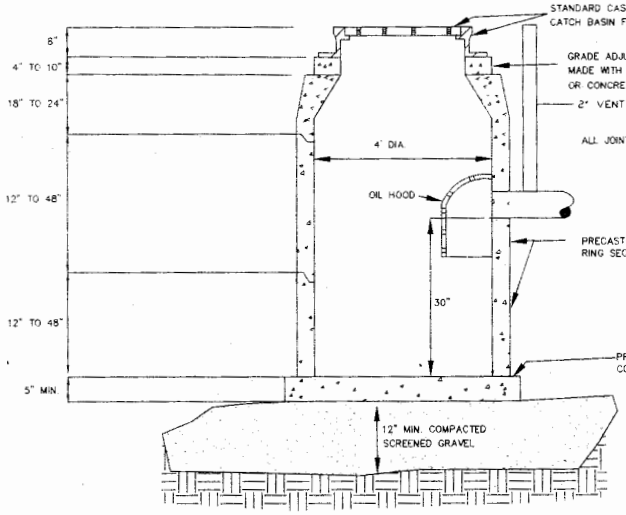
PAVEMENT DETAIL



SILTATION BASIN
NTS

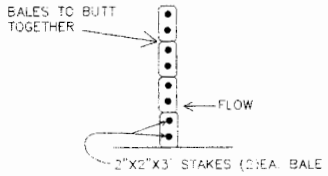


CURB DETAIL



EROSION / SILTATION CONTROL

1. INSTALL HAY BALES FOR TEMPORARY EROSION CONTROL.
2. PERFORM BUILDING AND SITE CONSTRUCTION.
3. RESTORE ALL DISTURBED AREAS.
4. LOAM AND SEED ALL DISTURBED AREAS.
5. REMOVE TEMPORARY EROSION CONTROL AFTER VEGETATION IS ESTABLISHED.



PLAN

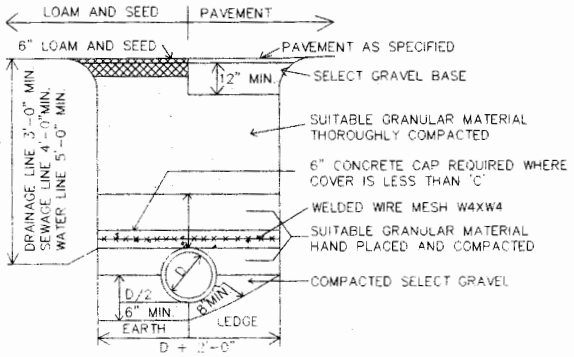
SECTION

TEMPORARY EROSION CONTROL

NO SCALE

TYPICAL CATCH BASIN

NO SCALE



TYPICAL TRENCH DETAIL

DETAIL SHEET

DIGITAL CREDIT UNION

255 GREAT ROAD
LITTLETON, MA

T IRON
RAME AND GRATE

USTMENT MAY BE
COURSES OF BRICK
TE GRADE RINGS
TO GRADE

TS ARE TO BE MORTARED

REINFORCED CONCRETE
TIONS

RECAST REINFORCED
ONCRETE BASE

Method Used to Delineate Wetlands

The delineation on this site was done by vegetation and some preliminary soil examination. Wetland indicator status of plants was determined by referencing Massachusetts General Laws, *National List of Plant Species that Occur in Wetlands: Massachusetts*, and *Guide to Inland Vegetated Wetlands*. Soil status was determined using *Field Indicators for Identifying Hydric Soils in New England*.

Soils on the Site

The soils on the site near the drainage ditch meet Hydric Soil Criteria III D.1 per *Field Indicators for Identifying Hydric Soils in New England*. At an examination point near the edge of the wetland near flag K1 there is a 2" dark A horizon with Chroma 2 or less and value 3 or less. Directly under this the subsoil going to at least a depth of 20" has a color due to wetness of Chroma 1, value 4-5, on the 7.5 YR page of Munsell. Other spots were examined but not recorded. The preliminary soil examination indicates that nearer the front of the property the wetland is contained by the drainage ditch and close to the rear of the property there is a small area where the wetland broadens out. There is a small depression located in the center rear of the property which does not contain wetland soils.

Vegetation on the Site

The vegetation near the drainage ditch includes, but is not limited to:

Scientific Name	Common Name
Rubus sp.	Brambles
Solidago sp.	Goldenrod
Onoclea sensibilis	Sensitive Fern
Juncaceae	Rushes
Cyperaceae	Sedges
Daucus carota	Queen Anne's Lace, Wild Carrot
Lythrum sp.	Loosestrife
Equisetum sp.	Horsetails
Rhus radicans	Poison Ivy
Rhus typhina	Staghorn Sumac
Typha latifolia	Common Cattail
Acer rubrum	Red Maple
Acer negundo	Box Elder, Ashleaf Maple

Lythrum sp. Loosestrife looks much more like *L. alatum* than like *L. salicaria*. I listed it as just genera since salicaria is so prolific around here and alatum is supposedly only localized.

APPROVAL UNDER THE SUBDIVISION CONTROL
CONTROL LAW IS NOT REQUIRED.
PLANNING BOARD APPROVAL
DATE: Sept 24 1998

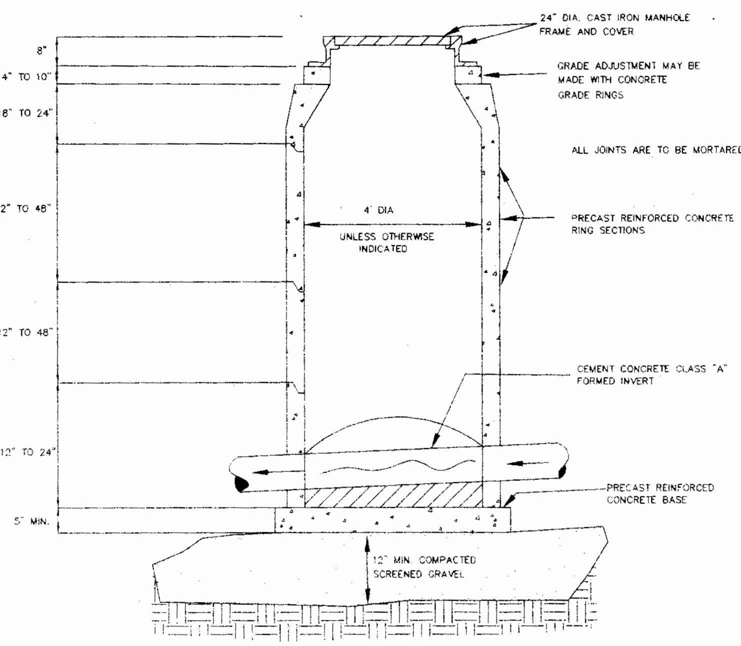
CHAIRMAN

CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

COMMONWEALTH OF MASSACHUSETTS
BERNARD H. HAMILL
No. 33595
REGISTERED LAND SURVEYOR

COMMONWEALTH OF MASSACHUSETTS
BERNARD H. HAMILL
No. 32401
CIVIL
REGISTERED PROFESSIONAL ENGINEER



TYPICAL DRAINAGE MANHOLE

NO SCALE

DATE: 8 JULY 1998
REVISED: 4 AUG. 1998

PREPARED FOR:

RYAN DEVELOPMENT CORP
4 PARK DR.
WESTFORD, MA 01886

PREPARED BY:

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9 ACTON ROAD, SUITE 17
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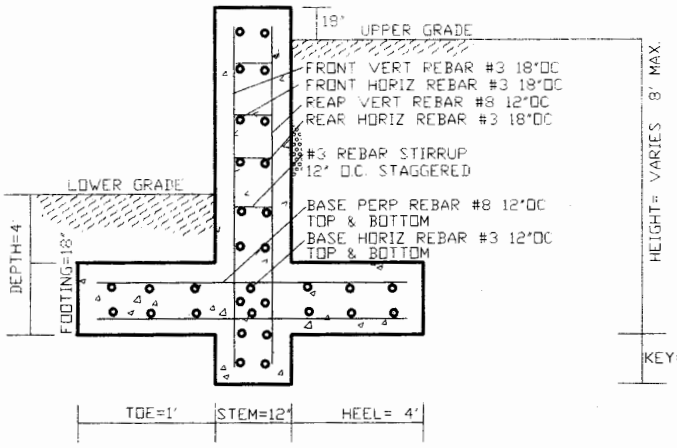
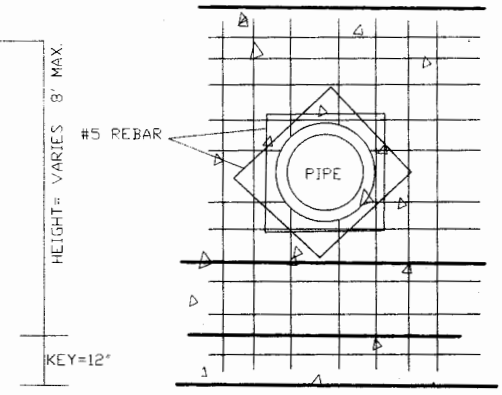
SHEET 7 OF 9



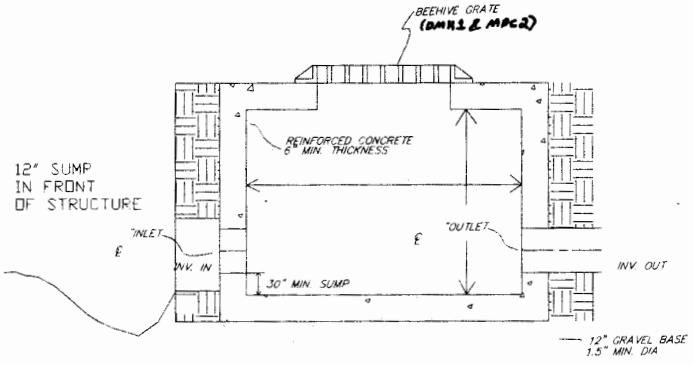
RETAINING WALL DETAIL
NTS



RETAINING WALL PENETRATION
NTS

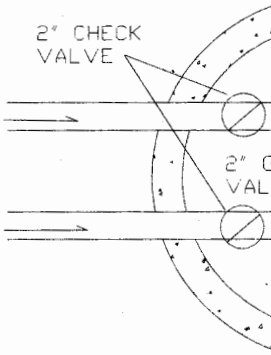
NOTES & SPECIFICATIONS
1. MINIMUM REBAR COVER TO BE 3 INCHES.
2. MINIMUM CONCRETE COMPRESSIVE STRENGTH: 4000 PSI
3. MINIMUM REBAR YIELD STRENGTH: 60 KSI
4. FOOTING TO BE PLACED ON COMPACTED 12" GRAVEL BASE.
5. CONCRETE TO BE VIBRATED INTO PLACE.
6. ALL REBAR CROSSINGS TO BE TIED.
7. WALL IS DESIGNED FOR LATERAL LOADS ONLY.
8. EXPANSION JOINTS TO BE PLACED EVERY 30 FEET.
9.
10. KEYWAY TO BE CONSTRUCTED 4"x8"xLENGTH OF WALL.
11. REBAR SPLICES TO OVERLAP BY 50 DIAMETERS.
12. COLD JOINTS SHALL BE PERMITTED ONLY AT EXPANSION JOINTS.
13. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE ACI CODE

FLARED



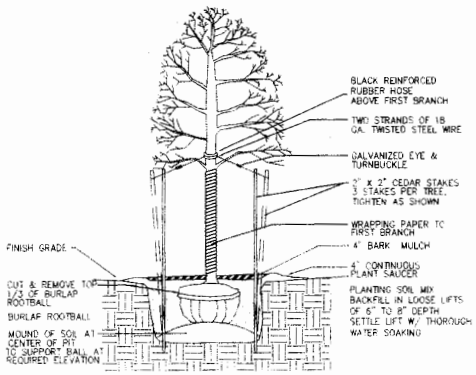
DMH1 (to CB4)
RIM=280.4 (BEEHIVE GRATE)
SUMP=277.0
6" INV IN=279.55
8" INV OUT=279.54

DMH2 (to CB "A")
RIM=280.9 (BEEHIVE GRATE)
SUMP=276.50
5" INV IN=279.0
4" INV IN=279.5
12" x 6" INV IN=280.40
12" INV OUT=278.90

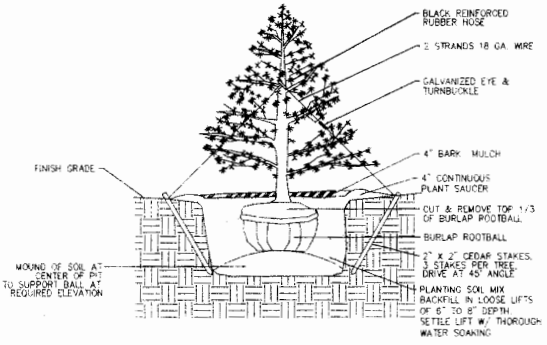


CONCRET
W/ CI F

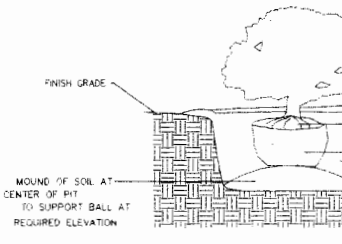
SPECIAL OUTLET STRUCTURE DETAIL
(DMH 1)



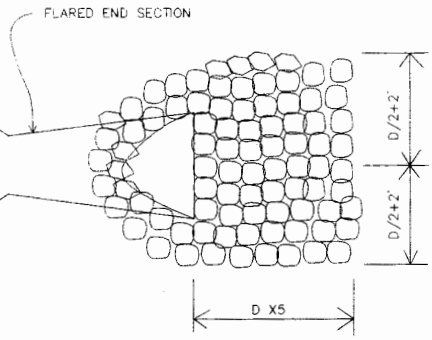
TREE DETAIL 2
SCALE 3/4" = 1'-0" C1.0

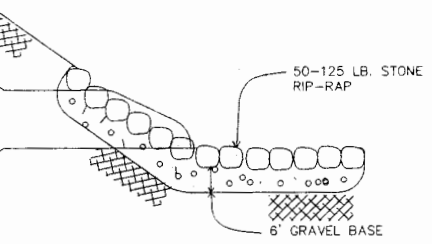


EVERGREEN DETAIL 3
SCALE 3/4" = 1'-0" C1.0

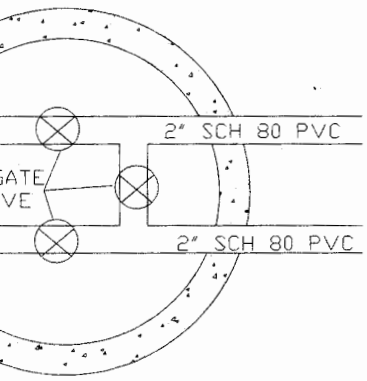


SHRUB DE

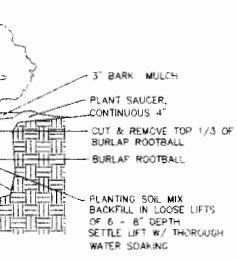




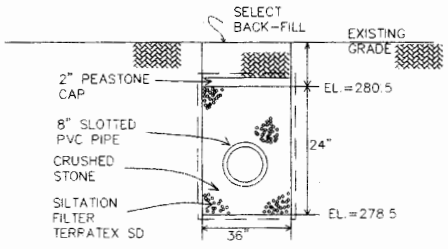
) END SECTION RIP-RAP
NO SCALE



E VALVE PIT
RAME & COVER



TAIL 4



LEACHING TRENCH DETAIL
(N.T.S.)

DETAIL SHEET
DIGITAL CREDIT UNION
255 GREAT ROAD
LITTLETON, MA

APPROVAL UNDER THE SUBDIVISION CONTROL CONTROL LAW IS NOT REQUIRED.
PLANNING BOARD APPROVAL
DATE: Sept 2nd 1998

CHAIRMAN

CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

Bernard H. Hamill

COMMONWEALTH OF MASSACHUSETTS BERNARD H. HAMILL # 33595 REGISTERED LAND SURVEYOR

COMMONWEALTH OF MASSACHUSETTS BERNARD H. HAMILL # 32401 CIVIL REGISTERED PROFESSIONAL ENGINEER

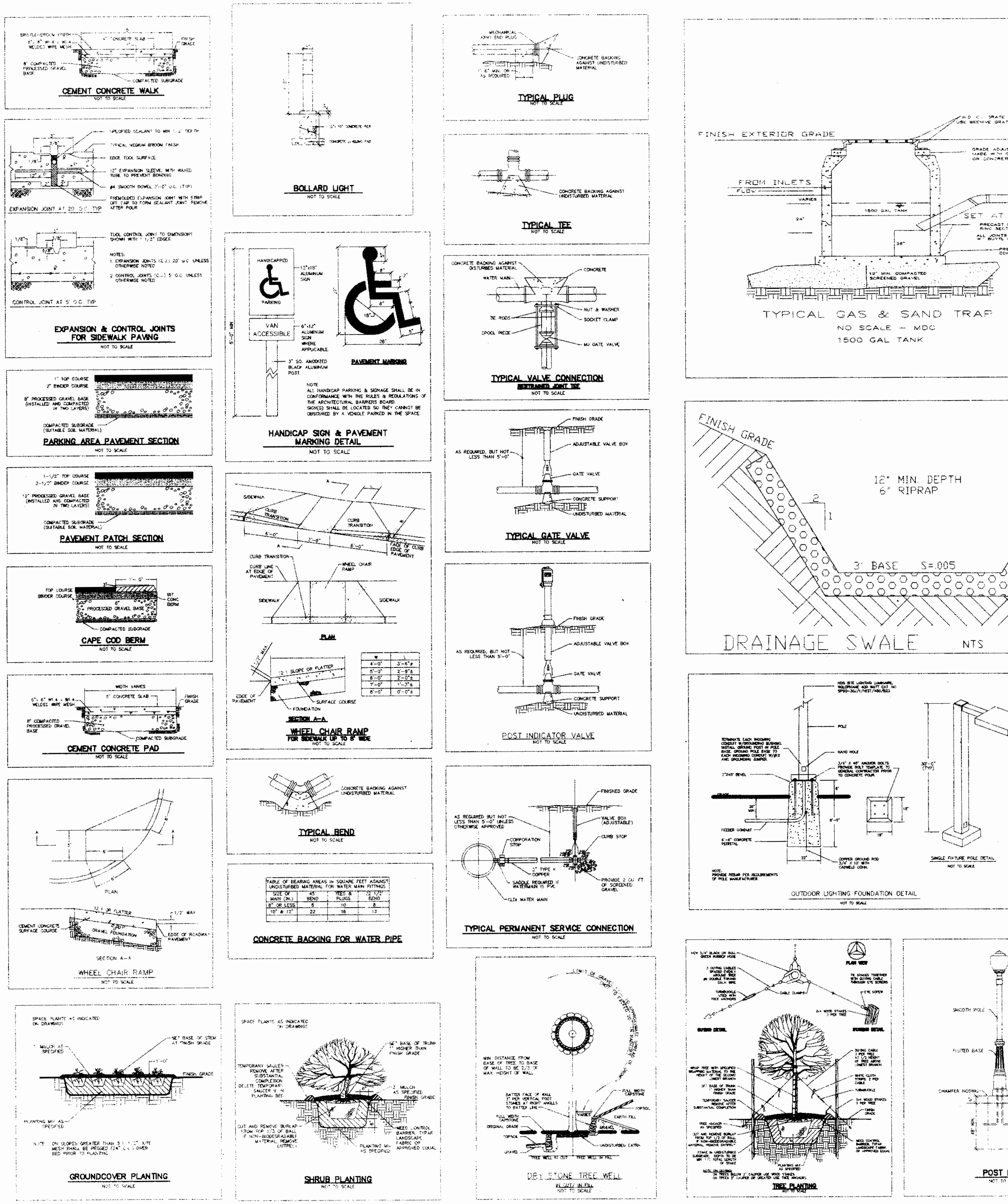
DATE: 8 JULY 1998
REVISED: 4 AUG. 1998
24 AUG. 1998
11 SEPT. 1998

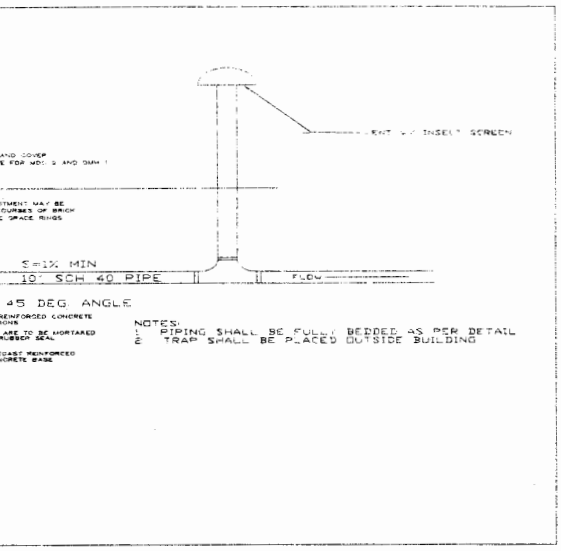
PREPARED FOR:

RYAN DEVELOPMENT CORP
4 PARK DR.
WESTFORD, MA 01886

PREPARED BY:

H-STAR ENGINEERING, INC.
9 ACTON ROAD, SUITE 17
CHELMSFORD, MA 01824
(978) 256-9216


CEMENT CONCRETE WALK
NOT TO SCALE
BOLLARD LIGHT
NOT TO SCALE
TYPICAL PLUG
NOT TO SCALE
TYPICAL GAS & SAND TRAP
NO SCALE – MDC
1500 GAL TANK
FINISH EXTERIOR GRADE
FROM INLETS
EXPANSION & CONTROL JOINTS FOR SIDEWALK PAVING
NOT TO SCALE
TYPICAL TEE
NOT TO SCALE
HANDICAP SIGN & PAVEMENT MARKING DETAIL
NOT TO SCALE
PAVEMENT MARKING
TYPICAL VALVE CONNECTION
NOT TO SCALE
PARKING AREA PAVEMENT SECTION
NOT TO SCALE
FINISH GRADE
12" MIN. DEPTH
6" RIPRAP
3' BASE
S=.005
DRAINAGE SWALE
NTS
TYPICAL GATE VALVE
NOT TO SCALE
PAVEMENT PATCH SECTION
NOT TO SCALE
CAPE COD BERM
NOT TO SCALE
WHEEL CHAIR RAMP FOR SIDEWALK UP TO 6' WIDE
NOT TO SCALE
POST INDICATOR VALVE
NOT TO SCALE
CEMENT CONCRETE PAD
NOT TO SCALE
OUTDOOR LIGHTING FOUNDATION DETAIL
NOT TO SCALE
TYPICAL BEND
NOT TO SCALE
TYPICAL PERMANENT SERVICE CONNECTION
NOT TO SCALE
CONCRETE BACKING FOR WATER PIPE
WHEEL CHAIR RAMP
NOT TO SCALE
GROUNDCOVER PLANTING
NOT TO SCALE
SHRUB PLANTING
NOT TO SCALE
DRY STONE TREE WELL
NOT TO SCALE
TREE PLANTING
NOT TO SCALE



DETAIL INDEX SHEET

DIGITAL CREDIT UNION

255 GREAT ROAD

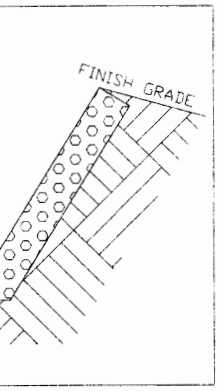
LITTLETON, MA

APPROVAL UNDER THE SUBDIVISION CONTROL CONTROL LAW IS NOT REQUIRED.

PLANNING BOARD APPROVAL

DATE: Sept 24 1998

CHAIRMAN



CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

BERNARD H. HAMILL # 33595 REGISTERED LAND SURVEYOR

BERNARD H. HAMILL # 32401 CIVIL REGISTERED PROFESSIONAL ENGINEER

PLAN PREPARED BY J. LAGRASSE & ASSOC.

DATE: 8 JULY 1998

REVISED: 4 AUG. 1998
11 SEPT. 1998
17 SEPT. 1998

SHEET 9 OF 9

PREPARED FOR:

RYAN DEVELOPMENT CORP

4 PARK DR.

WESTFORD, MA 01886

PREPARED BY:

H-STAR ENGINEERING, INC.

9 ACTON ROAD, SUITE 17

CHELMSFORD, MA 01824

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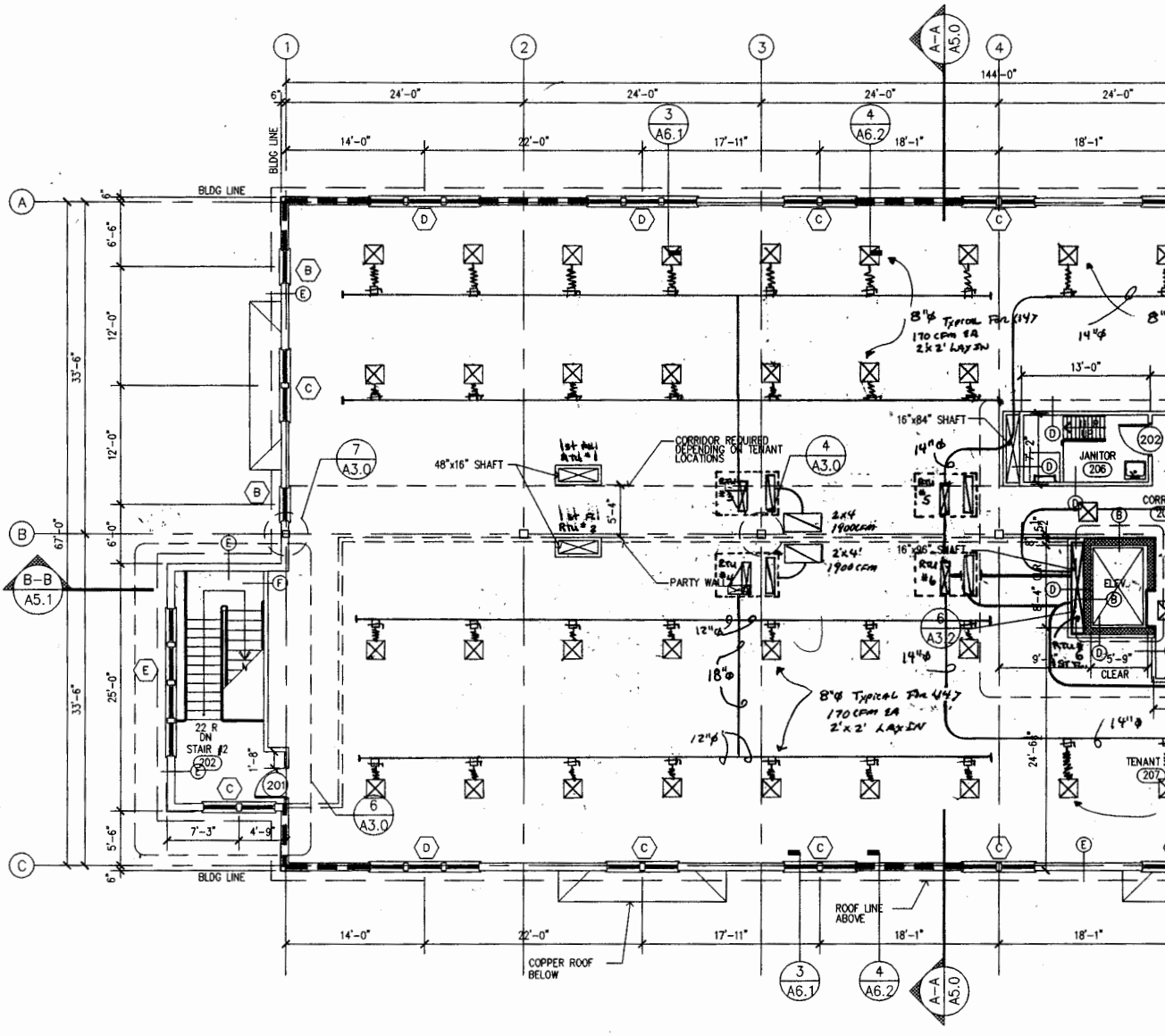
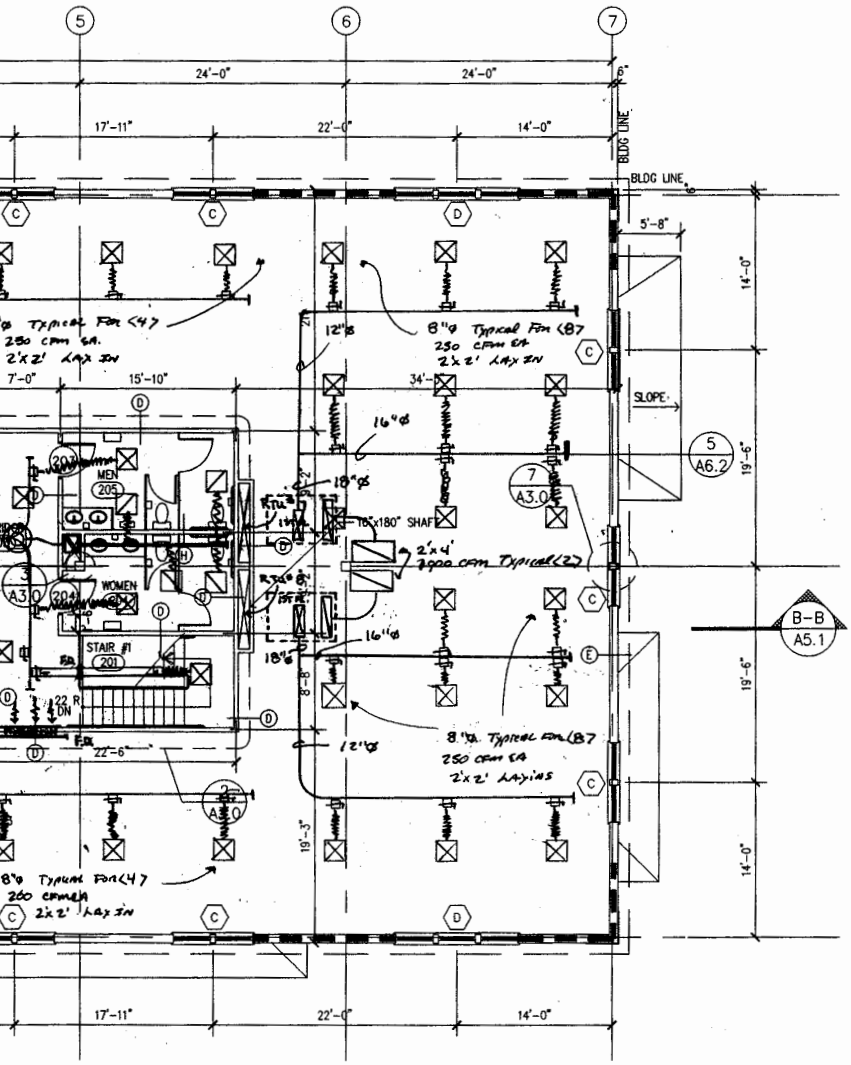




SECOND FLOOR PLAN (1 / A1.1)
SCALE: 1/8"=1'-0"

LEGEND

- SOFFIT / CEILING CHANGE OR CABINETS, AS NOTED
- PROPOSED WALL / PARTION
- (A) PARTITION / WALL TYPE
- (101) DOOR & DOOR NUMBER
- WINDOW & WINDOW NUMBER
- (A) DETAIL / SECTION MARK SECTION # / SHEET LOCATION
- BUILDING SECTION SECTION # / SHEET LOCATION
- A7.0 INTERIOR ELEVATIONS
- STAIR #1 (101) ROOM NAME & NUMBER

Joseph D. LaGrasse & Associates Inc.
Architecture * Engineering * Land Planning * Interior Design
One Elm Square
Andover, Massachusetts 01810
(978) 470-3675

PREPARED FOR
RYAN DEVELOPEMENT

SHEET TITLE
SECOND FLOOR PLAN

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

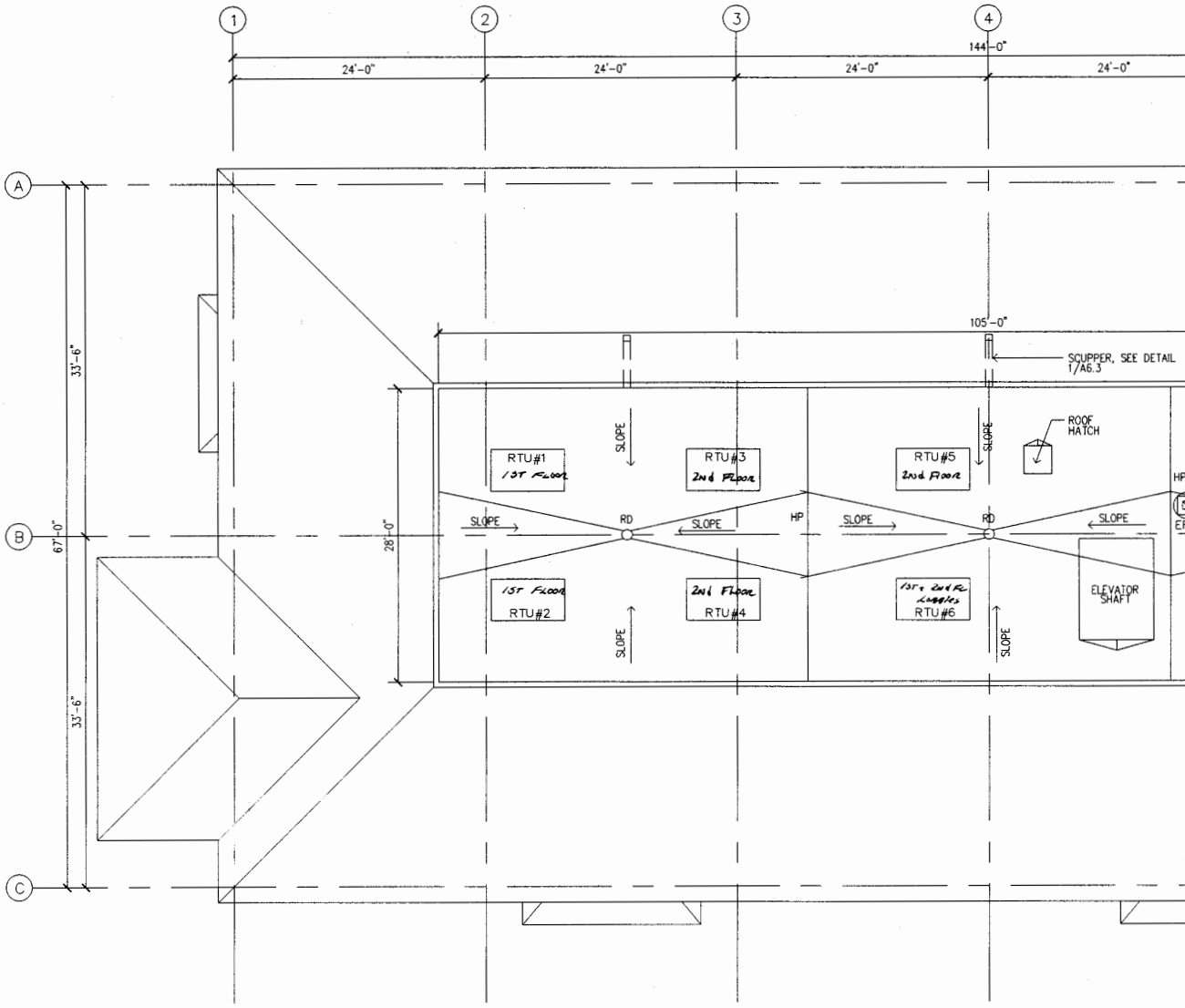
#	REVISION

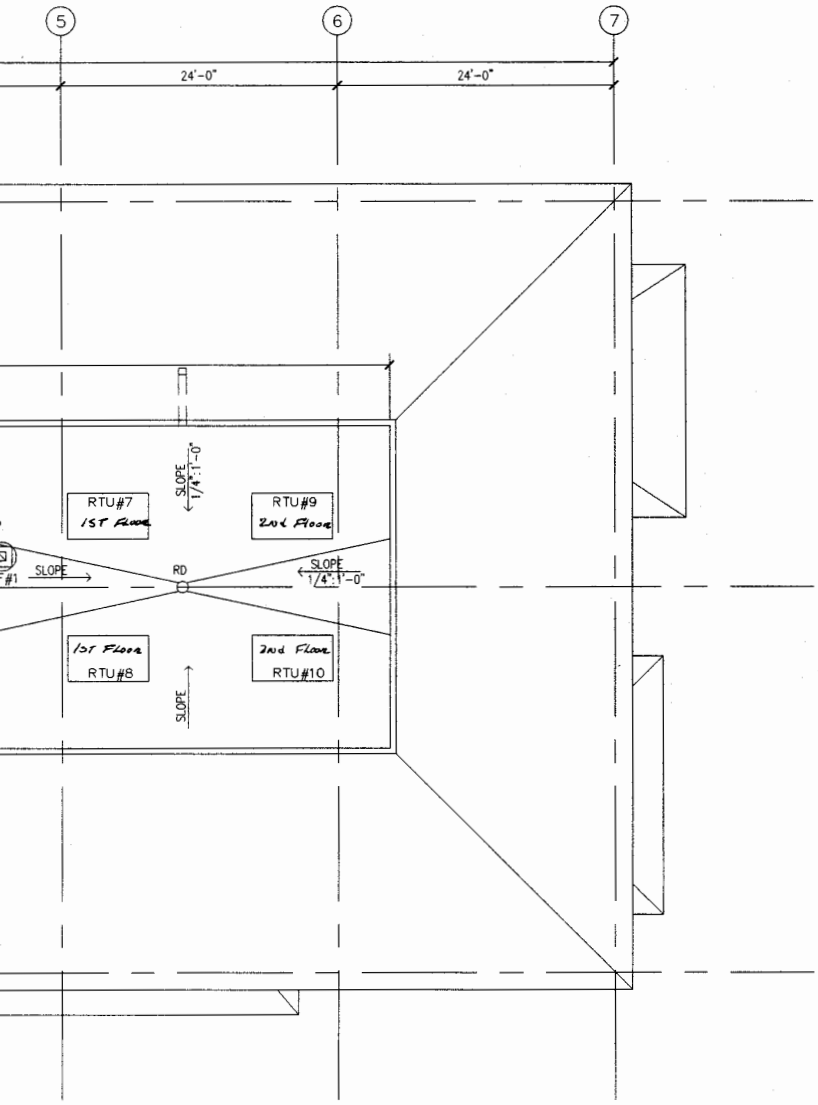
DATE
SEP. 18, 1998

SCALE
1/8"=1'-0"

PROJECT NO.
1626

SHEET NO.
A1.1


1
2
3
4
24'-0"
24'-0"
24'-0"
144'-0"
24'-0"
A
B
C
33'-6"
67'-0"
33'-6"
105'-0"
SCUPPER, SEE DETAIL 1/A6.3
28'-0"
RTU#1
1ST FLOOR
RTU#3
2nd FLOOR
RTU#5
2nd FLOOR
ROOF HATCH
SLOPE
SLOPE
SLOPE
SLOPE
SLOPE
SLOPE
SLOPE
SLOPE
RD
RD
HP
1ST FLOOR
RTU#2
2nd FLOOR
RTU#4
1ST & 2nd FL LUGGAGE
RTU#6
ELEVATOR SHAFT



ROOF PLAN (1 / A1.2)
SCALE: 1/8"=1'-0"

Joseph D. LaGrasse & Associates Inc.
Architecture * Engineering * Land Planning * Interior Design
One Elm Square
Andover, Massachusetts 01810
(978) 470-3675

PREPARED FOR
RYAN DEVELOPEMENT

SHEET TITLE
ROOF PLAN

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

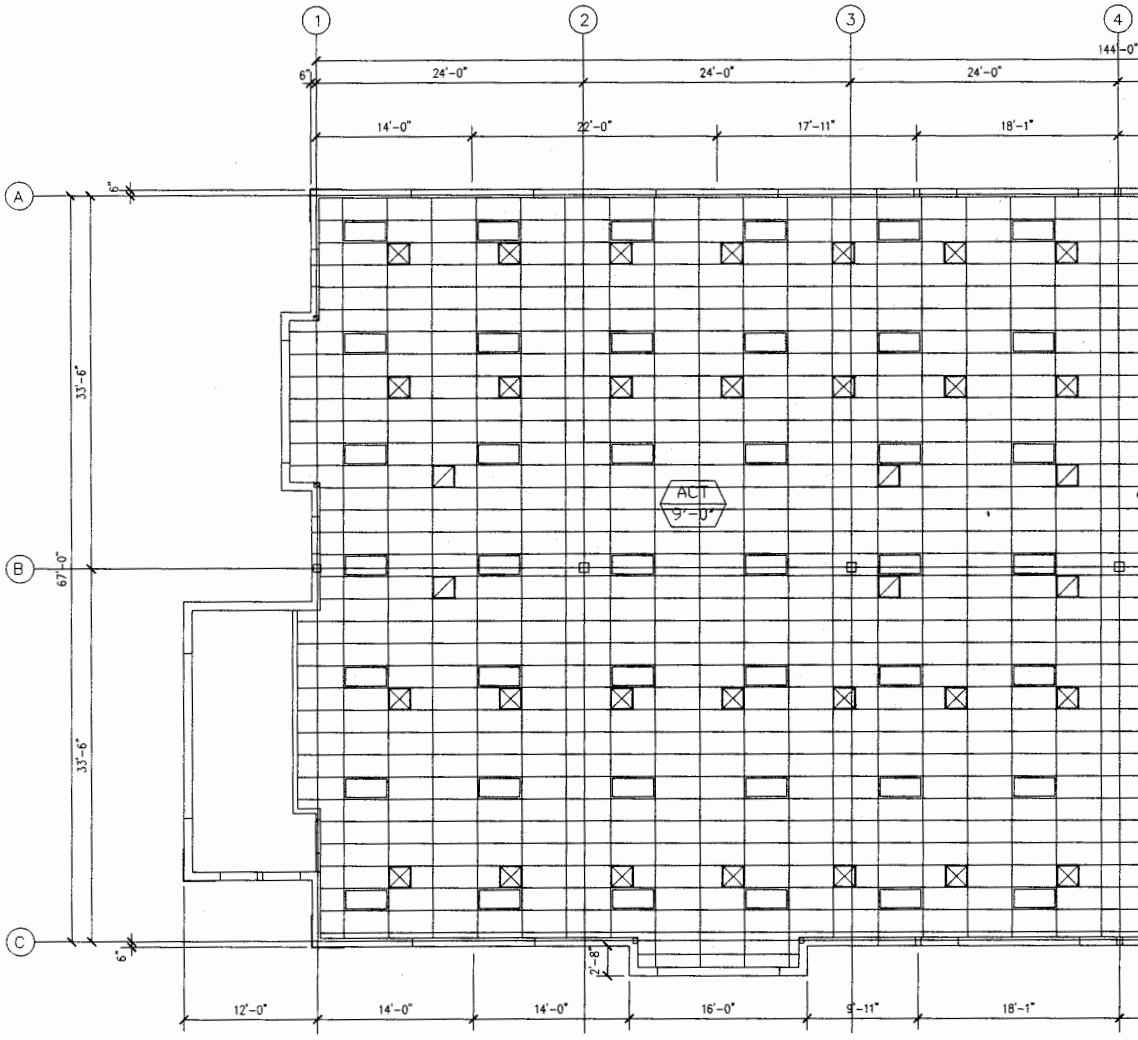
#	REVISION

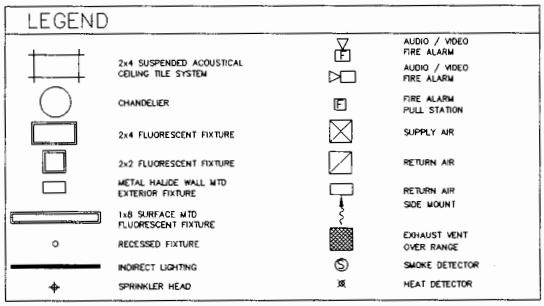
DATE
SEP. 18, 1998

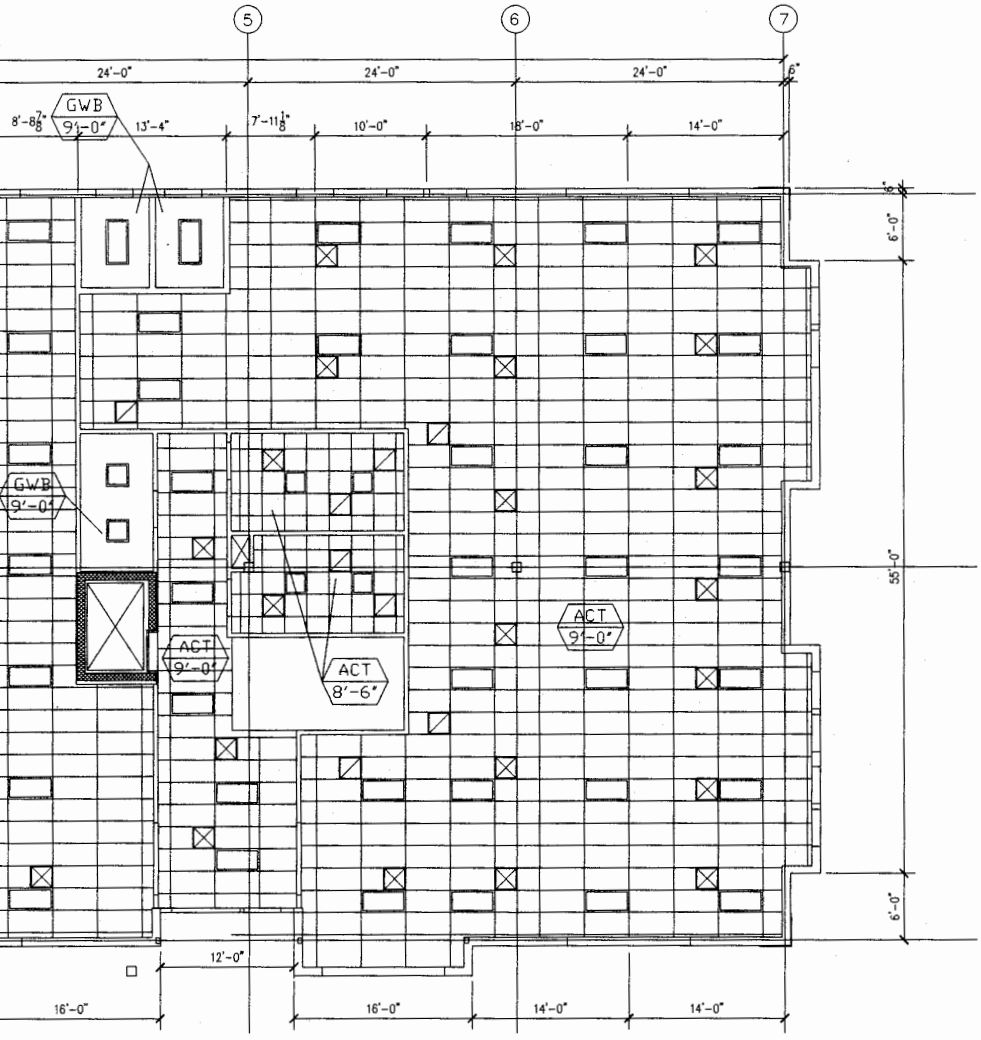
SCALE
1/8"=1'-0"

PROJECT NO.
1626

SHEET NO.
A1.2


1
2
3
4
144'-0"
6"
24'-0"
24'-0"
24'-0"
14'-0"
22'-0"
17'-11"
18'-1"
A
B
C
33'-6"
67'-0"
33'-6"
6"
ACT
9'-0"
2'-8"
12'-0"
14'-0"
14'-0"
16'-0"
9'-11"
18'-1"


LEGEND
2x4 SUSPENDED ACOUSTICAL CEILING TILE SYSTEM
CHANDELIER
2x4 FLUORESCENT FIXTURE
2x2 FLUORESCENT FIXTURE
METAL HALIDE WALL MTD EXTERIOR FIXTURE
1x8 SURFACE MTD FLUORESCENT FIXTURE
RECESSED FIXTURE
INDIRECT LIGHTING
SPRINKLER HEAD
AUDIO / VIDEO FIRE ALARM
AUDIO / VIDEO FIRE ALARM
FIRE ALARM PULL STATION
SUPPLY AIR
RETURN AIR
RETURN AIR SIDE MOUNT
EXHAUST VENT OVER RANGE
SMOKE DETECTOR
HEAT DETECTOR



FIRST FLOOR REFLECTED CEILING PLAN (1 / A2.0)
SCALE: 1/8"=1'-0"

Joseph D. LaGrasse & Associates Inc.
Architecture * Engineering * Land Planning * Interior Design
One Elm Square
Andover, Massachusetts 01810
(978) 470-3675

PREPARED FOR
RYAN DEVELOPEMENT

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

SHEET TITLE
FIRST REFLECTED CEILING PLAN

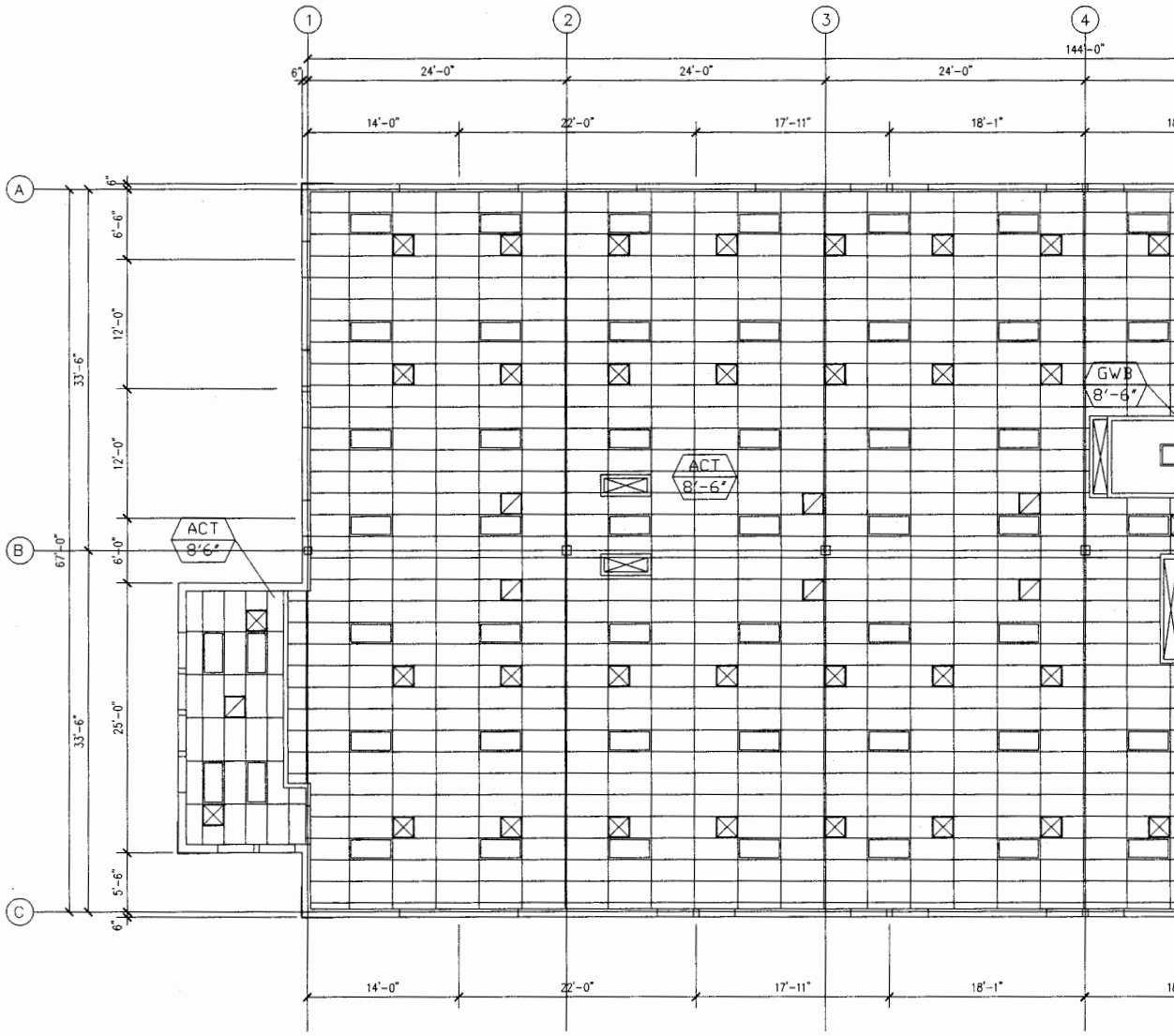
REVISION
#

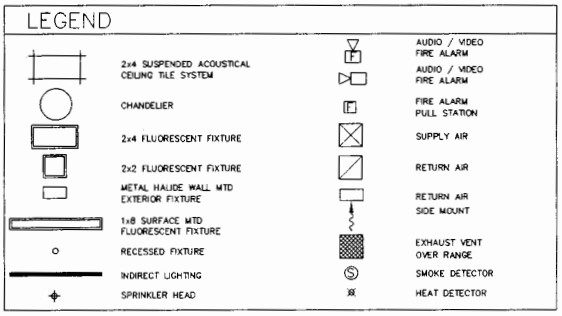
DATE
SEP. 18, 1998

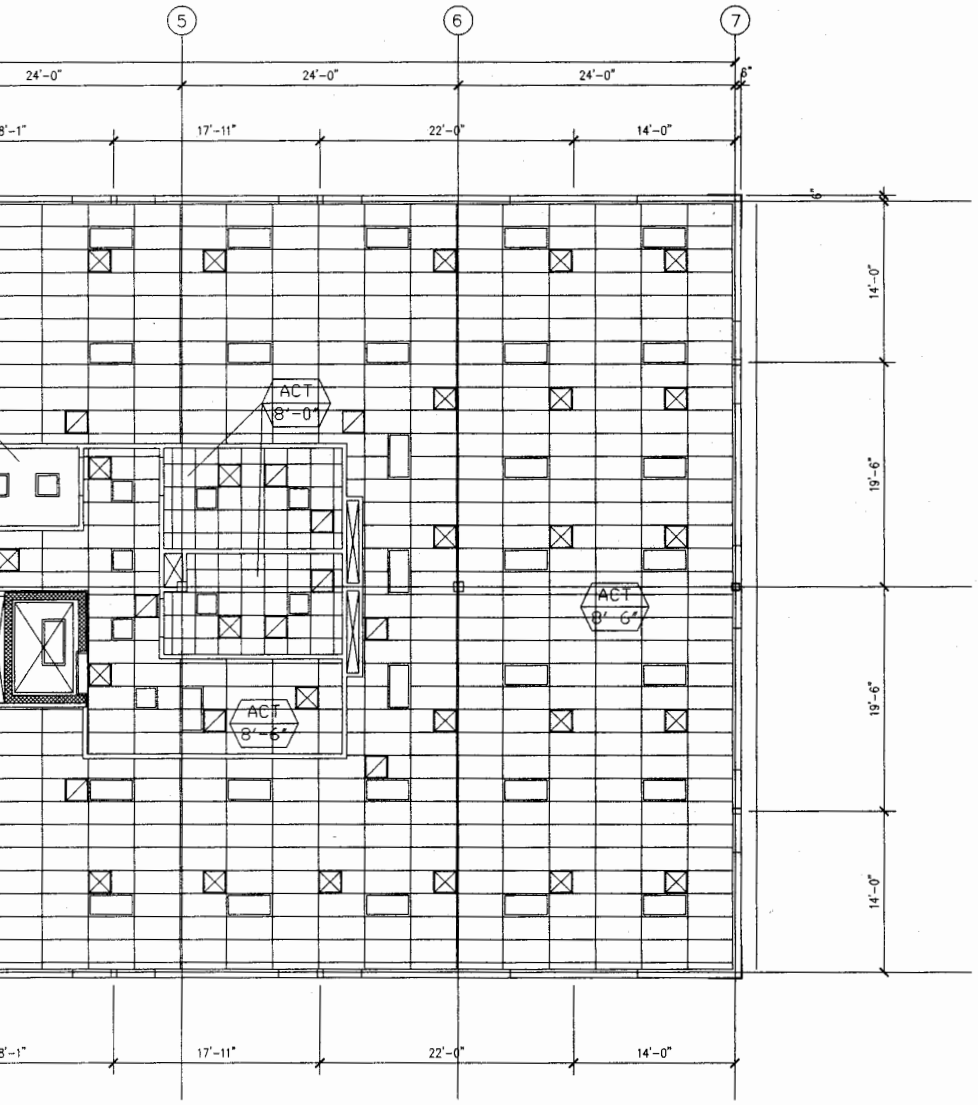
SCALE
AS NOTED

PROJECT NO.
1626

SHEET NO.
A2.0


1
2
3
4
144'-0"
6"
24'-0"
24'-0"
24'-0"
14'-0"
22'-0"
17'-11"
18'-1"
A
B
C
6"
6'-6"
12'-0"
12'-0"
6'-0"
33'-6"
67'-0"
6'-0"
25'-0"
33'-6"
5'-6"
6"
ACT
8'6"
ACT
8'-6"
GWB
8'-6"
14'-0"
22'-0"
17'-11"
18'-1"


LEGEND
2x4 SUSPENDED ACOUSTICAL CEILING TILE SYSTEM
CHANDELIER
2x4 FLUORESCENT FIXTURE
2x2 FLUORESCENT FIXTURE
METAL HALIDE WALL MTD EXTERIOR FIXTURE
1x8 SURFACE MTD FLUORESCENT FIXTURE
RECESSED FIXTURE
INDIRECT LIGHTING
SPRINKLER HEAD
AUDIO / VIDEO FIRE ALARM
AUDIO / VIDEO FIRE ALARM
FIRE ALARM PULL STATION
SUPPLY AIR
RETURN AIR
RETURN AIR SIDE MOUNT
EXHAUST VENT OVER RANGE
SMOKE DETECTOR
HEAT DETECTOR



SECOND FLOOR REFLECTED CEILING PLAN (1 / A2.1)

SCALE: 1/8"=1'-0"

Joseph D. LaGrasse & Associates Inc.
Architecture * Engineering * Land Planning * Interior Design
One Elm Square
Andover, Massachusetts 01810
(978) 470-3675

PREPARED FOR
RYAN DEVELOPEMENT

SHEET TITLE
SECOND REFLECTED CEILING PLAN

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

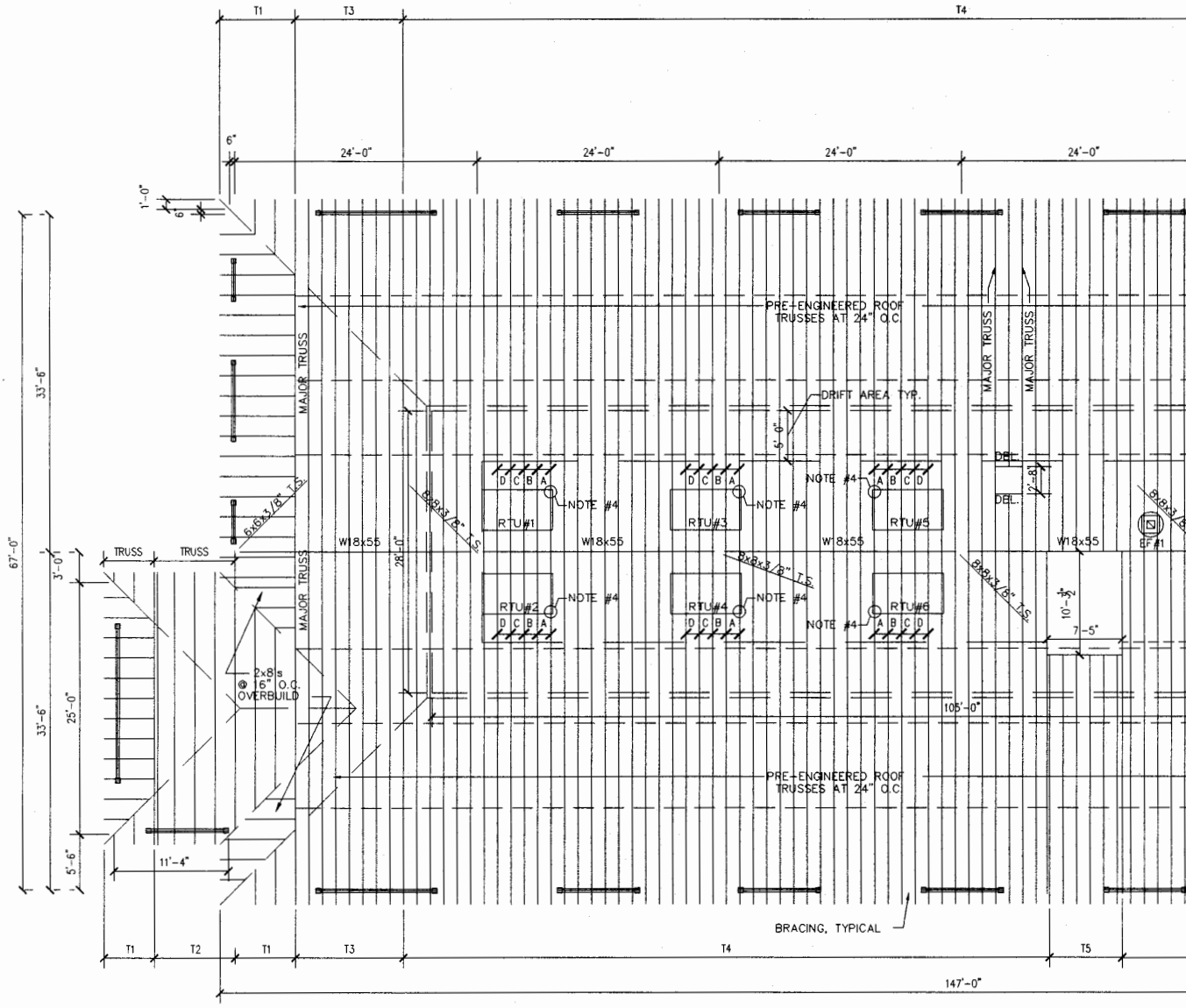
#	REVISION

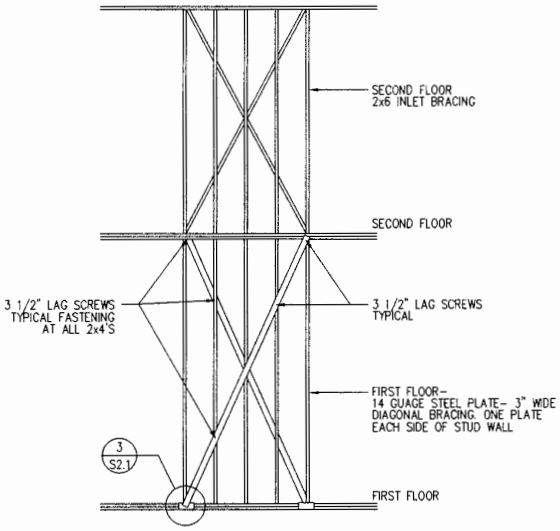
DATE
SEP. 18, 1998

SCALE
AS NOTED

PROJECT NO.
1626

SHEET NO.
A2.1





BRACING ELEVATION (2 / S2.1) SCALE: 1/4"=1'-0"

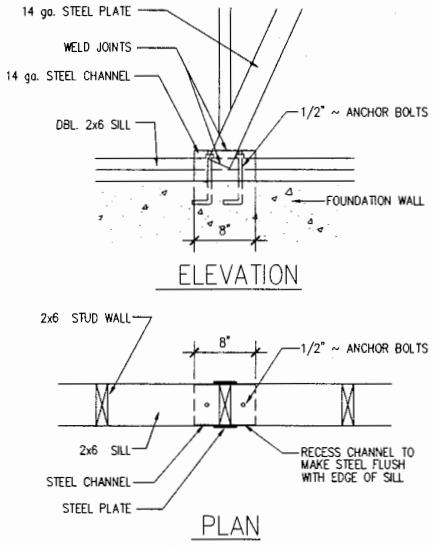
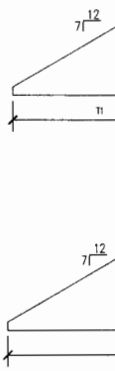
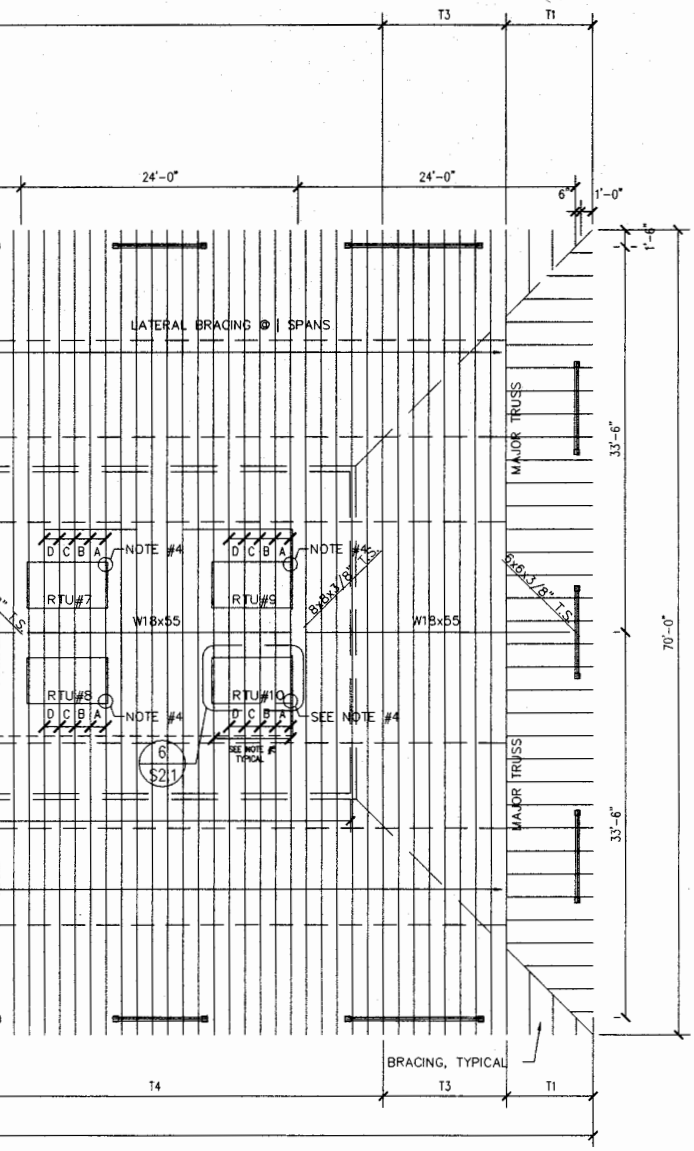


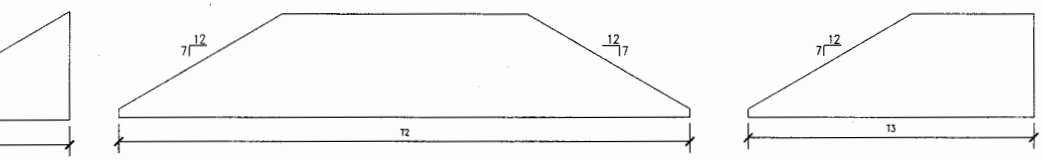
PLATE DETAIL (3 / S2.1) SCALE: 1"=1'-0"

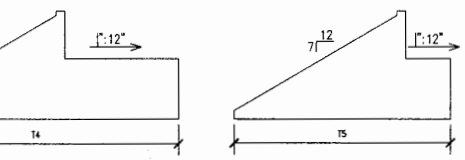




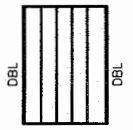
NOTE:
ALL HEADERS SHALL BE 3-2x10'S W/ \" PLYWOOD FILLERS AND 4x6 POSTS AT INTERMEDIATE JAMBS

ROOF FRAMING PLAN (1 / S2.1)
SCALE: 1/8"=1'-0"

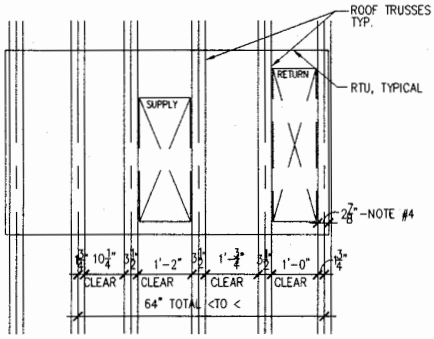




TRUSS PROFILES (4 / S2.1)
SCALE: N.T.S.



PENTHOUSE ROOF (5 / S2.1)
SCALE: 1/8"=1'-0"



RTU DETAIL (6 / S2.1)
SCALE: 1/2"=1'-0"

NOTES:

1. EACH UNIT IS A 5 TON RTU, 7'-0" x 4'-0"
2. ALL UNITS WEIGH APPROX. 850 LBS. INCL. CURB
3. ALL UNITS ARE APPROX. 34" HIGH PLUS 12" CURB
4. ALIGN CURB TO BEAR ON ROOF TRUSS, AND RETURN AIR TO PASS BETWEEN ROOF TRUSSES
5. TYPICAL TRUSS CLEAR SPACING BETWEEN ROOF TRUSSES AT A,B,C,&D LOCATIONS BEGINNING AT EXTERIOR CORNER DESCRIBED UNTER NOTE #4
6. TRUSS MANUFACURER SHALL DESIGN APPROPRIATE DRIFT LOADING @ ROOF

Joseph D. LaGrasse & Associates Inc.
Architecture * Engineering * Land Planning * Interior Design
One Elm Square
Andover, Massachusetts 01810
(978) 470-3675

PREPARED FOR
RYAN DEVELOPEMENT

SHEET TITLE
ROOF FRAMING PLAN

PROJECT NAME
LITTLETON OFFICE PARK

PROJECT ADDRESS
GREAT ROAD
LITTLETON, MA

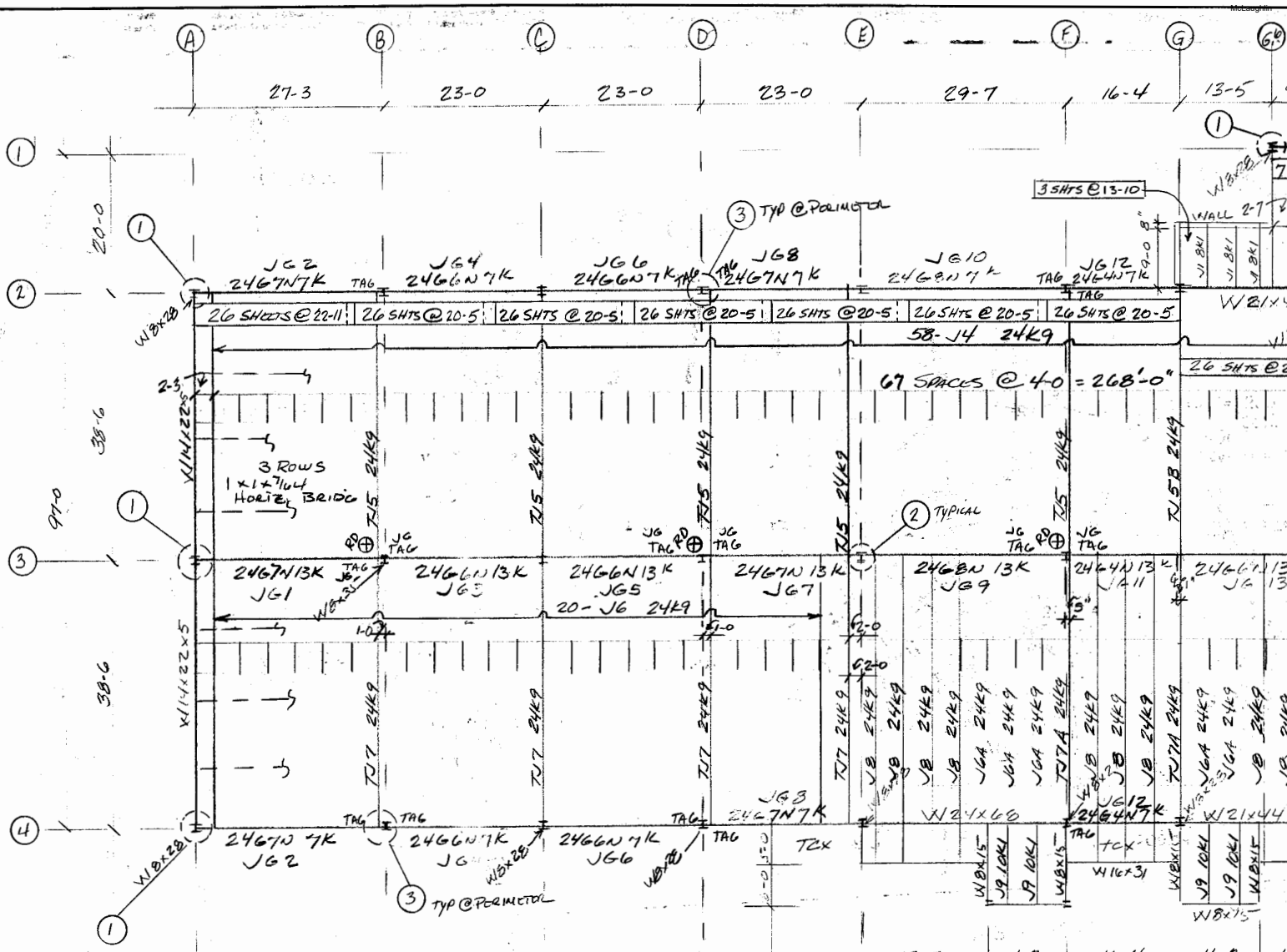
#	REVISION
1	08/21/98
2	9/15/98 TOTAL SHEET

DATE
AUGUST 3, 1998

SCALE
1/8"=1'-0"

PROJECT NO.
1626

SHEET NO.
S2.1



Note: *Continental Steel Joists, will not be responsible for any back charges, material fixes or any changes or charges to our scope of work unless first submitted in writing and approved by Continental Steel Joists.*

OPEN WEB JOISTS

1) PAINT: RED
2) BRIDGING: HORIZONTAL. 1x1x7/64 CONT. T & B
~~WELDED CROSS BRIDGING~~
ALL BRIDGING WITH ANCHORS TO BE INSTALLED BEFORE CONSTRUCTION LOADS ARE APPLIED. LAP HORIZONTAL BRIDGING A MAXIMUM OF 4" AND WELD. ALL BRIDGING SHALL BE WELDED TO THE TOP AND BOTTOM CHORDS OF EACH JOIST.
3) CEILING EXTENSIONS NOT REQ'D FOR SUSPENDED CEILINGS.
4) ENGINEER NOTE: NO END MOMENTS ARE INDICATED ON FRAMING PLANS. JOISTS HAVE BEEN DESIGNED FOR SIMPLE SPAN CONDITION PER SJI SPECS. WELDING OF BOTTOM CHORD WILL INDUCE MOMENTS IN JOIST AND SHEAR AT JOIST SEAT. PLEASE INDICATE APPROVAL TO ELIMINATE BOTTOM CHORD EXTENSIONS.
5) JOIST WELDING - 1/8" x 1" FILLET BOTH SIDES MIN.

LONG SPAN JOISTS

1) PAINT:
2) BRIDGING: SHALL BE BOLTED CROSS BRIDGING EXCEPT AS NOTED ON LAYOUT.
3) SEE NOTES #3 & 4 FOR OPEN WEB.
4) JOIST WELDING 1/4" x 2" FILLET BOTH SIDES.

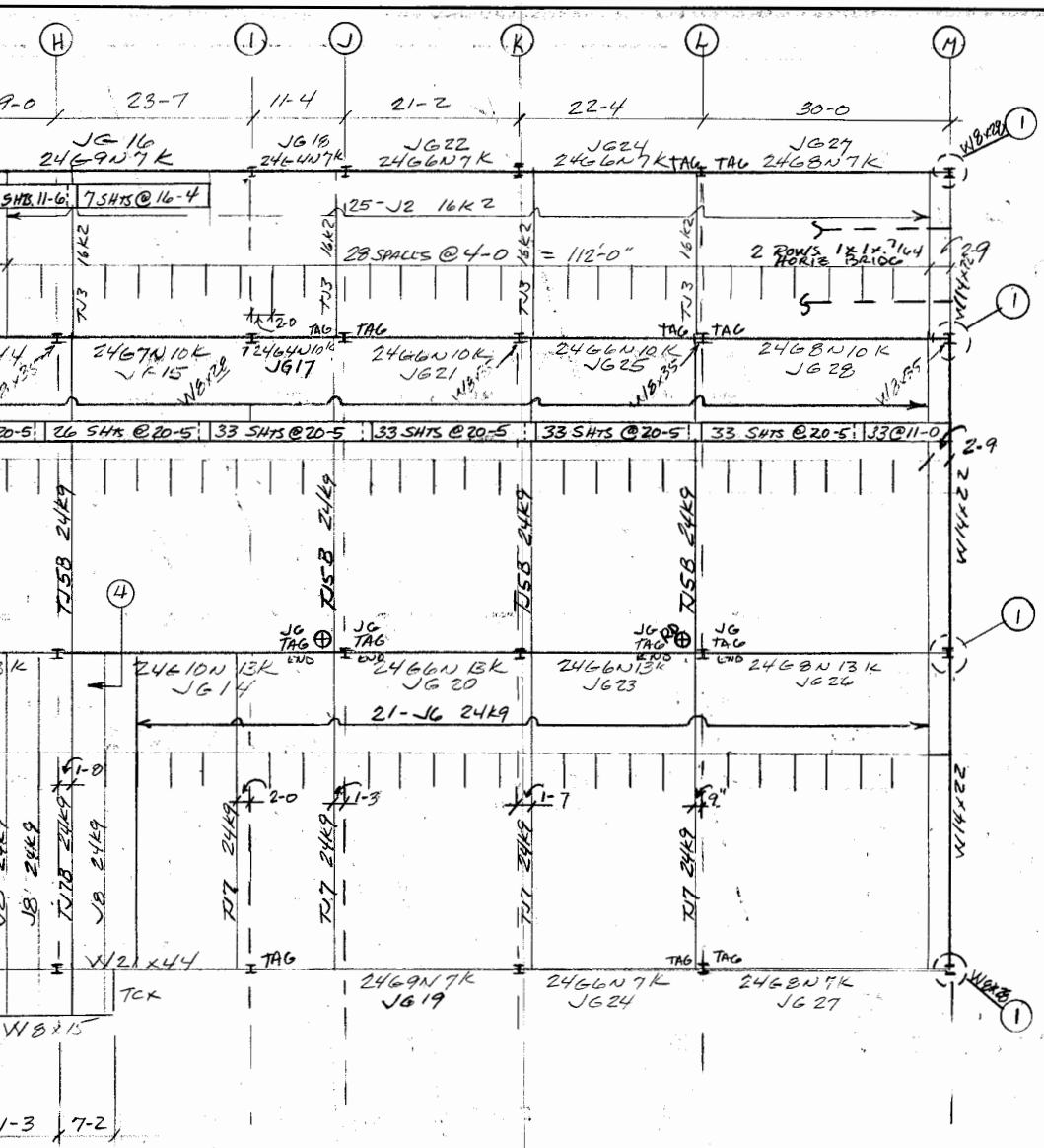
JOIST GIRDERS

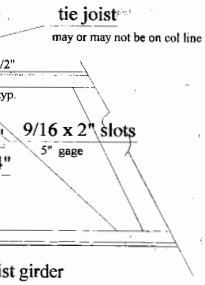
1) PAINT: RED
2) ENGINEER NOTE: NO END MOMENTS ARE INDICATED ON FRAMING PLANS. JOISTS GIRDERS, HAVE BEEN DESIGNED FOR SIMPLE SPAN CONDITIONS PER S.J.I. SPECS. WELDING OF BOTTOM CHORDS WILL INDUCE MOMENTS IN TRUSS AND SHEAR AT SEAT. PLEASE INDICATE APPROVAL TO ELIMINATE WELDING OF BOTTOM CHORD TO STABILIZER.
3) WELDING- 1/4" x 2" FILLET WELDS BOTH SIDES.

FLOOR DECK 9/16
1) MATERIAL: 28 GA; ~~UNC~~ G60 GALV; 30" COVER;
2) SHEETS ARE TO BE ERECTED WITH EDGES UP. END LAPS SHALL BE MADE OVER SUPPORTS.
3) LONGITUDINAL CUTTING OF DECK SHEETS TO ADJUST TO AREA WIDTHS, BEVEL CUTTING, NOTCHING FOR PROTRUSIONS, STACKS, CONDUITS, VENTS, ETC., IS TO BE DONE IN THE FIELD.
4) SEE ATTACHED WELDING PATTERN.

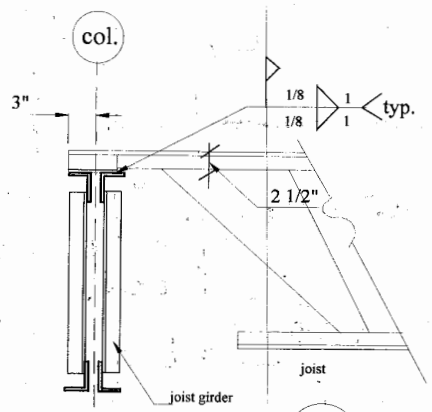
ROOF DECK

1) MATERIAL:
PTD;
2) DECK NOT PR
WITH ONE END
ELEMENTS.
3) SEE FLOOR DE
4) END LAPS SHA
5) PLACE NARRO
6) SEE ATTACHED

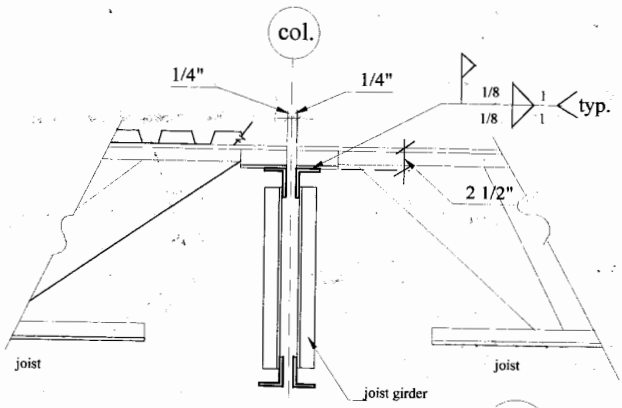




2



SECTION 3



SECTION 4

CONTINENTAL STEEL JOISTS, L.L.C.
205 BLACKSTONE ST. BELLINGHAM, MA. 02019

PROJECT: NASHOBA BROOK PLACE
WESTFORD, MA

1/2 DEEP; 22 GA; TYPE B, 36" COVER;
GREY.
OMPTLY INSTALLED SHALL BE STORED OFF THE GROUND
D ELEVATED AND THE BUNDLES PROTECTED FROM THE

ECK NOTE #3 ABOVE.
LL BE MADE OVER SUPPORTS.
W RIB DOWN.
D WELDING PATTERN.

INDEX
E.O.D. – EDGE OF DECK
L.O.J. – LIMIT OF JOIST
– CROSS "X" BRIDGING
– – – – HORIZONTAL BRIDGING
T.J. – TIE JOIST
○ – END MOMENT IN FT KIPS
⊗ – INDICATES SUMP PAN
H – INDICATES HEADER
BAC OR WAI– BRIDGING ANCHOR CLIPS
□ – INDICATES TUBE COL.
H – INDICATES WIDE FLANGE COL.
T.O.J. – TOP OF JOIST
T.O.S. – TOP OF STEEL

REVISIONS		
NO.	DATE.	BY

TITLE: JOISTS, JOIST GIRDER, DECK LAYOUT.
CUSTOMER: SOUSA 255 Boston Rd. Existing Conditions Report
DRAWN BY: EJC | DATE: 6-23-99 | JOB NO. 034-98
CHECKED BY: | SCALE: NTS | DRAWING NO. 1 of 1

DIGITAL EMPLOY
CREDIT U

Littleton, Mas

NES Group, Consultants
Taunton, Massachusetts

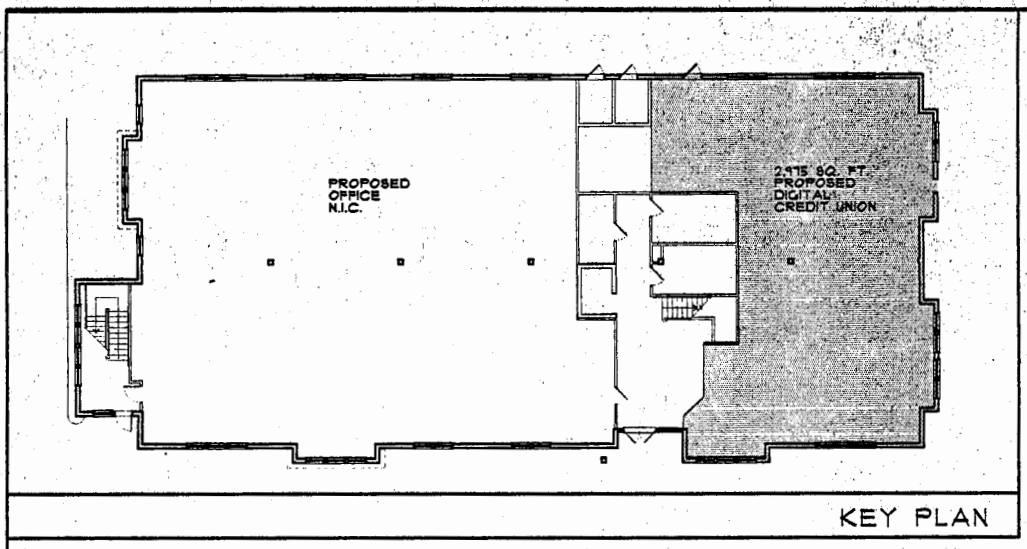
'EES FEDERAL
UNION

sa chusetts

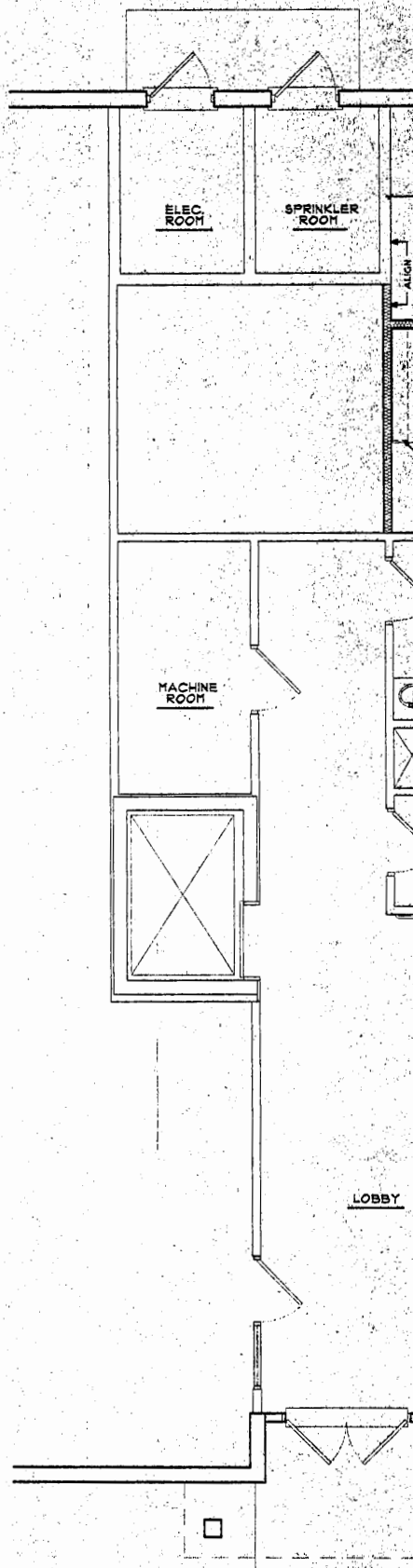
ATM SPEC

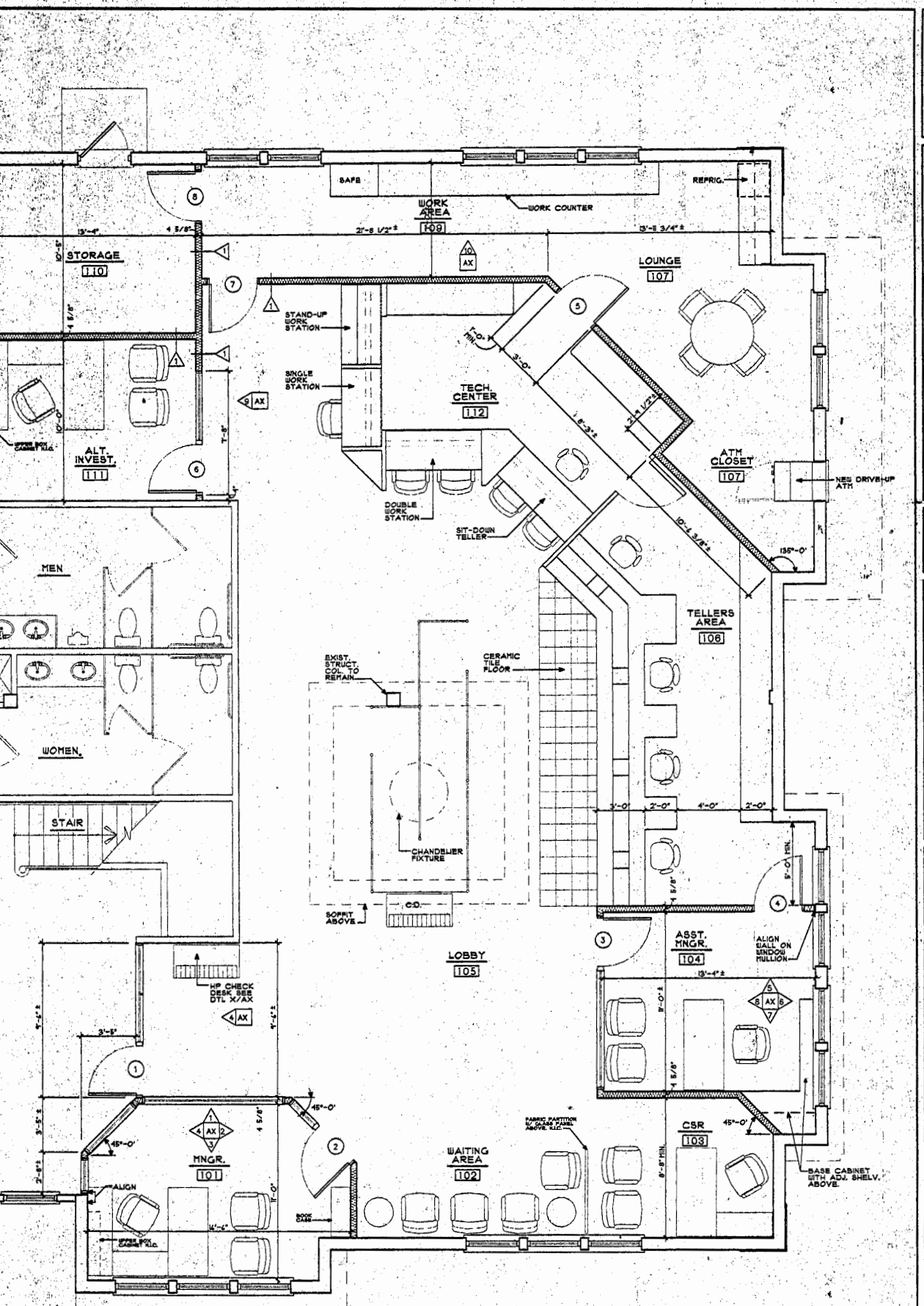
November 19, 1998

DRL and ASSOCIATES INC. - ARCHITECTS
Weymouth, Massachusetts


PROPOSED
OFFICE
N.I.C.
2,975 SQ. FT.
PROPOSED
DIGITAL
CREDIT UNION

KEY PLAN


ELEC.
ROOM
SPRINKLER
ROOM
ALIGN
MACHINE
ROOM
LOBBY



DRL and Associates Inc.
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fax 781-340-6051

NES GROUP
New England Security
DESIGN and PROJECT CONSULTANT
200 Myles Standish Blvd. Taunton, MA 02780
Tel 508-823-8531
Fax 508-822-8930

DIGITAL CREDIT UNION
Littleton, MA

Proposed Branch Building

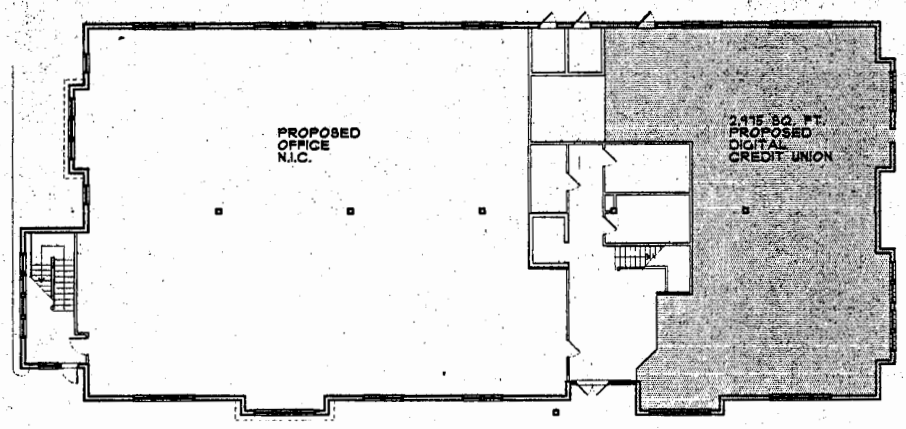
DRAWN BY: B.P.H.	CHECKED : ---
SCALE :	AS NOTED.
DATE :	11-19-98
REVISIONS:	

SHEET

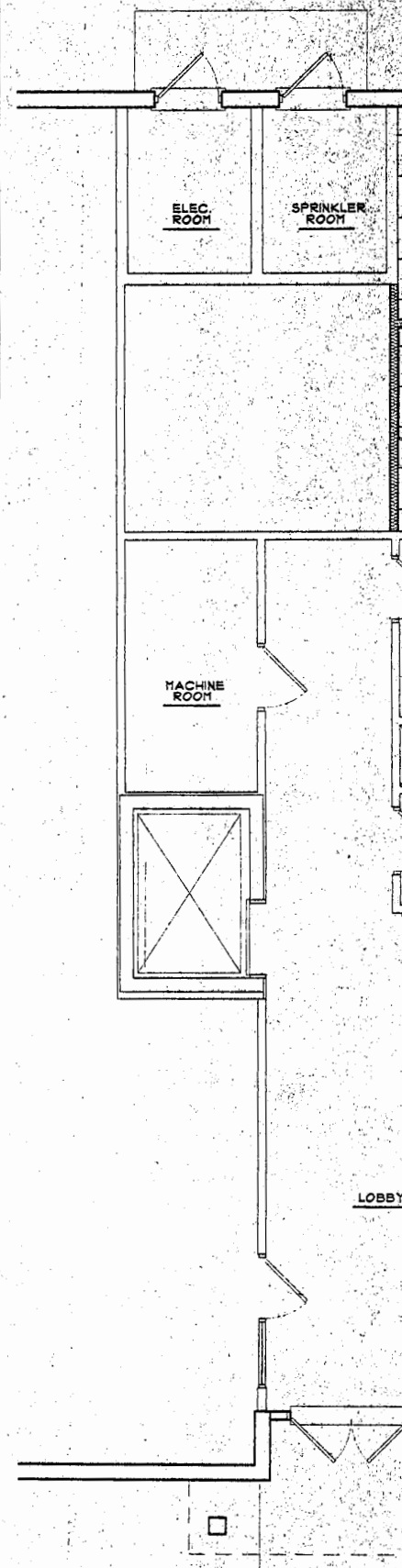
A1

OF 01 SHEETS

JOB NO. : 9871



KEY PLAN

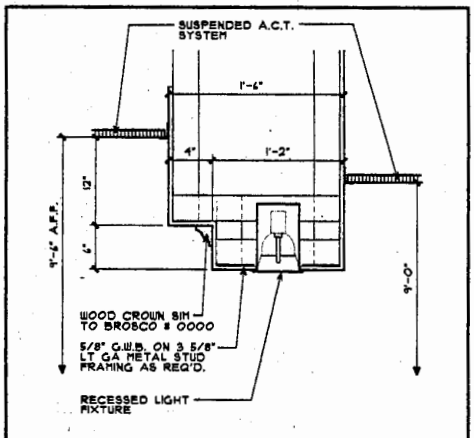


LIGHT FIXTURE LEGEND

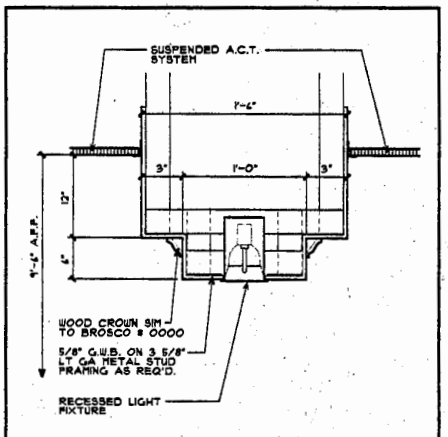
FIXTURE	DESCRIPTION	QTY
A	2X4 RECESSED 3-TUBE RAPID START FLUORESCENT FIXTURE W/ ACRYLIC LENSE MANUFACTURED BY LIGHTOLIER PARALYTE #2448 CAT No. PLA2G18LP340 OR EQUAL	31
B	2X4 RECESSED 3-TUBE RAPID START FLUORESCENT FIXTURE W/ POWER PACK FOR EMERGENCY LIGHTING & ACRYLIC LENSE MANUFACTURED BY LIGHTOLIER PARALYTE #2448 CAT No. PLA2G18LP340 OR EQUAL	7
C	CHANDELIER (VERIFY W/ ARCHITECT)	1
D	RECESSED 6"ø RECESSED DOWN LIGHTING WITH STEP BAFFLE MANUFACTUED BY LIGHTOLIER # 1005BH MATTE WHITE FINISH OR EQUAL.	14

GENERAL NOTES

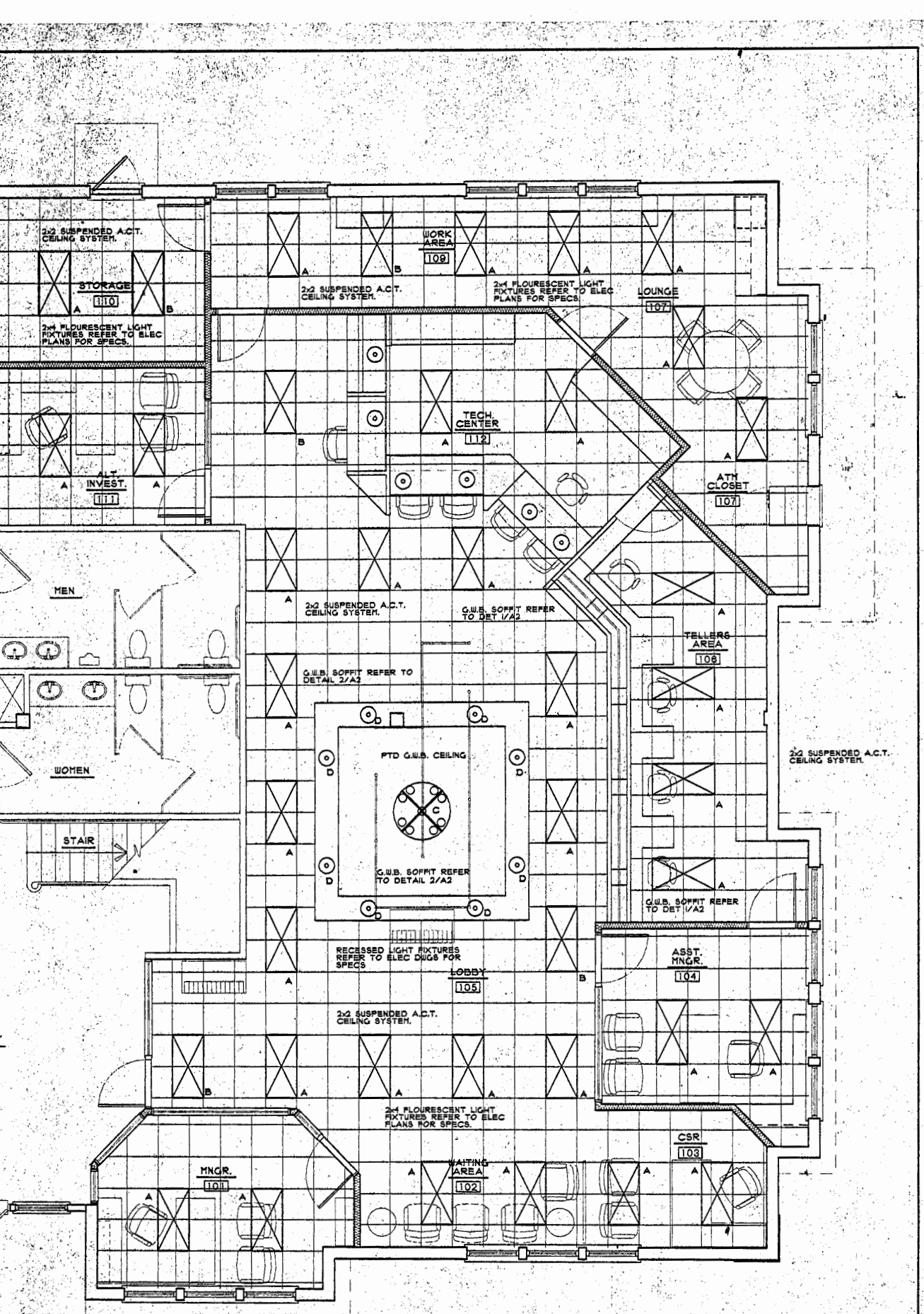
1. RELOCATE EXISTING MECHANICAL DIFFUSERS AS REQUIRED FOR NEW ACT.
2. ALL MECHANICAL DIFFUSERS TO BE LOCATED IN CENTER OF CEILING TILES.
3. EXISTING SWITCHES TO REMAIN UNLESS NOTED.
4. ALL CEILING MTD FIXTURES TO BE COORDINATED W/ LIGHTING LAYOUT.
5. REFER TO DRAWING A1-4 FOR LIGHTING FIXTURE SCHEDULE
6. REPLACE / RELOCATE ALL EXIT SIGNS AS REQ'D. IN COMPLIANCE WITH THE LATEST ADDITION OF MA. BLD'G CODE.
7. VERIFY LOCATION OF MEANS OF EGRESS LIGHTING WITH THE LATEST ADDITION OF MA. BLD'G CODE.



1 SOFFIT DETAIL



2 SOFFIT DETAIL



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Tel 508-823-8531
Fax 508-822-8930

DIGITAL CREDIT UNION
Littleton, MA

Proposed Branch Building

DRAWN BY: B.P.H.	CHECKED : ---
SCALE :	AS NOTED
DATE :	11-19-98
REVISIONS:	
SHEET	A2
OF 01 SHEETS	
JOB NO. :	9871

GENERAL NOTES

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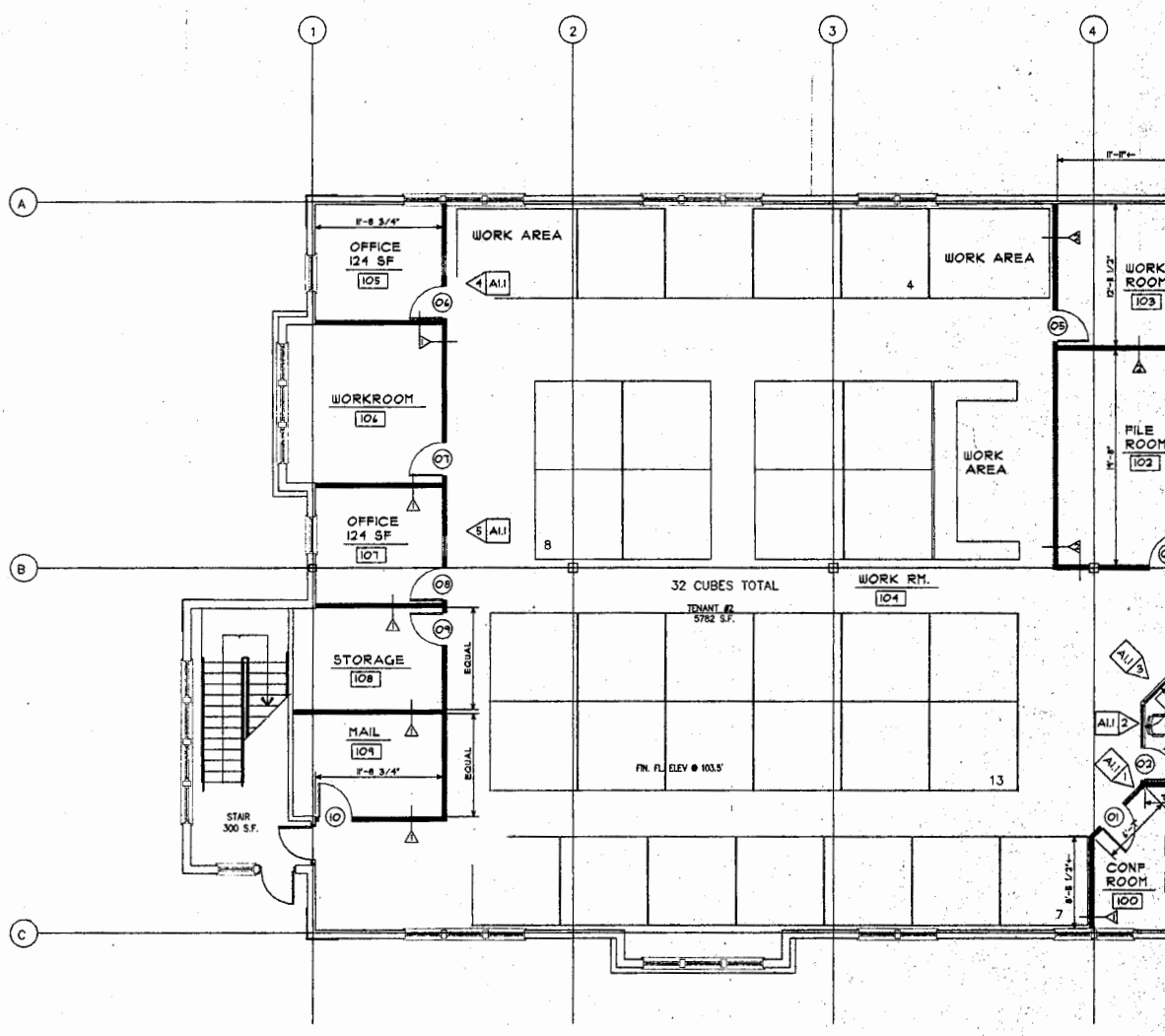
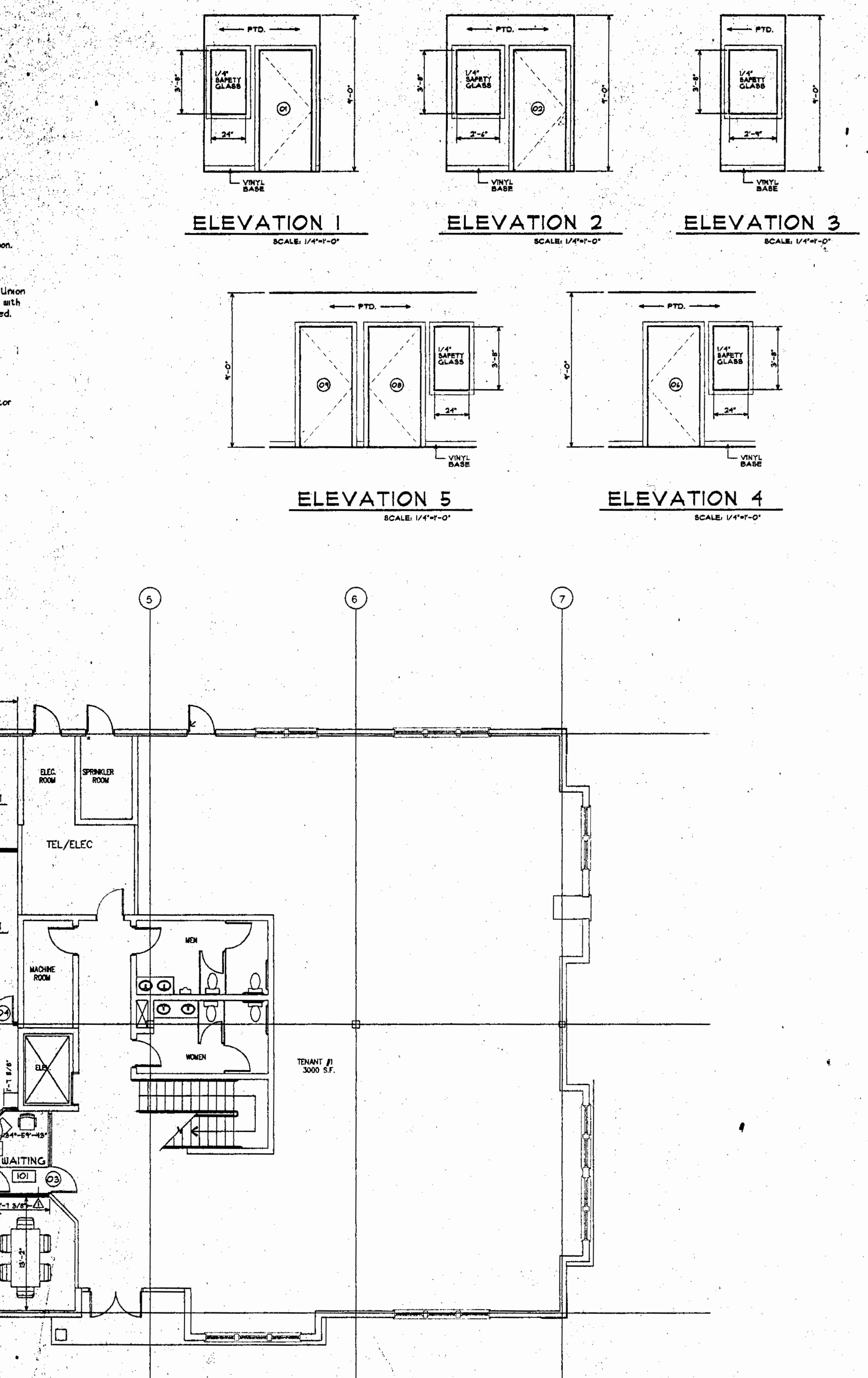


FIRST FLOOR PLAN

SCALE: 1/8"=1'-0"

McLaughlin



REVISION DATE	BY
11/7/98	SRT
11/24/98	FBC
11/27/98	FBC

DRL and ASSOCIATES INC.
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Fax 508-822-6930
200 Myles Standish Blvd. Taunton, MA 02780

FIRST FLOOR PLAN

DIGITAL CREDIT UNION

LITTLETON, MASSACHUSETTS

DRAWN : B.P.H.	CHECKED X.X.X.
DATE : 6/04/98	
SCALE : 1/8" = 1'-0"	
JOB NO. : 9871	
SHEET A-2.1	
OF -- SHEETS	

REGISTERED ARCHITECT — DONALD RICHARD LONERGAN No. 4027 PEMBROKE, MASS. COMMONWEALTH OF MASSACHUSETTS

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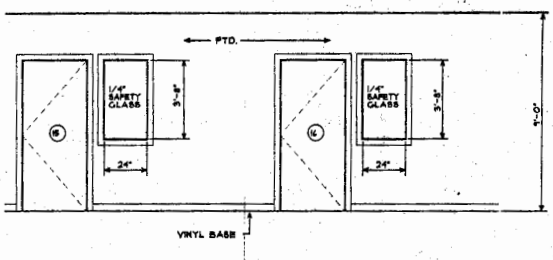
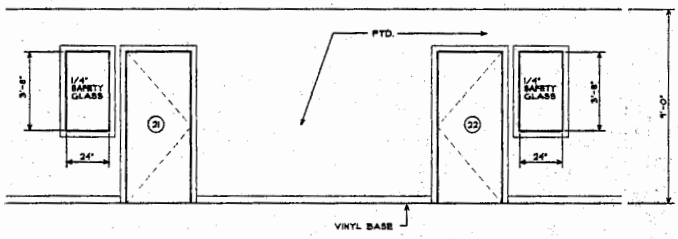


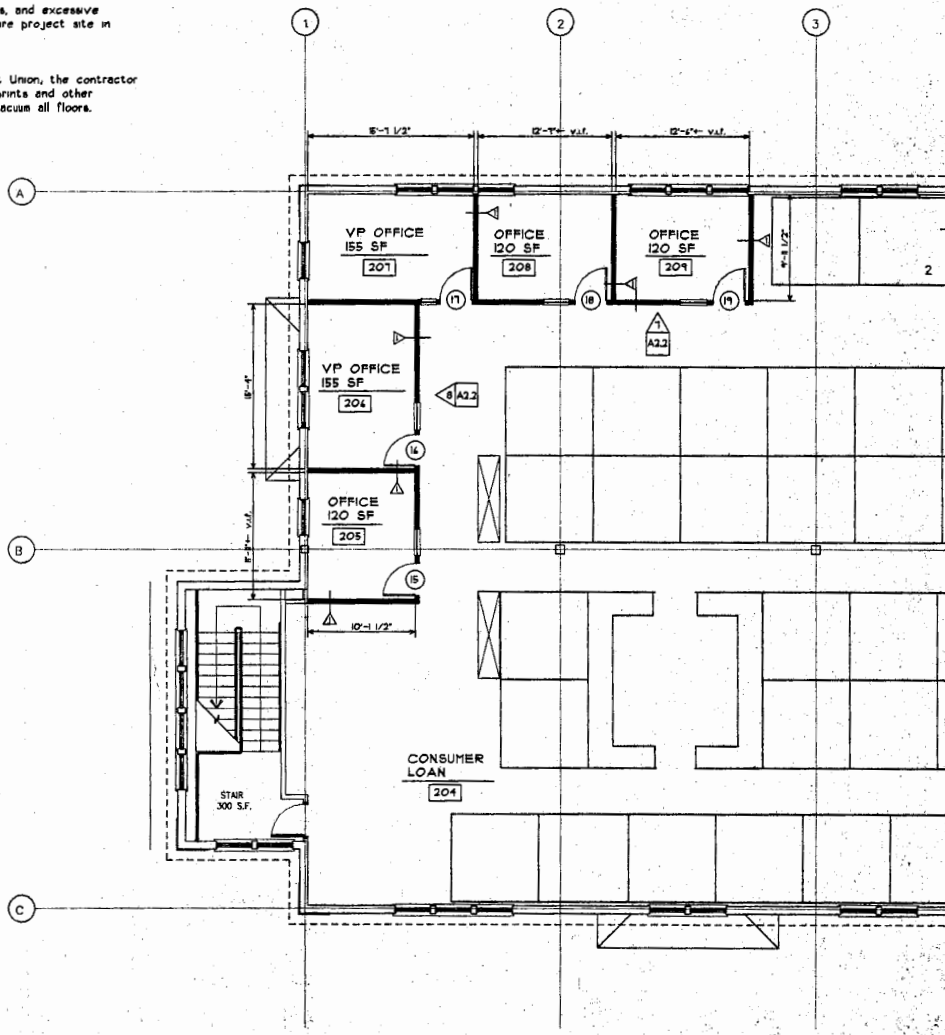
ELEVATION 8

SCALE: 1/4"=1'-0"



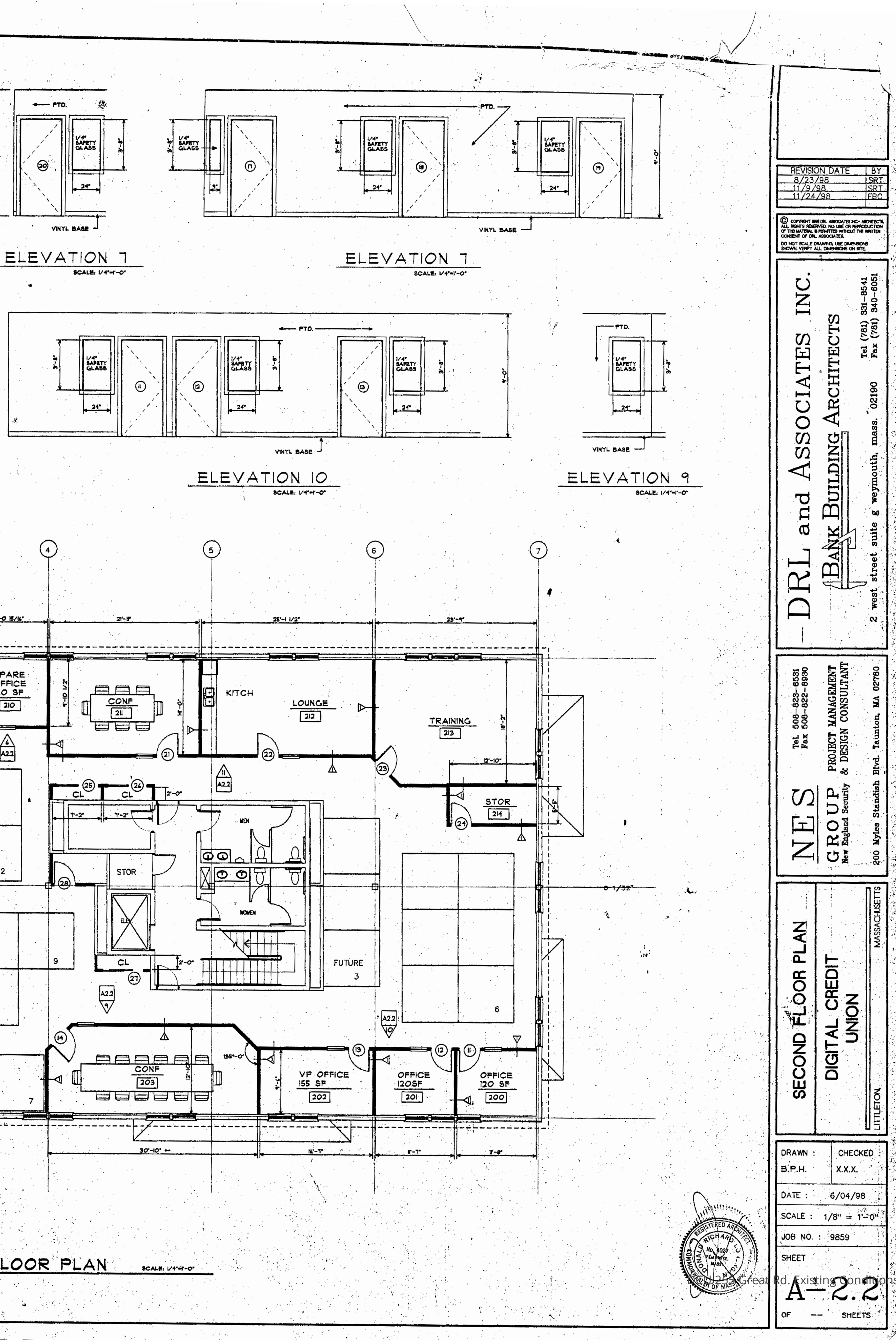
ELEVATION 11

SCALE: 1/4"=1'-0"



SECOND F

McLaughlin


PTD.
1/4" SAFETY GLASS
VINYL BASE
ELEVATION 7
SCALE: 1/4"=1'-0"
ELEVATION 10
ELEVATION 9
SPARE OFFICE
CONF 211
KITCH
LOUNGE 212
TRAINING 213
STOR 214
CL
STOR
MEN
WOMEN
FUTURE 3
CONF 203
VP OFFICE 155 SF 202
OFFICE 120SF 201
OFFICE 120 SF 200
FLOOR PLAN
REVISION DATE BY
8/23/98 SRT
11/9/98 SRT
11/24/98 FBC
DO NOT SCALE DRAWING, USE DIMENSIONS SHOWN. VERIFY ALL DIMENSIONS ON SITE.
DRL and ASSOCIATES INC.
BANK BUILDING ARCHITECTS
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Fax (781) 340-6051
NES GROUP
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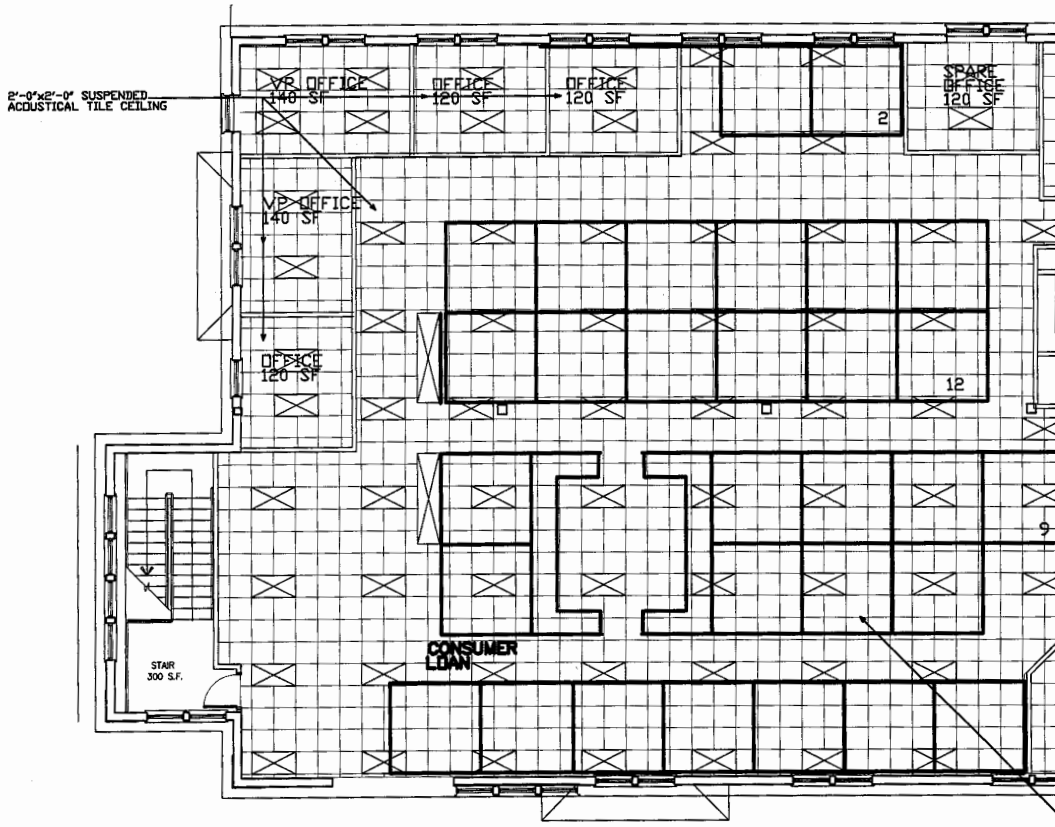
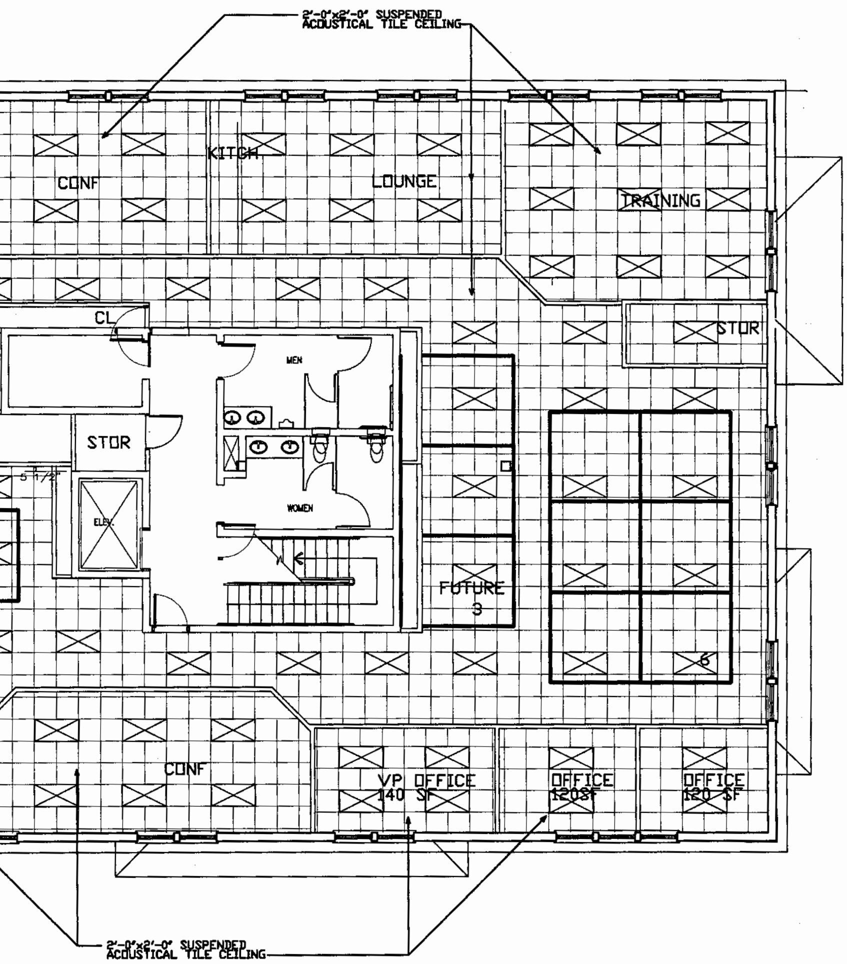
PROJECT MANAGEMENT & DESIGN CONSULTANT
Tel 508-823-6531
Fax 508-822-8930
200 Myles Standish Blvd. Taunton, MA 02780
SECOND FLOOR PLAN
DIGITAL CREDIT UNION
LITTLETON, MASSACHUSETTS
DRAWN : B.P.H.
CHECKED X.X.X.
DATE : 6/04/98
SCALE : 1/8" = 1'-0"
JOB NO. : 9859
SHEET
A-2.2
OF -- SHEETS
REGISTERED ARCHITECT
DONALD RICHARD LYONS
No. 4027
PEMBROKE, MASS.
COMMONWEALTH OF MASS.

LIGHT FIXTURE LEGEND

FIXTURE	DESCRIPTION	QTY
A	2X4 RECESSED 3-TUBE RAPID START FLUORESCENT FIXTURE W/ ACRYLIC LENSE	



SECOND FLOOR REFLE



...CTED CEILING PLAN

SCALE: 1/8"=1'-0"

REVISION DATE	BY
8/23/98	SRT
11/20/98	FBC

DR Land ASSOCIATES INC
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200 Myles Standish Blvd. Taunton, MA 02780

PROPOSED FLOOR PLAN

DIGITAL CREDIT UNION

LITTLETON, MASSACHUSETTS

DRAWN : B.P.H.	CHECKED : X.X.X.
DATE : 6/04/98	
SCALE : 1" = 20'	
JOB NO. : 9859	
SHEET A-3.2	
OF -- SHEETS	

Received via E-mail Dec. 1, 1998 J. LaGrasse

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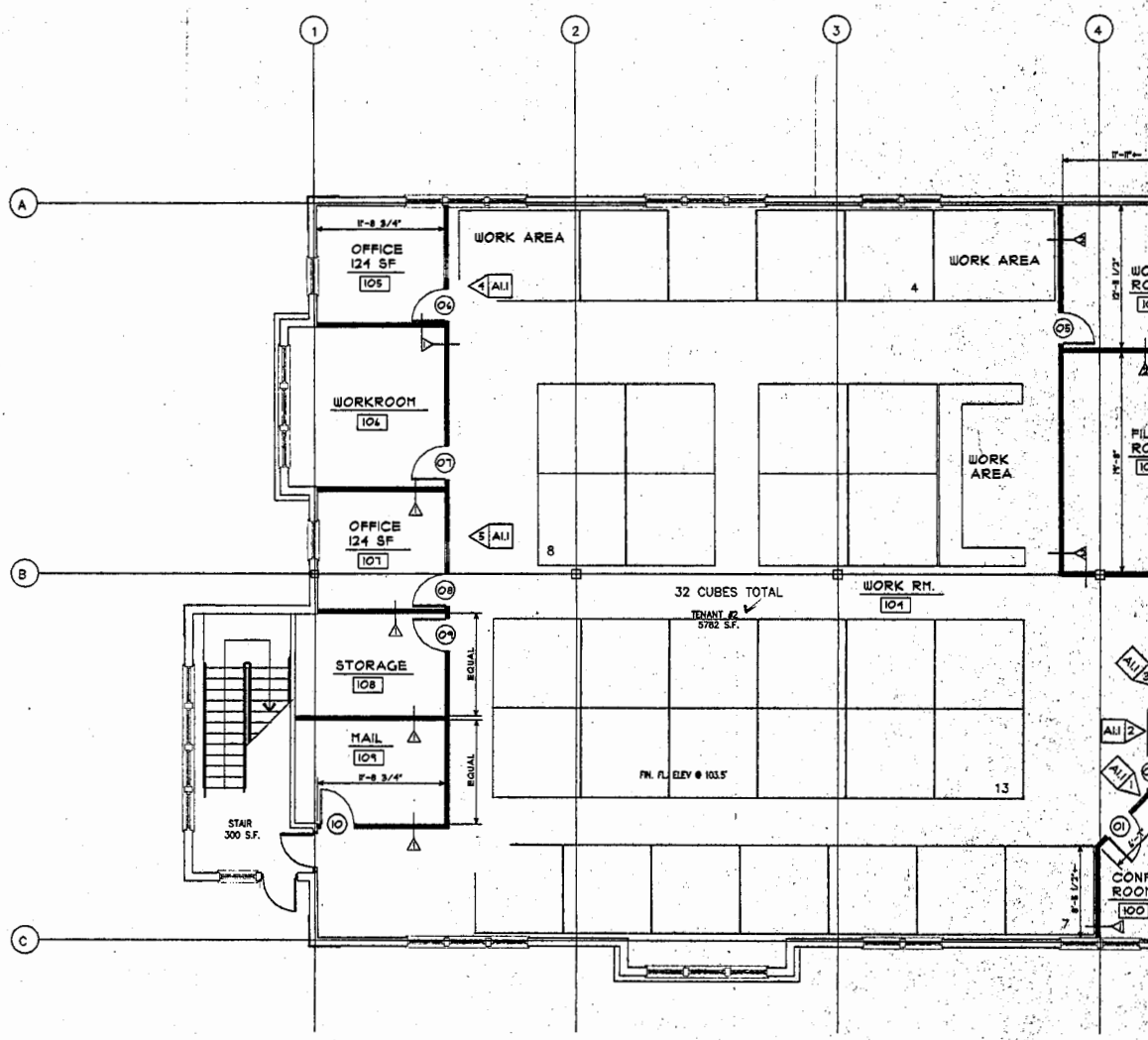
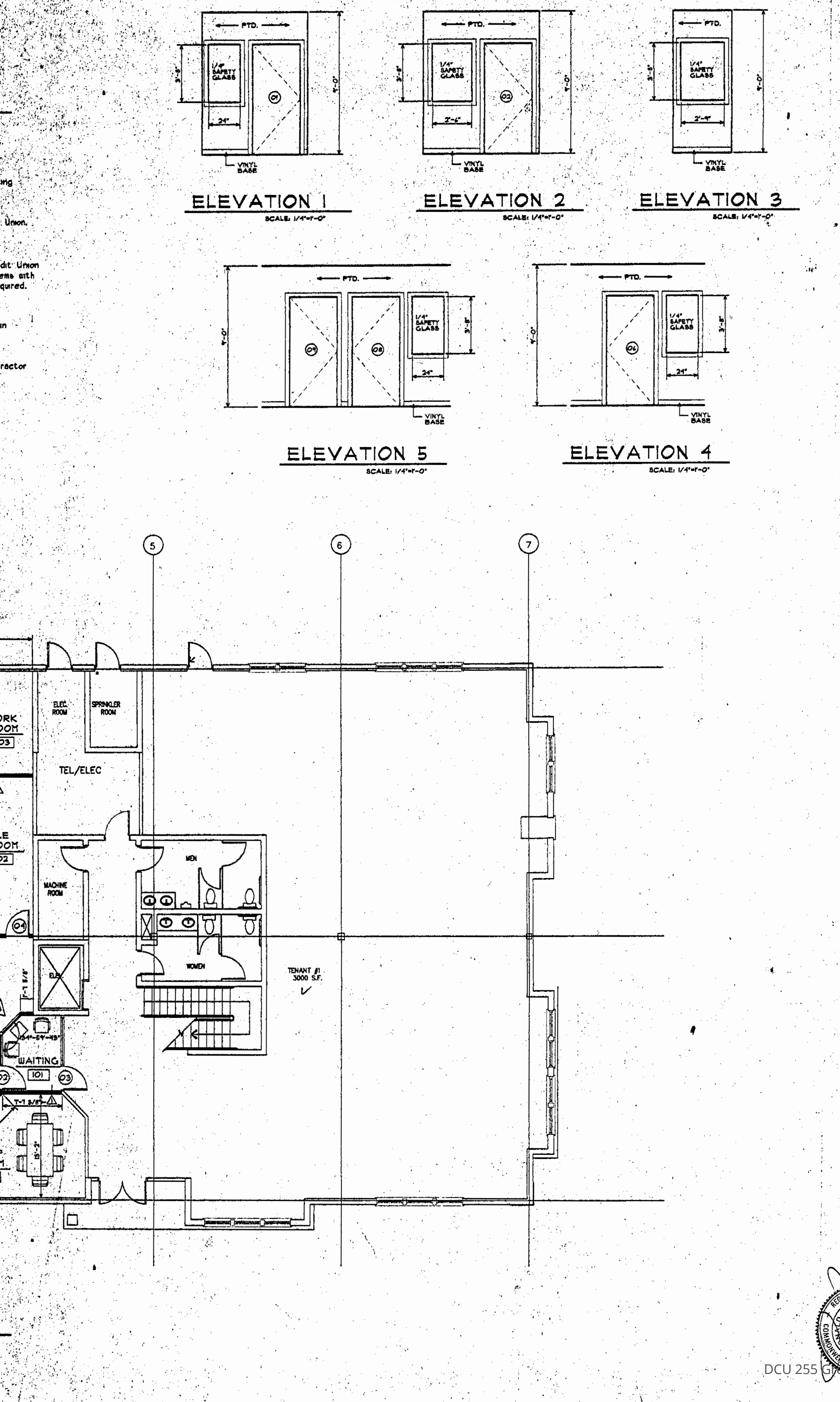


FIRST FLOOR PLAN SCALE: 1/8"=1'-0"



REVISION DATE	BY
11/7/98	SRT
11/24/98	FBC
11/27/98	FBC

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FIRST FLOOR PLAN

DIGITAL CREDIT UNION

LITTLETON, MASSACHUSETTS

DRAWN :	CHECKED
B.P.H.	X.X.X.

DATE : 6/04/98

SCALE : 1/8" = 1'-0"

JOB NO. : 9871

SHEET A-2.1

OF -- SHEETS

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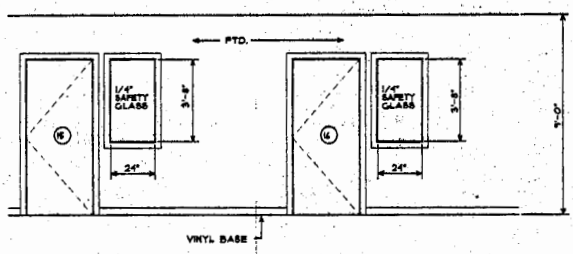
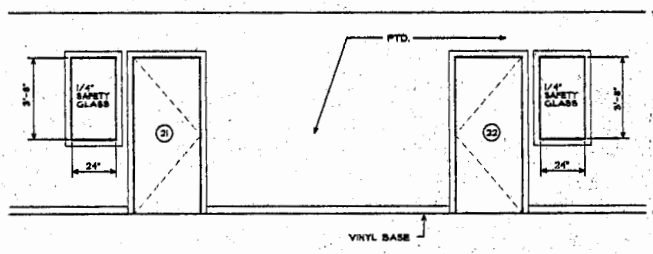


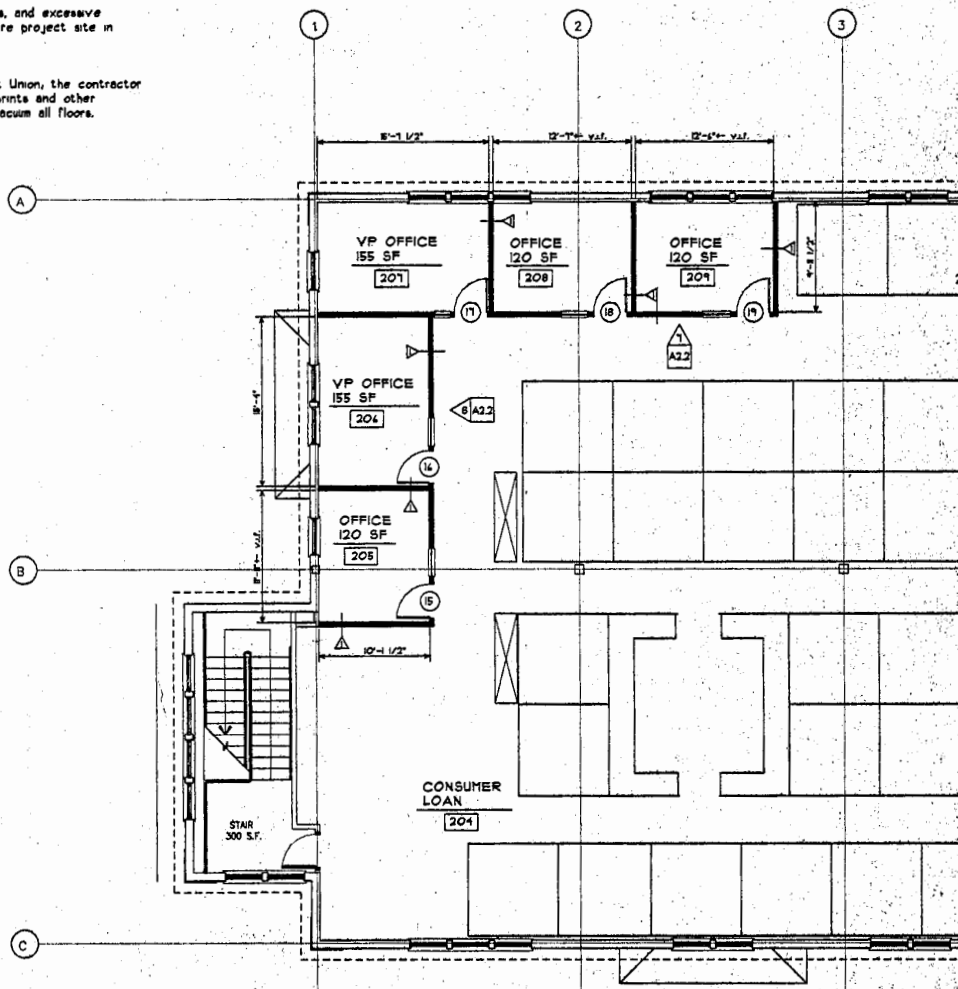
ELEVATION 8

SCALE: 1/4"=1'-0"

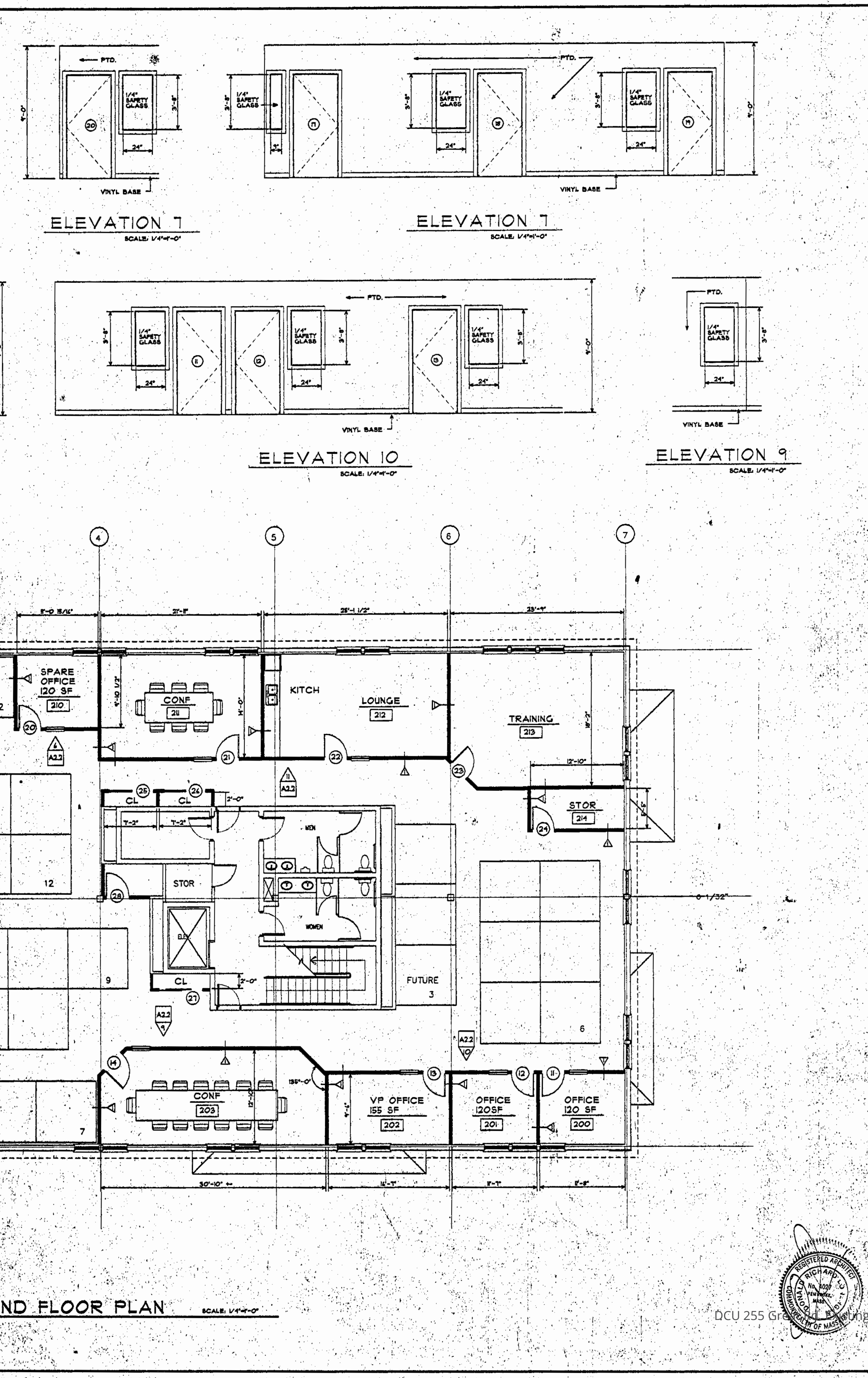


ELEVATION 11

SCALE: 1/4"=1'-0"



SECO



REVISION DATE | BY
8/23/98 | SRT
11/9/98 | SRT
11/24/98 | FBC

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Fax (781) 340-6051

NES GROUP
New England Security
PROJECT MANAGEMENT & DESIGN CONSULTANT
Tel 508-823-6531
Fax 508-822-8930
200 Myles Standish Blvd. Taunton, MA 02780

SECOND FLOOR PLAN

DIGITAL CREDIT UNION

LITTLETON, MASSACHUSETTS

DRAWN: B.P.H. | CHECKED: X.X.X.

DATE: 6/04/98

SCALE: 1/8" = 1'-0"

JOB NO.: 9859

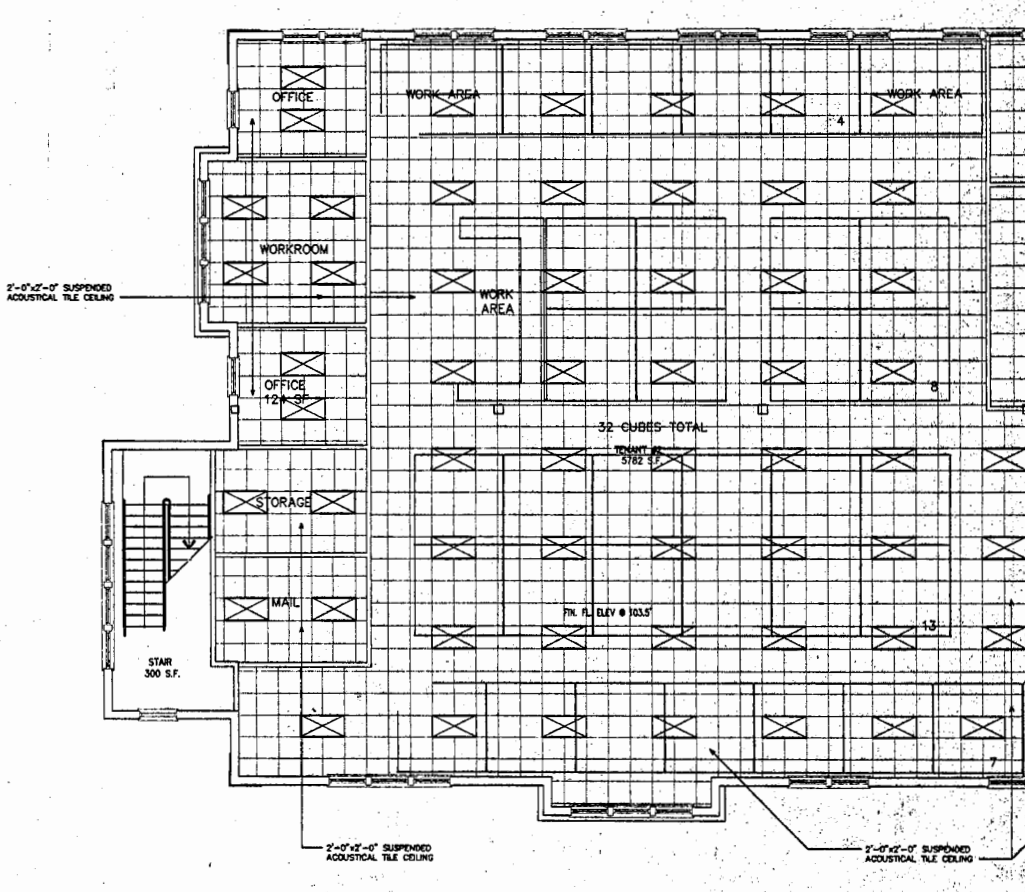
SHEET

A-2.2

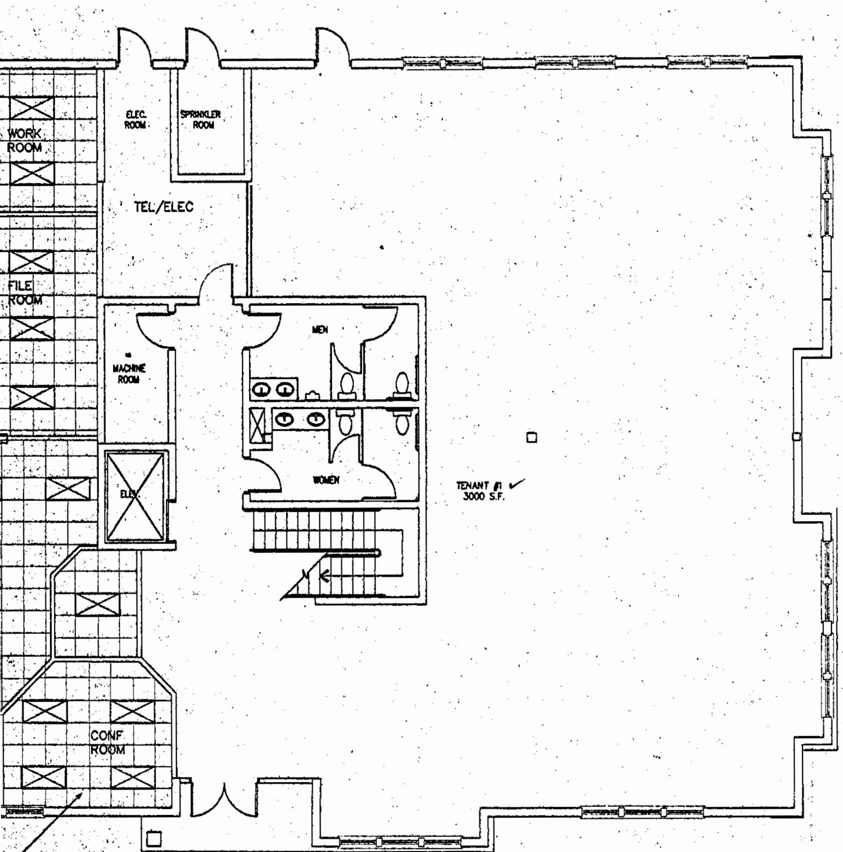
OF --- SHEETS

LIGHT FIXTURE LEGEND

FIXTURE	DESCRIPTION	QTY.
A	2X4 RECESSED 3-TUBE RAPID START FLUORESCENT FIXTURE W/ ACRYLIC LENSE	



FIRST FLOOR REFLECTED



CEILING PLAN SCALE: 1/8"=1'-0"

REVISION DATE	BY
8/23/98	SRT
10/15/98	SRT
11/20/98	FBC

DO NOT SCALE DRAWING. USE DIMENSIONS SHOWN. VERIFY ALL DIMENSIONS ON SITE.

DRL and ASSOCIATES INC.
BANK BUILDING ARCHITECTS
west street suite weymouth, mass. 02190 Tel (781) 331-8541 Fax (781) 340-6051

NES GROUP New England Security
PROJECT MANAGEMENT & DESIGN CONSULTANT
Tel. 508-823-6631 Fax 508-822-8930
200 Myles Standish Blvd. Taunton, MA 02780

REFLECTED CEILING PLAN

DIGITAL CREDIT UNION

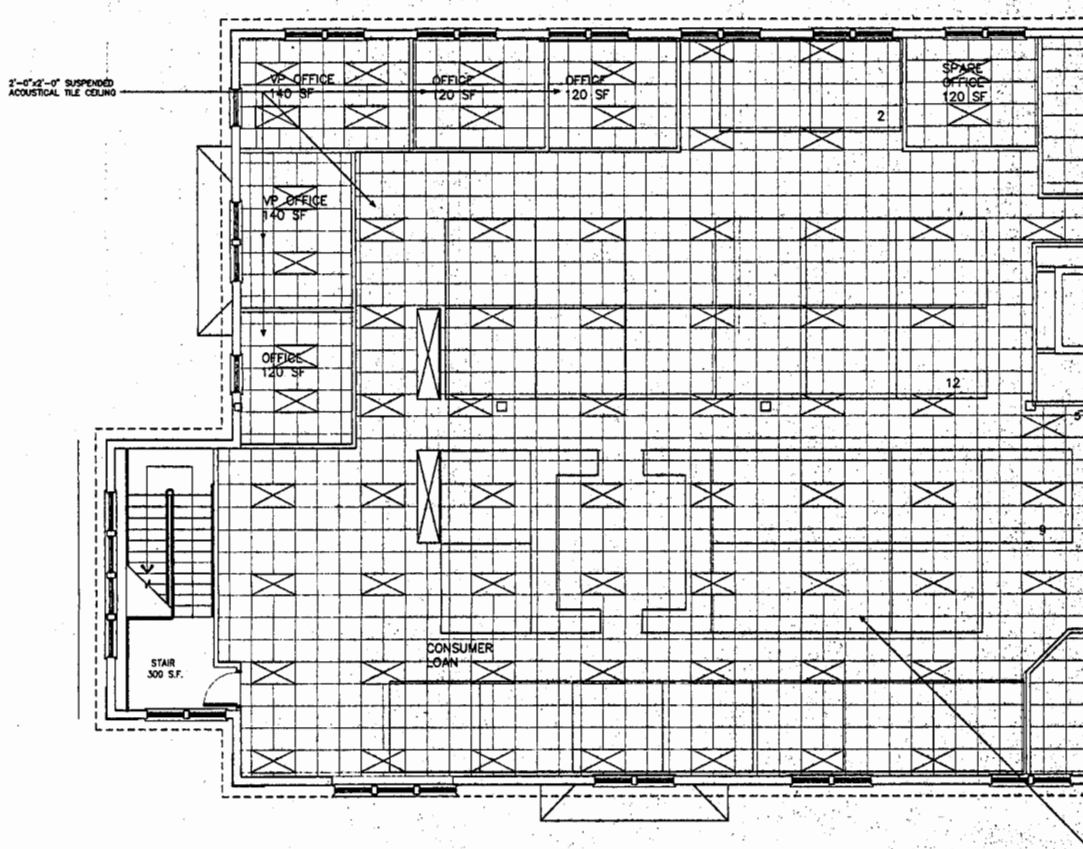
LITTLETON, MASSACHUSETTS

DRAWN : B.P.H.
CHECKED : X.X.X.
DATE : 6/04/98
SCALE : 1/8" = 1'-0"
JOB NO. : 9871
SHEET A-3.1 OF -- SHEETS

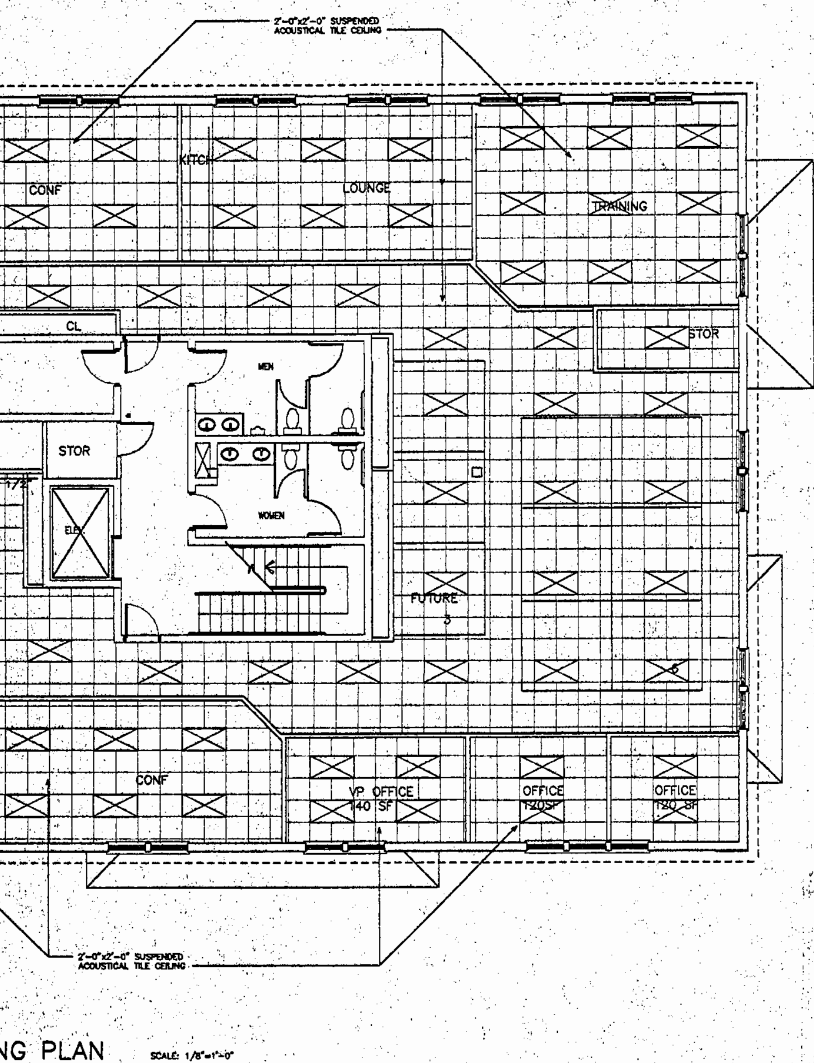
REGISTERED ARCHITECT — DONALD RICHARD LONERGAN No. 4027 PEMBROKE, MASS. COMMONWEALTH OF MASSACHUSETTS

LIGHT FIXTURE LEGEND

FIXTURE	DESCRIPTION	QTY
A	2X4 RECESSED 3-TUBE RAPID START FLUORESCENT FIXTURE W/ ACRYLIC LENSE	



SECOND FLOOR REFLECTED CEILIN



...NG PLAN SCALE: 1/8"=1'-0"

REVISION DATE	BY
8/23/98	SRT
11/20/98	FBC

DRL and ASSOCIATES INC.
BANK BUILDING ARCHITECTS
2 west street suite g weymouth, mass. 02190 Tel (781) 331-6541 Fax (781) 340-6051

NES GROUP
New England Security PROJECT MANAGEMENT & DESIGN CONSULTANT
Tel 508-823-6531 Fax 508-822-8930
200 Myles Standish Blvd. Taunton, MA 02780

PROPOSED FLOOR PLAN

DIGITAL CREDIT UNION

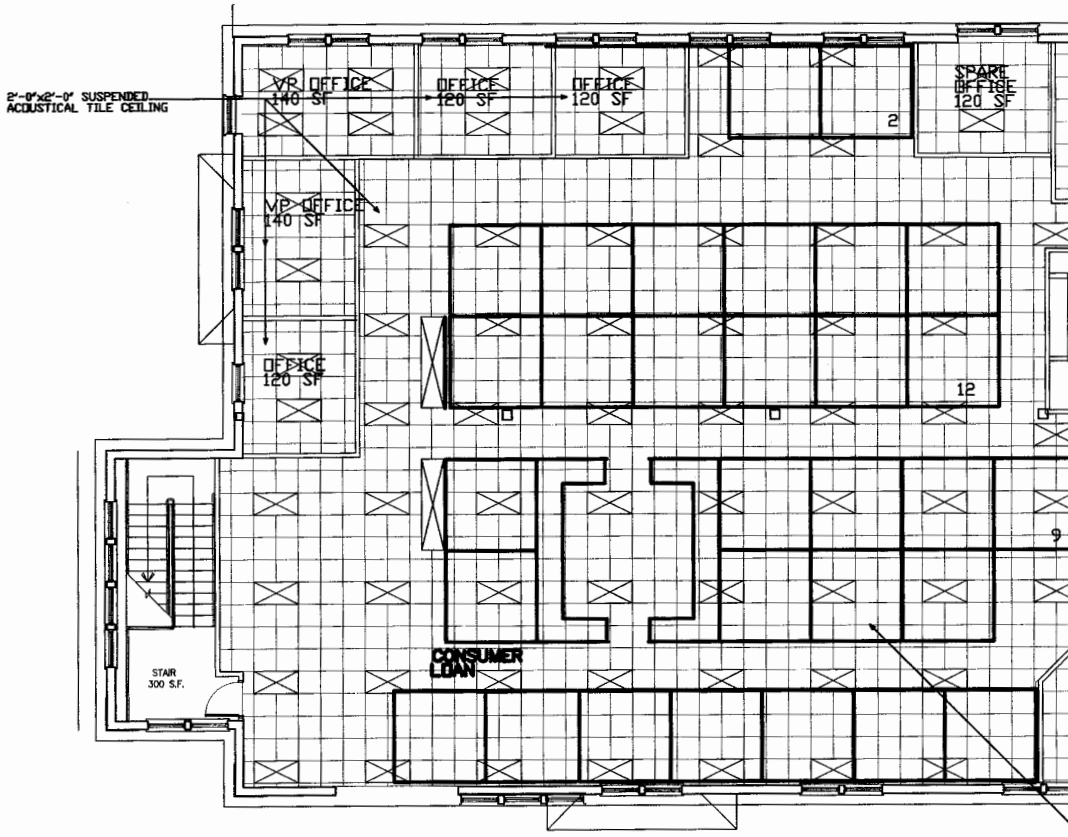
LITTLETON, MASSACHUSETTS

DRAWN : B.P.H.	CHECKED : X.X.X.
DATE :	6/04/98
SCALE :	1" = 20'
JOB NO.	9859
SHEET	A-3.2
OF —	SHEETS

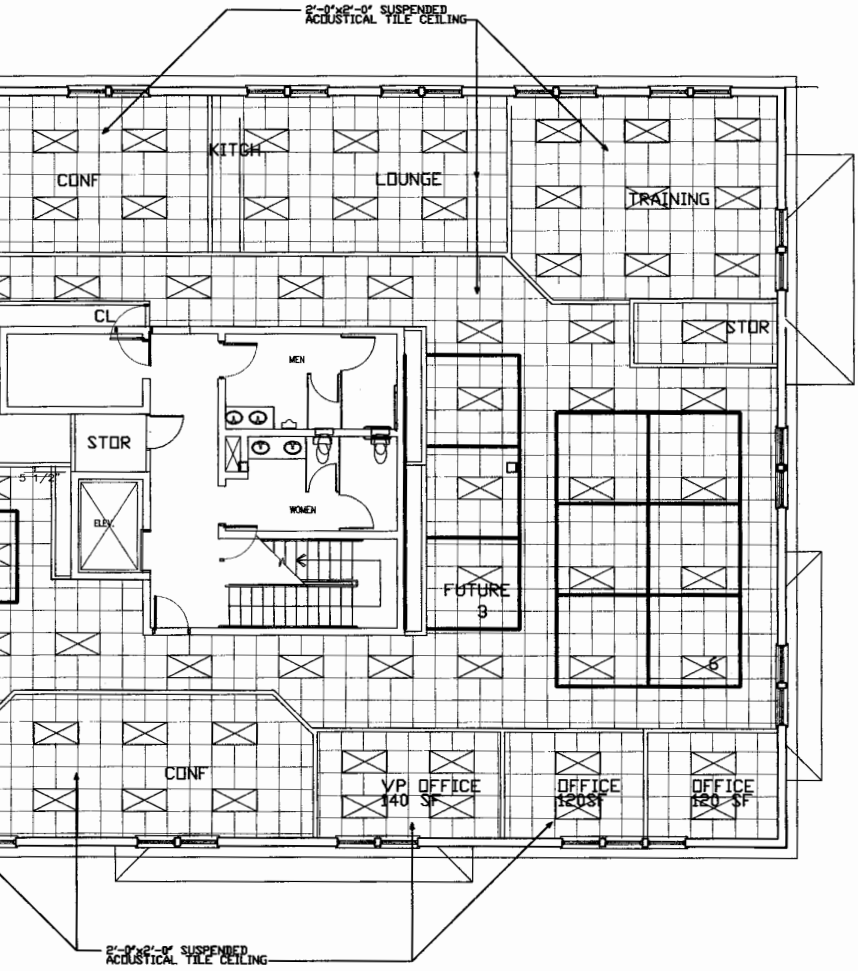
REGISTERED ARCHITECT RICHARD LONERGAN No. 4020 COMMONWEALTH OF MASSACHUSETTS

LIGHT FIXTURE LEGEND

FIXTURE	DESCRIPTION	QTY
A	2X4 RECESSED 3-TUBE RAPID START FLUORESCENT FIXTURE W/ ACRYLIC LENSE	



SECOND FLOOR REFLE



CTED CEILING PLAN

SCALE: 1/8"=1'-0"

REVISION	DATE	BY
	8/23/98	SRI
	11/20/98	FBC

DR Land Associates Inc
Bank Building Architects
2 west street suite g weymouth, ma 02190
Tel (781) 331-8541
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NES GROUP
New England Security Design Consultant
PROJECT MANAGEMENT
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Fax 508-822-8930
200 Myles Standish Blvd. Taunton, MA 02780

PROPOSED FLOOR PLAN

DIGITAL CREDIT UNION

LITTLETON, MASSACHUSETTS

DRAWN	CHECKED
B.P.H.	X.X.X.

DATE : 6/04/98

SCALE : 1" = 20'

JOB NO. : 9859

SHEET

A-3.2

OF SHEETS

RECEIVED VIA E-MAIL DEC. 1, 1998 J.LAGRASSE

ROOM FINISH SCHEDULE

RM. NO.	ROOM NAME	FLOOR	BASE	WALLS 1	WALLS 2	WALLS 3	WALLS 4	CEILING HT.	REMARKS
100	CONFERENCE ROOM	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
101	WAITING	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
102	FILE ROOM	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
103	WORK ROOM	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
104	WORK ROOM	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
105	OFFICE	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
106	WORKROOM	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
107	OFFICE	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
108	STORAGE	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
109	MAIL	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
200	OFFICE	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
201	OFFICE	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
202	VP OFFICE	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
203	CONFERENCE	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
204	CONSUMER LOAN	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
205	OFFICE	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
206	VP OFFICE	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
207	VP OFFICE	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
208	OFFICE	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
209	OFFICE	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
210	SPARE OFFICE	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
211	CONFERENCE	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
212	LOUNGE	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
213	TRAINING	C	V	PTD	PTD	PTD	PTD	9'-0"	AT
214	STORAGE	C	V	PTD	PTD	PTD	PTD	9'-0"	AT

NOTE:

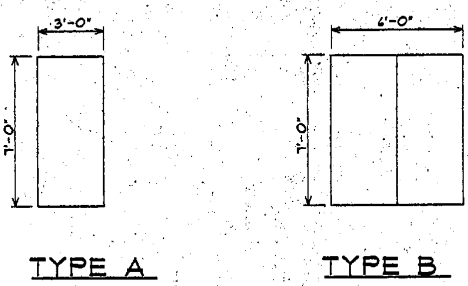
ROOM FINISH KEY

C —— CARPET V —— VINYL BASE PTD —— GYPSUM WALL BOARD (PAINTED) AT —— ACOUSTICAL TILE

DOOR SCHEDULE

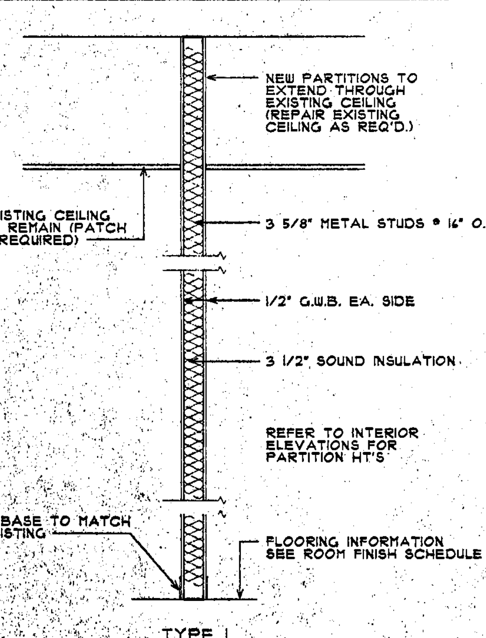
NO.	SIZE	TYPE	DOOR LABEL	DOOR MATERIAL	JAMB TYPE	FRAME LABEL	FRAME MATERIAL	THRESHOLD	REMARKS
1	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
2	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
3	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
4	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
5	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
6	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
7	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
8	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
9	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
10	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
11	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
12	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
13	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
14	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
15	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
16	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
17	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
18	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
19	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
20	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
21	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
22	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
23	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
24	3'-0"X7'-0"X1 3/4"	A	—	S.C. WOOD	1	—	WOOD	—	
25	6'-0" SLIDING	B	—	WOOD	1	—	WOOD	—	
26	6'-0" SLIDING	B	—	WOOD	1	—	WOOD	—	
27	6'-0" SLIDING	B	—	WOOD	1	—	WOOD	—	
28									

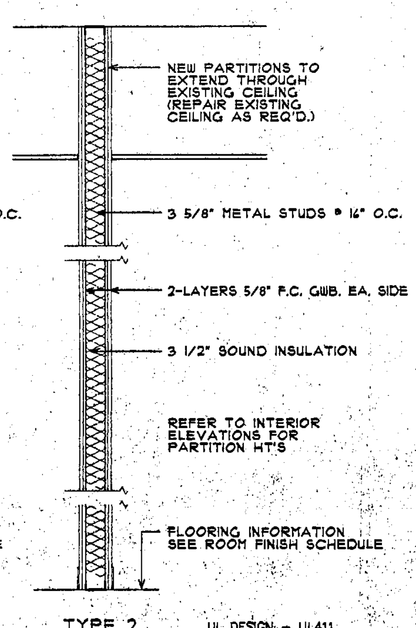
ALL DOORS, FRAMES, HARDWARE, AND THRESHOLDS ARE TO CONFORM TO THE MOST RECENT STATE AND HANDICAPPED CODES



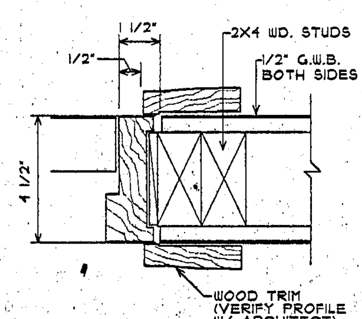
DOOR TYPES 1/4"=1'-0"

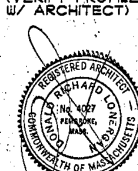
TYPICAL CONSTRUCTION DETAILS





WALL TYPES SCALE: N.T.S.





2 A-1 JAMB TYPE 1

REVISION DATE	BY
11/7/98	SRT
11/25/98	FBC
11/27/98	FBC

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2 west street suite g weymouth, mass. 02190

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Fax 508-822-9830
200 Myles Standish Blvd. Taunton, MA 02780

DETAILS AND SCHEDULES

DIGITAL CREDIT UNION

LITTLETON, MASSACHUSETTS

DRAWN : S.R.T.	CHECKED : XXX
DATE :	11/2/98
SCALE :	AS NOTED
JOB NO. :	9871
SHEET	A-4.1
OF XX SHEETS	

ARCHITECTS

Lerner Ladds Bartels

Design. Live. Thrive.