State of Vermont
Department of Buildings & General Services

NEW SNOW REMOVAL EQUIPMENT BUILDING
VERMONT AGENCY OF TRANSPORTATION
ROUTE 7B

Clarendon, Vermont

AGENCY OF ADMINISTRATION
DEPT. OF BUILDINGS & GENERAL SERVICES
2 GOVERNOR AIKEN AVENUE
MONTPELIER, VERMONT 05633-5801
R. TASHA WALLIS, COMMISSIONER

James Douglas
Governor

AGENCY OF TRANSPORTATION
NATIONAL LIFE BUILDING
MONTPELIER, VERMONT 05633-5001
DAWN TERRILL, SECRETARY

April 2006

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ARCHITECT:
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THE BRADFORD MILL
BRADFORD, VERMONT 05033

SITE ENGINEER:
CIVIL ENGINEERING ASSOCIATES INC.
P.O. BOX 485
SHELBURNE, VERMONT 05482

STRUCTURAL:
RICHARD M. DOHERTY P.E.
595 DORSET ST. #6
SOUTH BURLINGTON, VERMONT 05403

MECHANICAL:
LANE ASSOCIATES, CONSULTING ENGINEERS
51 KILLINGTON AVE.
RUTLAND, VERMONT 05701

ELECTRICAL ENGINEER:
PEARSON & ASSOCIATES
POST OFFICE BOX 610
STOWE, VERMONT 05672

SET # 2
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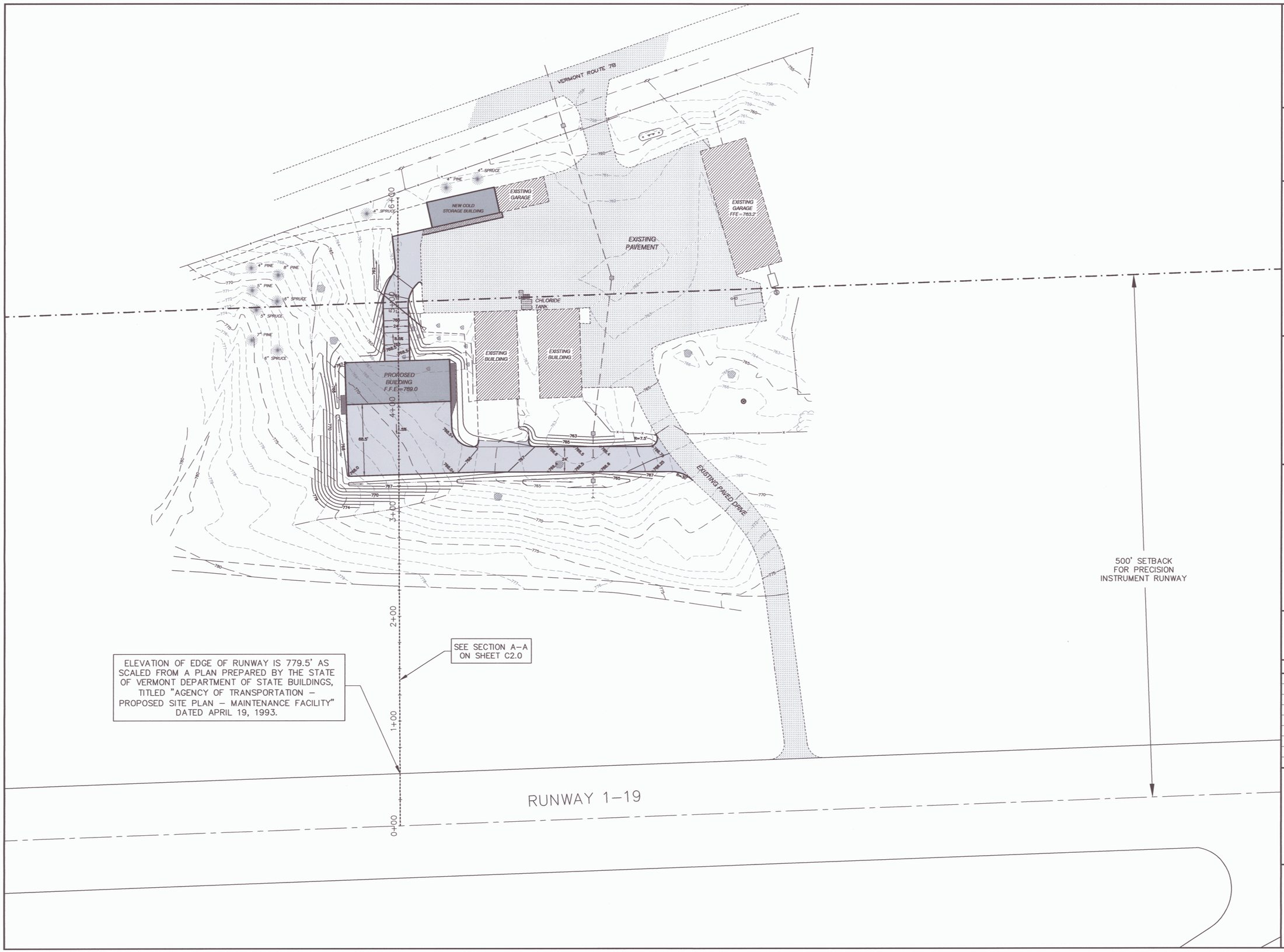

SITE ENGINEER:

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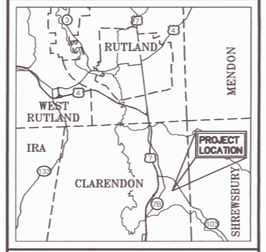
STATE OF VERMONT
VERMONT AGENCY OF TRANSPORTATION
MONTPELIER, VERMONT

PROJECT:

SNOW REMOVAL EQUIPMENT BUILDING

ROUTE 7B
CLARENDON, VERMONT



LOCATION MAP
1" = ±3 Miles

DATE	CHECKED	REVISION

OVERALL SITE PLAN

DATE: 12/28/2005
SCALE: 1" = 40'
PROJ. NO.: 05102.03
DRAWING NUMBER: C1.0

001

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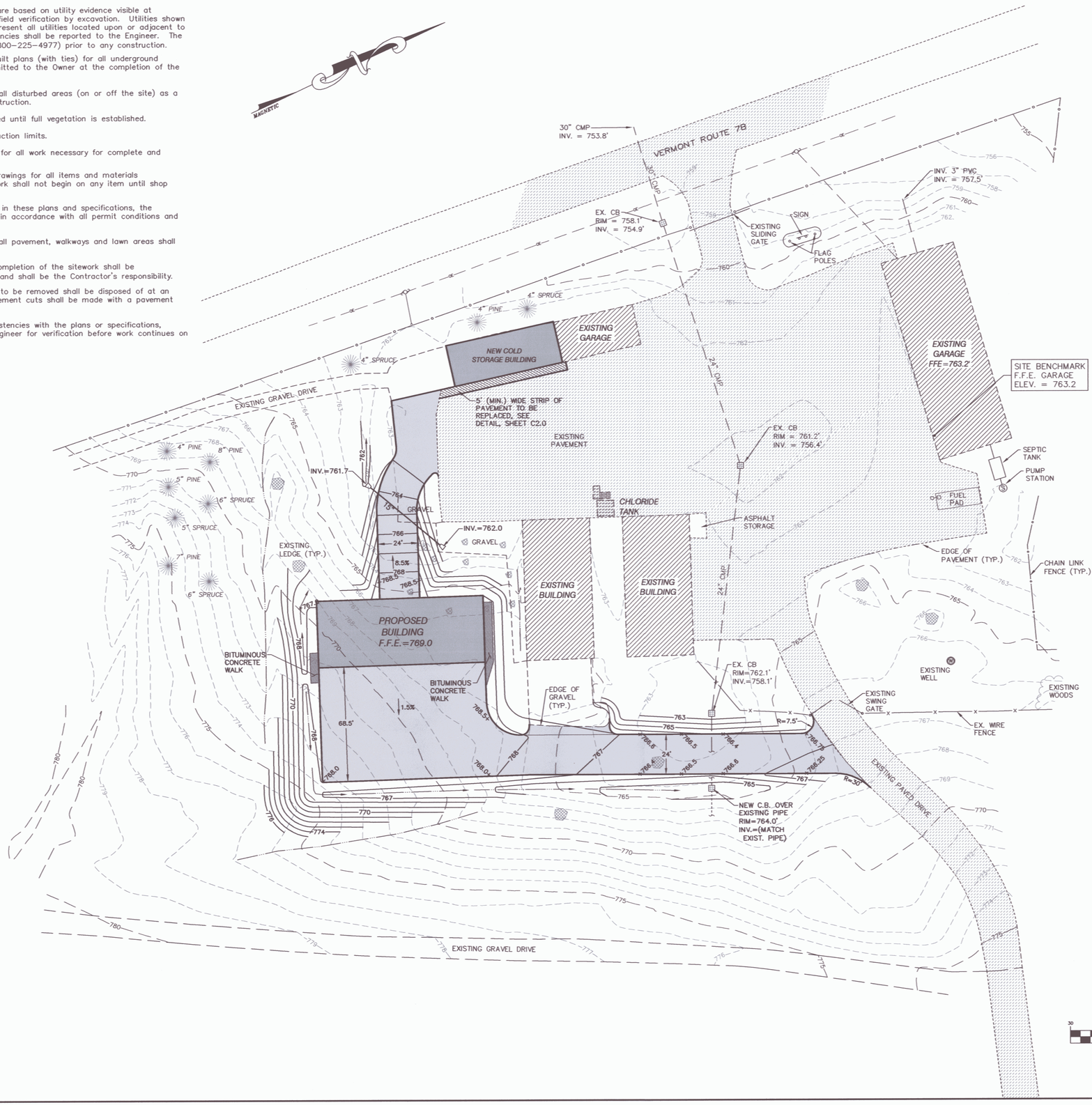
NOTES:

1. Underground utilities shown hereon are based on utility evidence visible at ground surface and are subject to field verification by excavation. Utilities shown do not purport to constitute or represent all utilities located upon or adjacent to the surveyed premises. All discrepancies shall be reported to the Engineer. The Contractor shall contact Dig Safe (800–225–4977) prior to any construction.
2. The Contractor shall maintain as–built plans (with ties) for all underground utilities. Those plans shall be submitted to the Owner at the completion of the project.
3. The Contractor shall repair/restore all disturbed areas (on or off the site) as a direct or indirect result of the construction.
4. All grassed areas shall be maintained until full vegetation is established.
5. Maintain all trees outside of construction limits.
6. The Contractor shall be responsible for all work necessary for complete and operable facilities and utilities.
7. The Contractor shall submit shop drawings for all items and materials incorporated into the site work. Work shall not begin on any item until shop drawing approval is granted.
8. In addition to the requirements set in these plans and specifications, the Contractor shall complete the work in accordance with all permit conditions and any local Public Works Standards.
9. The tolerance for finish grades for all pavement, walkways and lawn areas shall be 0.1 feet.
10. Any dewatering necessary for the completion of the sitework shall be considered as part of the contract and shall be the Contractor's responsibility.
11. Existing pavement and tree stumps to be removed shall be disposed of at an approved off–site location. All pavement cuts shall be made with a pavement saw.
12. If there are any conflicts or inconsistencies with the plans or specifications, the Contractor shall contact the Engineer for verification before work continues on the item in question.



LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- SS — GRAVITY SEWER LINE
- FM — FORCE MAIN
- W — WATER LINE
- OE — OVERHEAD ELECTRIC
- ST — STORM DRAINAGE LINE
- SEWER MANHOLE
- POWER POLE
- CATCH BASIN
- LIGHT POLE
- SIGN
- DECIDUOUS TREE
- CONIFEROUS TREE
- EDGE OF BRUSH/WOODS
- FENCE
- DRAINAGE SWALE

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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SNOW REMOVAL EQUIPMENT BUILDING

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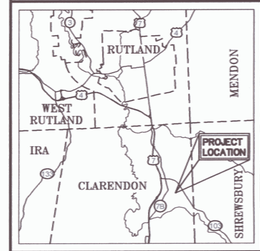
CLARENDON, VERMONT



LOCATION MAP
1" = ±3 Miles

DATE	CHECKED	REVISION

PROPOSED SITE PLAN

DATE: 12/28/2005
SCALE: 1" = 30'
PROJ. NO.: 05102.03

DRAWING NUMBER: C1.1

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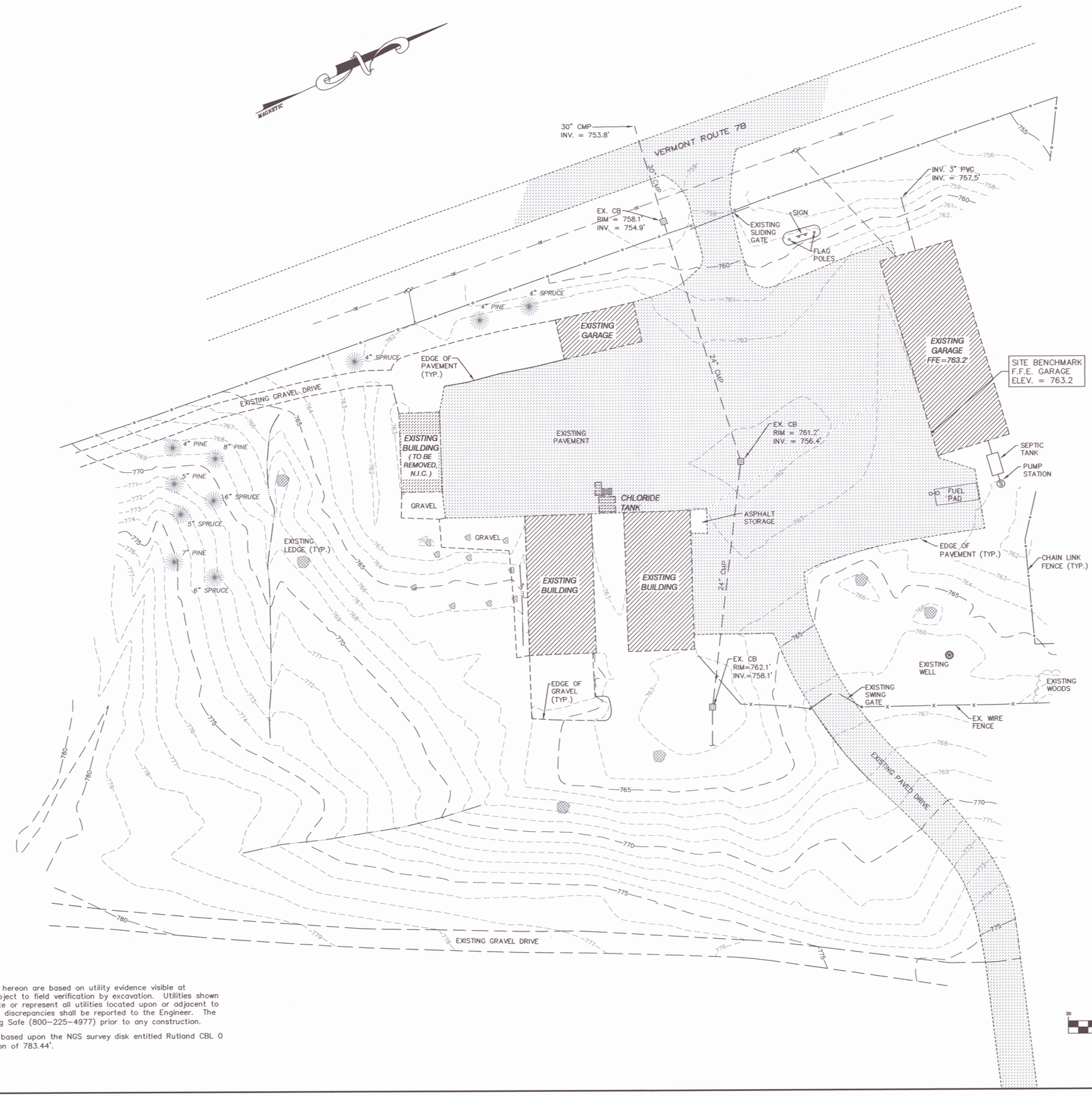

LEGEND

- EXISTING CONTOUR
- SS — GRAVITY SEWER LINE
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- OE — OVERHEAD ELECTRIC
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- LIGHT POLE
- SIGN
- DECIDUOUS TREE
- CONIFEROUS TREE
- EDGE OF BRUSH/WOODS
- FENCE
- DRAINAGE SWALE

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

NOTES:

1. Underground utilities shown hereon are based on utility evidence visible at ground surface and are subject to field verification by excavation. Utilities shown do not purport to constitute or represent all utilities located upon or adjacent to the surveyed premises. All discrepancies shall be reported to the Engineer. The Contractor shall contact Dig Safe (800–225–4977) prior to any construction.
2. Elevations are NAVD 88 – based upon the NGS survey disk entitled Rutland CBL 0 – with a measured elevation of 783.44'.

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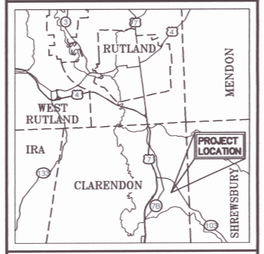
CLARENDON, VERMONT



LOCATION MAP
1" = ±3 Miles

DATE	CHECKED	REVISION
12/28/05	BCE	GENERAL REVISIONS

EXISTING CONDITIONS

DATE: OCT., 2005
SCALE: 1" = 30'
PROJ. NO.: 05102.03

DRAWING NUMBER: C1.2

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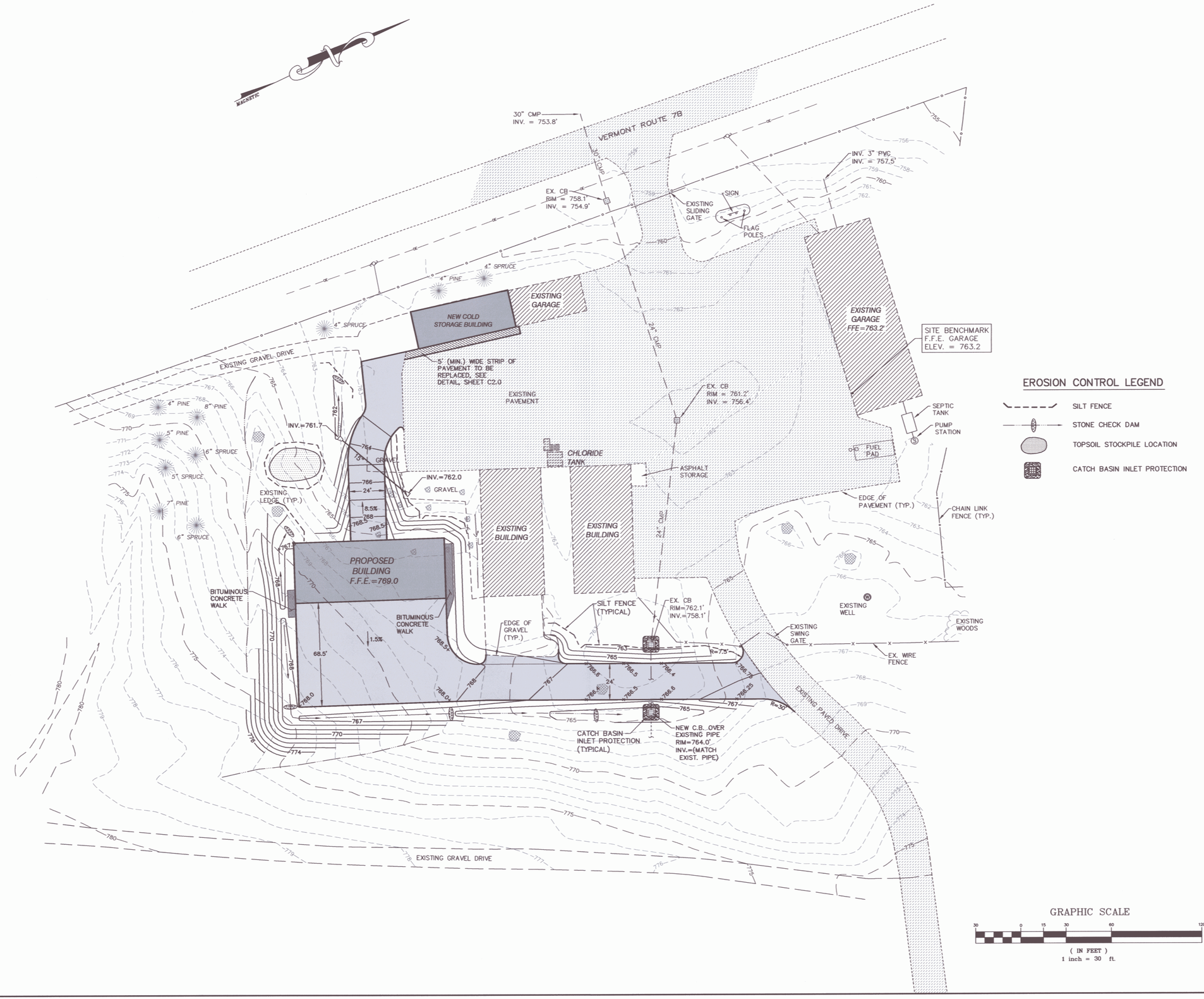

EROSION CONTROL LEGEND

- SILT FENCE
- STONE CHECK DAM
- TOPSOIL STOCKPILE LOCATION
- CATCH BASIN INLET PROTECTION

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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SNOW REMOVAL EQUIPMENT BUILDING
ROUTE 7B
CLARENDON, VERMONT

DATE	CHECKED	REVISION

EROSION CONTROL PLAN

DATE: 12/28/2005
SCALE: 1" = 30'
PROJ. NO.: 05102.03

DRAWING NUMBER: C1.3

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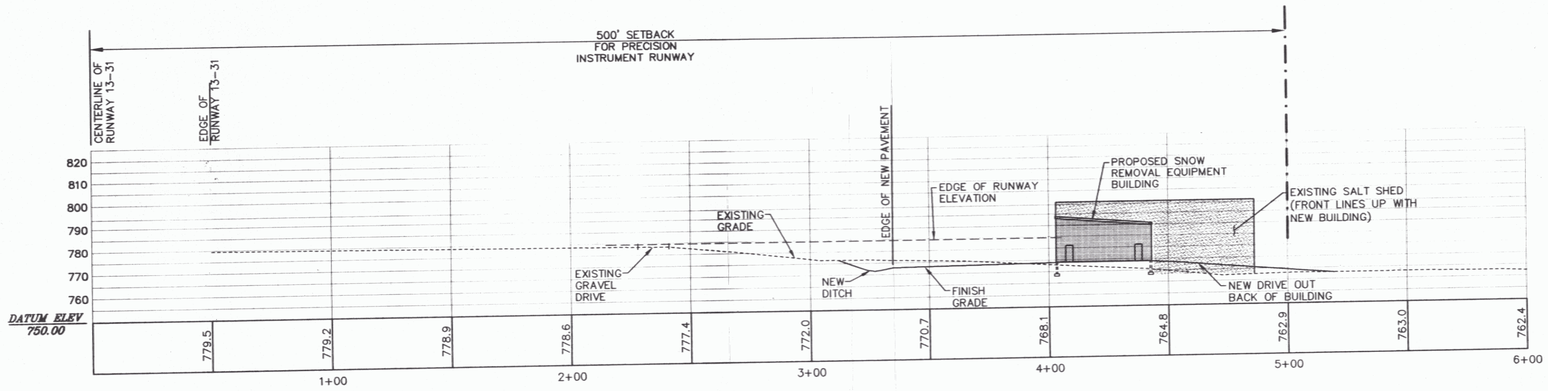
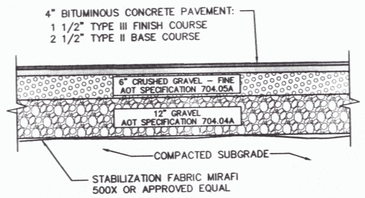


SECTION A–A
1" = 30'



TYPICAL PAVEMENT SECTION
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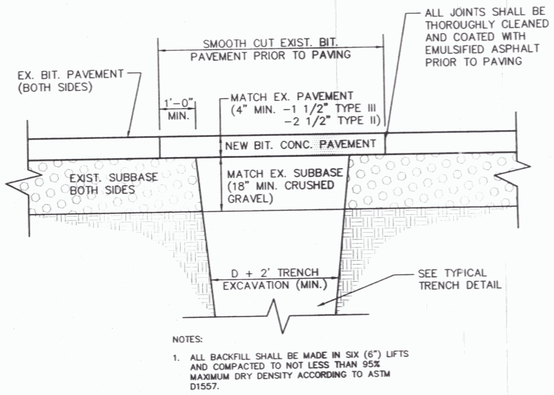
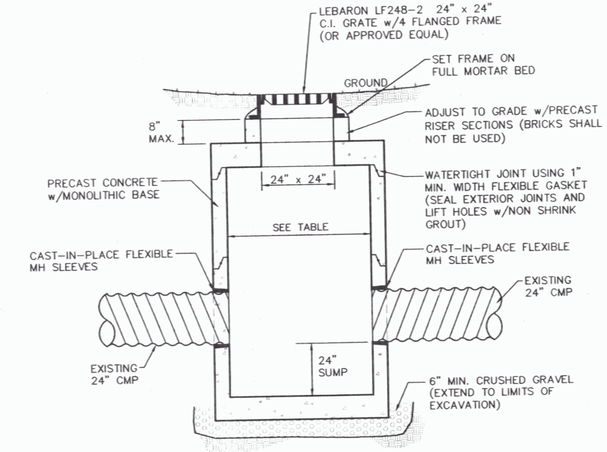


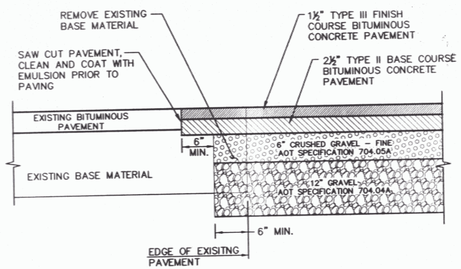
NOTES:
1. ALL BACKFILL SHALL BE MADE IN SIX (6") LIFTS AND COMPACTED TO NOT LESS THAN 95% MAXIMUM DRY DENSITY ACCORDING TO ASTM D1557.

REPLACEMENT OF EXIST. PAVEMENT
NTS



* PRECAST MANHOLE STRUCTURES SHALL CONFORM TO ASTM SPEC. C478 (LATEST EDITION).

TYPICAL CATCH BASIN
N.T.S.



TRANSITION FROM NEW PAVEMENT to EXISTING PAVEMENT
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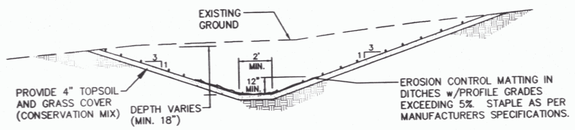

GRASS LINED DITCH
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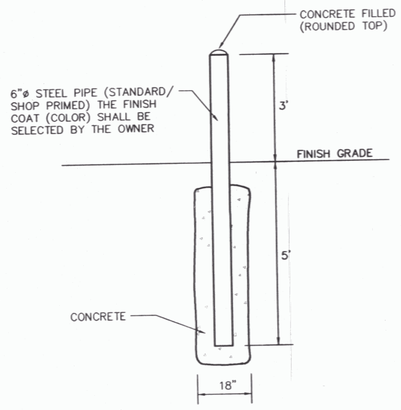

BOLLARD DETAIL
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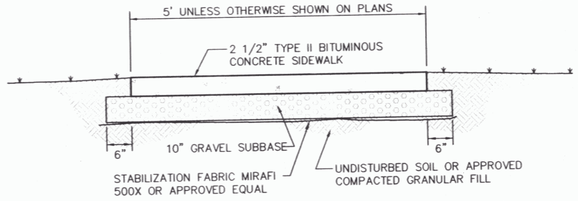

BITUMINOUS CONCRETE SIDEWALK DETAIL
N.T.S.

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MONTPELIER, VERMONT

PROJECT:
SNOW REMOVAL EQUIPMENT BUILDING
ROUTE 7B
CLARENDON, VERMONT

DATE	CHECKED	REVISION

SECTION and SITE DETAILS

DATE: 12/28/2005
SCALE: AS SHOWN
PROJ. NO.: 05102.03
DRAWING NUMBER: C2.0

005

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BUILDING BACKFILL

PART 1 – GENERAL

1.01 SUMMARY

A. Section includes:

1. Building perimeter and site structure backfilling to subgrade elevations.
2. Fill under slabs on grade.
3. Consolidation and compaction.
4. Fill for over–excavation.

1.02 REFERENCES

A. ANSI/ASTM C136 – Method for Sieve Analysis of Fine and Coarse Aggregates

B. ANSI/ASTM D1557 – Test Methods for Moisture–Density Relations of Soils and Soil–Aggregate Mixtures

1.03 SUBMITTALS

A. Testing laboratory reports indicating that material for backfill under structure meets requirements of this Section.

B. Field density test reports of backfill in place.

PART 2 – PRODUCTS

2.01 FILL MATERIALS

A. Structural Fill (Crushed Gravel, AOT Spec. 704.05A, Fine): Free of shale, clay, friable material, sand, debris; graded in accordance with ANSI/ASTM C136 within the following limits:

Sieve Size	Percent Passing
2"	100
1 1/2"	90 – 100
No. 4	30 – 60
No. 100	0 – 12
No. 200	0 – 6

B. Compacted Fill/Granular Backfill: Free of shale, clay, friable material, debris, and organic matter, graded in accordance with ANSI/ASTM C136 within the following limits:

Sieve Size	Percent Passing
3"	100
3/4"	75 – 100
No. 4	20 – 100
No. 100	0 – 20
No. 200	0 – 6

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verify fill materials to be reused are acceptable.

B. Verify underground tanks are anchored to their own foundation to avoid floatation after backfilling.

3.02 PREPARATION

A. Generally, compact subgrade to density requirements for subsequent backfill materials.

B. Cut out soft areas of subgrade not capable of insitu compaction. Backfill with crushed gravel fill and compact to density equal to or greater than requirements for subsequent backfill material.

C. Prior to placement of aggregate base course material, compact subsoil to 95 percent of its maximum dry density in accordance with ANSI/ASTM D1557.

3.03 BACKFILLING

A. Backfill areas to contours and elevations with unfrozen materials.

B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.

C. Place geotextile fabric as shown in the plans.

D. Granular Backfill: Place and compact materials in continuous layers not exceeding 8 inches compacted depth.

E. Employ a placement method that does not disturb or damage foundation perimeter drainage and utilities in trenches.

F. Maintain optimum moisture content of backfill materials to attain required compaction density.

G. Backfill against supported foundation walls: Do not backfill against unsupported foundation walls. No backfill material shall be placed against a newly completed structure until the concrete has been cured for 7 days.

H. Backfill simultaneously on each side of unsupported foundation walls until supports are in place.

I. Slope grade away from building a minimum of ¼ inch per foot, or as shown in plans, unless noted otherwise.

J. Make grade changes gradual. Blend slope into level areas.

3.04 TOLERANCES

A. Surface of fill under building slabs shall be graded smooth and even, free of voids, compacted as specified, and to the required elevation. Fill shall be final graded to within a tolerance of ½" when tested with a 10' straight edge.

3.05 FIELD QUALITY CONTROL

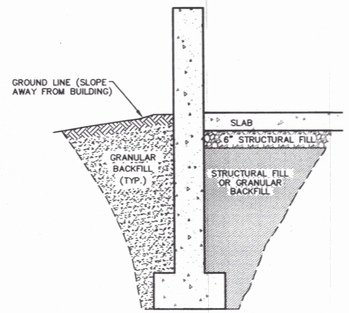
A. Compaction Requirements: Modified Proctor/ASTM D1557.

B. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to Owner.

3.06 SCHEDULE

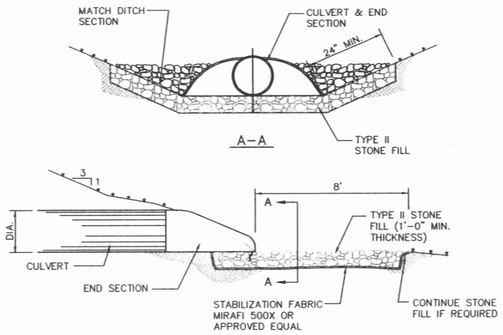
All backfills to be placed in 8" (Maximum) lifts, compacted as specified below:

LOCATION	MATERIAL	% COMPACTION MODIFIED PROCTOR ASTM D–1557
Under Footings	Undisturbed Native Material: or Structural Fill	-- 98%
Interior Slab–on–Grade	Structural Fill	95%
Interior, Adjacent to Foundation Walls	Structural Fill: or Granular Backfill	95% 95%
Exterior, Adjacent to Foundation Walls	Structural Fill: or Granular Backfill	90% 90%



TYPICAL FOUNDATION BACKFILL SECTION

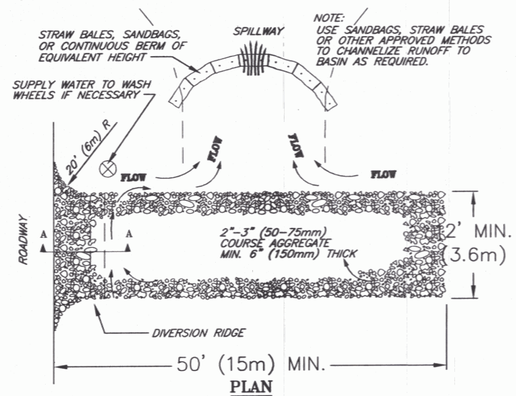
N.T.S.



END SECTION DETAIL

N.T.S.

SECTION A – A



PLAN

NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT–OF–WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

STABILIZED CONSTRUCTION ENTRANCE

N.T.S.

SITE ENGINEER:

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MONTPELIER, VERMONT

PROJECT:

SNOW REMOVAL EQUIPMENT BUILDING
ROUTE 7B
CLARENDON, VERMONT

DATE	CHECKED	REVISION

BUILDING BACKILL and SITE NOTES and DETAILS

DATE: 12/28/2005
SCALE: AS SHOWN
PROJ. NO.: 05102.03

DRAWING NUMBER: C2.1

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EROSION CONTROL REQUIREMENTS

PART 1 – GENERAL

1.01 SUMMARY

A. The work under this section includes but is not limited to providing all labor, equipment and materials for the installation of all required site related erosion control measures. If not otherwise directed on the plans, erosion control shall be in strict conformity with the latest revision of the "Vermont Handbook for Soil Erosion and Sediment Control on Construction Sites".

1.02 GENERAL NOTES

A. The discharge of sediment laden water from the project site is prohibited. All discharged water from dewatering operations shall discharge into a temporary sedimentation basin.

B. Contractor shall install all erosion control measures as depicted on plans and details or as recommended by the Vermont Agency of Natural Resources, or Soil Conservation Service, prior to any construction. Contractor shall also be responsible for inspecting and maintaining all erosion control measures until project is completed.

C. Contractor shall also limit the soil disturbance and seeding application dates to between May 1st and October 15th. If soil disturbance occurs later than October 15th and prior to May 1st, winter erosion control measures will be necessary. Contractor shall consult with the Engineer for additional site specific winter erosion control measures.

D. All stockpile material (topsoil, borrow, etc.) will have a hay bale dike or silt fence constructed around the perimeter. Seed and mulch stockpiled material as soon as possible to prevent soil erosion and sedimentation off site. Locate stockpiles on the uphill side of the disturbed areas, if possible. During windy conditions, stockpiled material shall be covered or watered appropriately to prevent wind erosion.

E. Slopes greater than 1:3 shall have erosion control netting installed to stabilize the slope and reduce the erosion potential. Install netting over mulched slopes so that all parts are in contract with the soil and mulch. Pin netting with wire staples 3' o.c. to ensure full bonding with soil surface.

F. Install stone check dams in grass-lined swales 50 feet on center to prevent silt from washing into the drainage system during construction. Check dams shall be removed when vegetation is established.

G. Control dust through the application of calcium chloride or water. An average application of one pound of calcium chloride per square yard of exposed area should be considered for each treatment. The exact number of applications and amount of dust controller shall be based upon field and weather conditions. It shall be spread in such manner and by such devices that uniform distribution is attained over the entire area on which it is ordered placed.

PART 2 – PRODUCTS

2.01 EROSION CONTROL NETTING

A. Jute netting shall consist of undyed and unbleached yarn woven into a uniform open plain weave mesh.

2.02 EROSION CONTROL MATTING

A. Where required on the plans or where directed by the Engineer, erosion control blankets (matting) shall be North American Green C125 for swales, and SC150 for slope stabilization, or approved equal.

2.03 FILTER FABRIC

A. When filter fabric is require, it shall conform to the requirements of Mirafi 140NS or approved equivalent.

2.04 CALCIUM CHLORIDE

A. Calcium chloride shall conform to the requirements of AASHTO M 144. Either regular flake calcium chloride, Type 1 or concentrated flake, pellet or other granular calcium chloride, Type 2, may be used.

2.05 WATER

A. All water used shall be clean and free of harmful amounts of oil, salt, acids, alkalies, sugar, organic matter and other substances injurious to the finished product, plant life or the establishment of vegetation.

PART 3 – EXECUTION

3.01 STONE CHECK DAM AND CATCH BASIN INLET PROTECTION

A. Stone check dams to be constructed as outlined in the "STONE CHECK DAM STRUCTURE" detail and spaced as indicated or as instructed by the Engineer. Once vegetation is established and the check dams are no longer needed for erosion control, they shall be removed.

B. Catch Basin inlet protection is to be constructed as outlined in the "CATCH BASIN INLET PROTECTION (WITH METAL STAKES)", or the "CATCH BASIN INLET PROTECTION (WITH CONCRETE BLOCKS)", detail and placed as indicated or as instructed by the Engineer. Once vegetation is established and the inlet protection is no longer needed for erosion control, it shall be removed.

3.02 SILT FENCES

A. The silt fences shall be constructed in accordance with the construction detail. The fence shall generally be placed 10 feet from the toe of the slope or as shown on the plans. The ends of the fence shall be placed uphill to form a horseshoe shape to trap all runoff.

B. The silt fences shall be inspected periodically for damage or build-up of sediments. All damaged fences shall be repaired or replaced. Sediment deposits shall be removed from the fence as they build up and be placed in an area where there is no danger of further erosion.

3.03 EROSION MATTING

A. Erosion matting shall be placed on all grass-lined ditches with profile grades exceeding 5.0% and shall be placed and maintained in accordance with the Vermont Agency of Transportation Standard Specifications Sections 654 and 755.07.

3.04 RESTORATION

A. As soon as construction is completed in a given area, it shall be topsoiled, seeded, fertilized and mulched as specified in the Permanent Seeding section.

3.05 GRASS-LINED DITCHES

A. All ditches that are not stone-lined shall be topsoiled, seeded, fertilized and mulched. Any area which shows signs of erosion shall be reseeded immediately and maintained until permanent vegetation is established.

3.06 TEMPORARY DIVERSION DITCH

A. Some diversion ditches will be temporary in nature with shallow slopes and therefore will not need to be stabilized with stone or seeding. These ditches will act as infiltrative areas and will have stone check dams to minimize the move of fine grained materials.

3.07 MAINTENANCE

A. All erosion control measures shall be inspected weekly and repaired and/or replaced as needed.

B. All erosion control measures shall be inspected after periods of heavy rain.

C. The stabilized road entrance shall be top dressed with additional stone should the existing stone become clogged with sediment.

D. Hay or straw mulch is subject to wind action. Mulch may require anchoring as the weather conditions warrant.

3.08 WINTER CONSTRUCTION

A. If, due to the project schedule, construction during the winter months is necessary, the Contractor shall follow the winter construction procedures outlined in the "Vermont Handbook for Soil Erosion and Sediment Control on Construction Sites".
1. Minimize disturbance between October and May.
2. All erosion control measures shall be in place prior to the ground freezing.
3. Mulch shall be applied to all disturbed areas at a rate of 90 pounds per 1,000 square feet. The Contractor shall maintain all areas that are mulched until permanent vegetation can be established.

TEMPORARY SEEDING

PART 1 – GENERAL

1.01 SUMMARY

A. Section includes:
1. Furnishing all labor, materials and equipment to complete all seeding required to provide temporary protection against wind or water erosion.

1.02 GENERAL NOTES

A. Adequate seed bed preparation, use of quality seed, and timely planting are required to achieve a good stand of vegetation to control erosion.

PART 2 – PRODUCTS

2.01 GENERAL

A. At a minimum, all products shall meet the requirements of the Permanent Seeding Section.

PART 3 – EXECUTION

3.01 SEEDING CONDITIONS

A. All essential grading and all temporary structures, such as diversions, dams, ditches, and drains needed to prevent gullying and reduce siltation, should be completed prior to seeding.

3.02 SEED AND SEEDING

A. Seed and seeding rates may be selected from the table below. The selection will be based on the time of year the seeding is to be made and the length of time the vegetation is to afford the protection. The seed should be spread uniformly over the area. After seeding, the soil should be firmed by rolling or packing. Where rolling or packing is not feasible, the seed should be covered lightly by raking, disking, or dragging.

B. Plant Selection and Seeding Rates:

Species	Per Acre	Per 1000 Sq. Ft.	Remarks
Annual Ryegrass	40 lbs.	1 lb.	Grows quickly, but is of short duration. Use where appearances are important. Seed early spring and/or between August 15 and September 15. Cover the seed with no more than 0.25 inch of soil.
Perennial Ryegrass	30 lbs.	0.7 lbs.	Good cover which is longer lasting than annual ryegrass. Seed between April 1 and June 1 and/or between August 15 and September 15. Mulching will allow seeding throughout the growing season. Seed to a depth of approximately .5 inch.

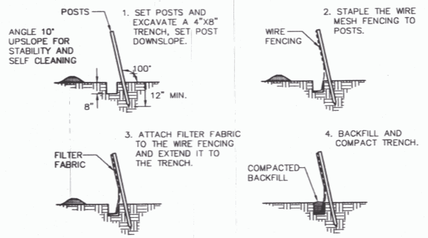
3.04 MULCHING

A. Where it is impracticable to incorporate fertilizer and seed into moist soil, the seeded area should be mulched to facilitate germination.

3.05 MAINTENANCE

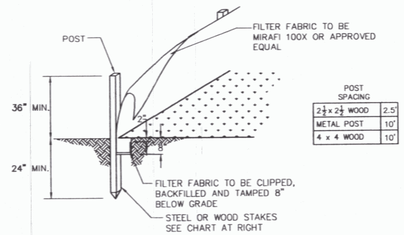
A. If the seeding fails to grow, it may need to be re-established to provide adequate erosion control.

B. If weeds become a problem, they may need to be controlled by mowing.



SILT FENCE CONSTRUCTION DETAIL

N.T.S.

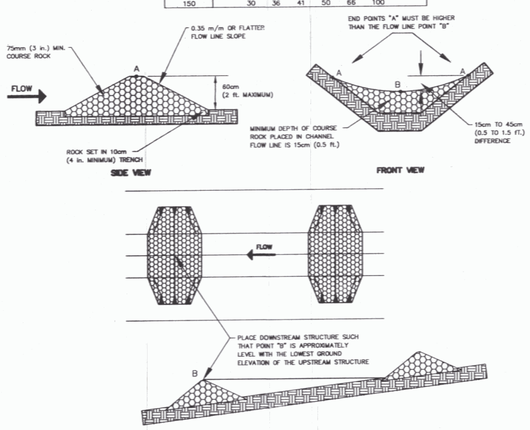


1. INSTALL MIRIFI ENVIROFENCE, OR APPROVED EQUAL OR AS DETAILED HEREIN.
2. INSTALL SILT FENCES AT TOES OF ALL UNPROTECTED SLOPES AND AS PARALLEL TO CONTOURS AS POSSIBLE. THIS INCLUDES ALL FILLED OR UNPROTECTED SLOPES CREATED DURING CONSTRUCTION, NOT NECESSARILY REFLECTED ON THE FINAL PLANS. CURVE THE ENDS OF THE FENCE UP INTO THE SLOPE. REMOVE SEDIMENT WHEN ACCUMULATED TO HALF THE HEIGHT OF THE FENCE. SILT FENCES ARE TO BE MAINTAINED UNTIL SLOPES ARE STABILIZED.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6", FOLDED AND STAPLED.

SILT FENCE DETAIL

N.T.S.

D-50 OF ROCK (MM)	DOWNSTREAM FLOWLINE SLOPE OF STRUCTURE (m/m) 0.35	0.30	0.25	0.20	0.15	0.10
	MAXIMUM WATER DEPTH OVER ROCK (mm.)					
75	15	18	20	25	33	48
150	30	36	41	50	66	100



STONE CHECK DAM STRUCTURE

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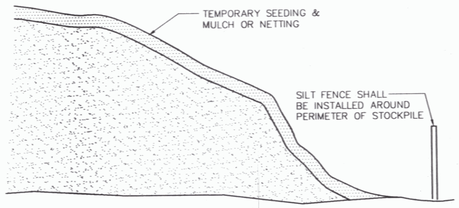

TEMPORARY STOCKPILE DETAIL

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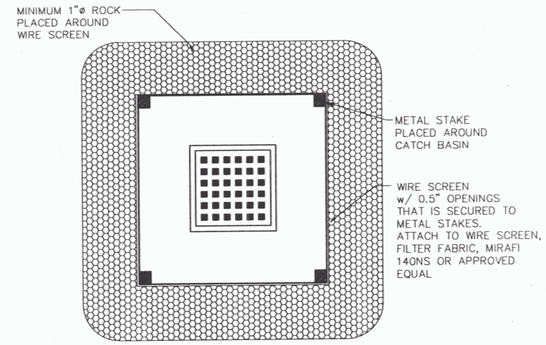
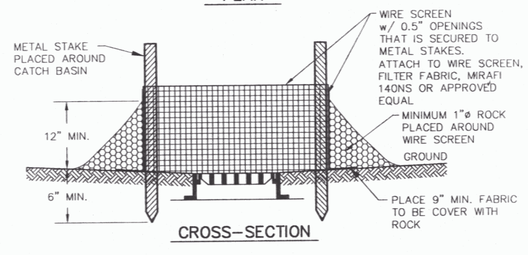


PLAN

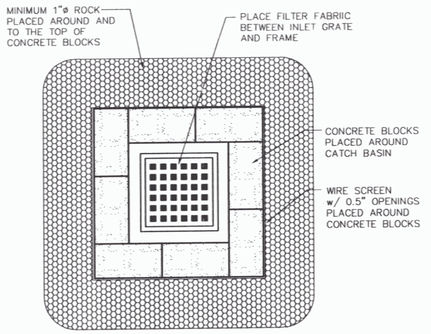


CROSS-SECTION

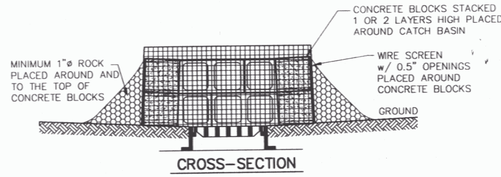
CATCH BASIN INLET PROTECTION (WITH METAL STAKES)

N.T.S.

or



PLAN



CROSS-SECTION

CATCH BASIN INLET PROTECTION (WITH CONC. BLOCKS)

N.T.S.

SITE ENGINEER:

CIVIL ENGINEERING ASSOCIATES, INC.
P.O. BOX 485 SHELBURNE, VT 05482
802-985-2323 FAX: 802-985-2271 web: www.cea-vt.com

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DRAWN CJG
CHECKED BCE
APPROVED BCE

OWNER:

STATE OF VERMONT
VERMONT AGENCY OF TRANSPORTATION
MONTPELIER, VERMONT

PROJECT:

SNOW REMOVAL EQUIPMENT BUILDING
ROUTE 7B
CLARENDON, VERMONT

DATE	CHECKED	REVISION

EROSION CONTROL NOTES and DETAILS

DATE 12/28/2005
SCALE AS SHOWN
PROJ. NO. 05102.03
DRAWING NUMBER C2.2

007

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SITE EARTHWORK

PART 1 – GENERAL

1.01 SUMMARY

A. Section includes:
1. All excavation (unless covered in other sections of these specifications), removal and stockpile of topsoil, stabilization fabric, and other miscellaneous and appurtenant works.
2. Site filling.
3. Roadway structural sections.

1.02 PROTECTION

A. Protect bench marks and existing structures.

B. Protect above or below grade utilities which are to remain.

1.03 SUBMITTALS

A. Testing laboratory reports indicating that material for backfill meets requirements of this Section.

B. Field density test reports of site fill in place.

C. Field density test reports for roadway structural sections in place.

D. Stabilization Fabric: Submit copies of manufacturer's specifications and installation instructions.

PART 2 – PRODUCTS

2.01 CRUSHED GRAVEL (AOT SPEC. 704.05A, FINE)

A. All materials shall be secured from approved sources. This gravel shall consist of angular and round fragments of hard durable rock of uniform quality throughout, reasonably free from thin elongated pieces, soft or disintegrated stone, dirt, organic or other objectionable matter. This material shall meet the following grading requirements:

Sieve Designation	Percent by Weight Passing Square Mesh Sieve
2"	100
1 1/2"	90 – 100
No. 4	30 – 60
No. 100	0 – 12
No. 200	0 – 6

2.02 GRAVEL FOR SUBBASE (AOT SPEC. 704.04A)

A. This material shall meet the following grading requirements:

Sieve Designation	Percent by Weight Passing Square Mesh Sieve
No. 4	20 – 60
No. 100	0 – 12
No. 200	0 – 6

The gravel shall be uniformly graded from coarse to fine and the maximum size stone particle shall not exceed 2/3 of the thickness of the layer being placed.

2.03 COMPACTED FILL/GRANULAR BORROW

A. This material shall be free of shale, clay, friable material, debris, and organic matter, graded in accordance with ANSI/ASTM C136 within the following limits:

Sieve Designation	Percent by Weight Passing Square Mesh Sieve
6"	100
3/4"	75 – 100
No. 4	20 – 100
No. 100	0 – 20
No. 200	0 – 12

2.04 GEOTECHNICAL – STABILIZATION FABRIC

A. This work shall consist of furnishing and placing an approved stabilization fabric on a prepared surface within the limits shown on the plans. The fabric shall meet, or exceed the following properties:
1. Grab tensile strength (ASTM D–1682) – 300 lbs.
2. Grab tensile elongation (ASTM D–1682) – 35 %
3. Burst strength (ASTM D–751) – 600 psi

PART 3 – EXECUTION

3.01 PREPARATION

A. Identify required lines, levels, contours, and datum.

B. Identify known below grade utilities. Stake and flag locations.

C. Maintain and protect existing utilities remaining which pass through work area.

D. Upon discovery of unknown utility or concealed conditions, discontinue affected work; notify Engineer.

3.02 EROSION CONTROL

A. Erosion control must be installed prior to beginning any earthwork operations.

3.03 SITE CLEARING

A. Clear areas required for access to site and execution of Work.

B. Maintain access to the site at all times.

C. Remove trees and shrubs within marked areas. Remove stumps, roots and tap roots and other projections 1 1/2" or greater in diameter to 2'–0" below the excavated surfaces in cut areas and 2'–0" below the exposed subgrade in fill areas.

D. Remove debris, rock, and extracted plant life from site.

E. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site.

3.04 TOPSOIL EXCAVATION

A. Excavate topsoil from areas to be excavated, re–landscaped or regraded and stockpile in areas designated on site or as directed by the Engineer.

B. Maintain the stockpile in a manner which will not obstruct the natural flow of drainage.
1. Maintain stockpile free from debris and trash.
2. Keep the topsoil damp to prevent dust and drying out.

3.05 SUBSOIL EXCAVATION

A. Excavate subsoil from areas to be regraded in accordance with plans.

B. Excavate subsoil required to accommodate site structures, construction operations, roads, and parking areas.

C. Grade top perimeter of excavation to prevent surface water from draining into excavation.

D. Notify engineer of unexpected subsurface conditions and discontinue affected work in area until notified to resume work.

E. Correct areas over–excavated by error as directed by the Engineer.

3.06 DITCHES

A. Cut accurately to the cross–sections, grades, and elevations shown.

B. Maintain excavations free from detrimental quantities of leaves, sticks, trash, and other debris until completion of the work.

C. Dispose of excavated materials as shown on the drawings or directed by the Engineer; except do not, in any case, deposit materials less than three feet from the edge of a ditch.

3.07 ROADWAY EMBANKMENTS AND BERMS

A. When embankments are to be made on a hillside, the slope of the original ground on which the embankments are to be constructed shall be stepped and properly drained as the fill is constructed so that adverse movements of the slopes do not occur.

B. Any excavated rock, ledge, boulders, and stone, except where required in the construction of other items or otherwise directed, shall be used in the construction of embankments to the extent of the project requirements and generally shall be placed so as to form the base of an embankment.

C. Frozen material shall not be used in the construction of embankments, nor shall the embankments or successive layers of the embankments be placed upon frozen material. Placement of material other than rock shall stop when the sustained air temperature, below 32 degrees Fahrenheit, prohibits the obtaining of the required compaction. If the material is otherwise acceptable, it shall be stockpiled and reserved for future use when its condition is acceptable for use in embankments.

D. When an embankment is to be constructed across a swamp, muck, or areas of unstable soils, the unsuitable material shall be excavated to reach soils of adequate bearing capacity and the embankment begun. Alternative methods, such as use of a stabilization fabric in place of excavation and backfill, may be utilized only after approval of same by the Engineer.

E. Material being placed in embankments shall be placed in horizontal layers of uniform thickness across the full width of the embankment. Stumps, trees, rubbish, and other unsuitable material shall not be placed in embankments.

F. Embankment areas shall be placed in eight–inch maximum lifts. Effective spreading equipment shall be used on each layer to obtain uniform thickness prior to compaction. Each layer shall be kept crowned to shed water to the outside edge of embankment and continuous leveling and manipulating will be required to assure uniform density. The entire area of each layer shall be uniformly compacted to at least the required minimum density by use of compaction equipment consisting of rollers, compactors, or a combination thereof. Earth–moving and other equipment not specifically manufactured for compaction purposes will not be considered as compaction equipment.

G. All fill material shall be compacted at a moisture content suitable for obtaining the required density. In no case shall the moisture content in each layer under construction be more than three percent above the optimum moisture content and shall be less than that quantity that will cause the embankment to become unstable during compaction. Sponginess, shoving, or other displacement under heavy equipment shall be considered evidence for an engineering determination of lack of stability under this requirement, and further placement of material in the area affected shall be stopped or retarded to allow the material to stabilize.

H. When the moisture content of the material in the layer under construction is less than the amount necessary to obtain satisfactory compaction by mechanical compaction methods, water shall be added by pressure distributors or other approved equipment. Water may also be added in excavation or borrow pits. The water shall be uniformly and thoroughly incorporated into the soil by disc, harrowing, blading, or by other approved methods. This manipulation may be omitted for sands and gravel. When the moisture content of the material is in excess of three percent above optimum moisture content, dry material shall be thoroughly incorporated into the wet material, or the wet material shall be aerated by disking, harrowing, blading, rotary mixing, or by other approved methods; or compaction of the layer of wet material shall be deferred until the layer has dried to the required moisture content by evaporation.

3.08 COMPACTION REQUIREMENTS

A. All backfills and fills shall be compacted in even lifts (12" maximum) to attain the required densities as follows:

Location	Standard Proctor ASTM D–1557
Subgrade (8") and Gravel for Roads and Parking Lots	95%
General Embankments	90%

BITUMINOUS CONCRETE PAVING

PART 1 – GENERAL

1.01 SUMMARY

A. Section includes:
1. Base Courses
2. Leveling Courses
3. Finish Course

B. General: This work shall consist of one or more courses of bituminous mixture, constructed on a prepared foundation in accordance with these Specifications and the type of surface being placed, and in conformity with the lines, grades, thicknesses and typical cross sections shown on the plans or established by the Engineer.

1.02 QUALITY ASSURANCE

A. Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. All materials and installation shall be in accordance with The Asphalt Institute Manual (MS–4) and the VAOT Standard Specifications, 2001.

C. Mixing Plant: Conform to State of Vermont Standards.

D. Obtain materials from same source throughout.

1.03 PROJECT CONDITIONS

A. Bituminous concrete shall not be placed between November 1 and May 1. Material shall not be placed when the granular subbase is wet or when the air temperature at the paving site in the shade and away from artificial heat is as follows:

Air Temperature Degrees Fahrenheit	Pavement Compacted Depth
40 Degrees or below	1 1/4" or Greater
50 Degrees or below	Less than 1 1/4"

PART 2 – PRODUCTS

2.01 MATERIALS

A. Materials shall be combined and graded to meet the criteria as defined in the VAOT Standard Specifications, Division 700 for bituminous concrete.

B. Gradation: Materials shall be combined and graded to meet composition limits specified in VAOT Standard Specification, Section 406.03, for the base course and finish course.
1. Unless specifically shown on the Plans, all bituminous concrete pavement shall be designed in conformance with the design criteria for heavy duty bituminous concrete pavement. (75 blows/side)
2. All Asphalt Cement used in the bituminous concrete pavement shall be PG 58–28 unless otherwise noted.

C. Thickness of paving for drives and parking lots shall be as shown on the plans, consisting of base course and finish course.

D. For pavement reconstruction areas due to trenching, the depth of each course shall be increased by 1/2". Pavement reconstruction caused by trench reopening due to improper placement or non–approved placement shall be performed at no additional cost to the Owner.

2.02 TRAFFIC MARKINGS

A. Traffic marking paint to be factory–mixed, meeting the requirements of the VAOT Standard Specifications, Section 708.08.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Install in accordance with VAOT Standard Specifications, Section 406.

3.02 EXAMINATION

A. Verify that compacted granular base is dry and ready to support paving and imposed loads.

B. Verify gradients and elevations of base are correct.

3.03 PREPARATION

A. Matching Surfaces: When a new pavement is to match an existing bituminous pavement for a roadway or trench, the Contractor shall vertically smooth cut the existing pavement, over the existing gravel base. The smooth cut shall be thoroughly cleaned and coated with Emulsified Asphalt, RS–1, just prior to paving.

3.04 PREPARATION – TACK COAT

A. When the bottom course of bituminous concrete pavement is left over the winter, or paving is to be made over an existing bituminous concrete pavement, the existing surface shall be cleaned and Emulsified Asphalt applied before the next course is applied.

B. Also apply to contact surfaces of curbs.

C. Coat surfaces of manhole and catch basin frames with oil to prevent bond with asphalt pavement. Do not tack coat these surfaces.

3.05 PLACING ASPHALT PAVEMENT

A. Place to compacted thickness identified on the plans.

B. Compact pavement by rolling. Do not displace or extrude pavement from position. Hand compact in areas inaccessible to rolling equipment.

C. Develop rolling with consecutive passes to achieve even and smooth finish, without roller marks.

3.06 JOINTS

A. Joints between old and new pavements or between successive day's work shall be made so as to insure a thorough and continuous bond between the old and new mixtures. Whenever the spreading process is interrupted long enough for the mixture to attain its initial stability, the paver shall be removed from the mat and a joint constructed.

B. Butt joints shall be formed by cutting the pavement in a vertical plane at right angles to the centerline where the pavement has a true surface as determined by the use of a straight–edge. The butt joint shall be thoroughly coated with Emulsified Asphalt, Type RS–1, just prior to depositing the paving mixtures.

C. Longitudinal joints that have become cold shall be coated with Emulsified Asphalt, Type RS–1, before the adjacent mat is placed. If they have been exposed to traffic, they shall be cut back to a clean vertical edge prior to painting with the emulsion.

D. Unless otherwise directed, longitudinal joints shall be offset at least 6" from any joint in the lower courses of pavement. Transverse joints shall not be constructed nearer than one foot from the transverse joints constructed in lower courses.

3.07 TOLERANCES

A. The surface will be tested by the Engineer using a 16 foot straight–edge at selected locations parallel with the centerline. Any variations exceeding 3/16 of an inch between any two contacts shall be satisfactorily eliminated. A 10 foot straight–edge may be used on a vertical curve. The straight–edges shall be provided by the Contractor.

B. Scheduled Compacted Thickness: Within 1/4 inch.

C. Variation from True Elevation: Within 1/2 inch.

3.08 FIELD QUALITY CONTROL

A. Permit no vehicular traffic on surfaces until thoroughly cool and hard.

3.09 REPAIR OF SUBSIDENCE

A. Settlement – Should any pavement settle within one year of completion of the Contract, such pavement shall be repaired at the Contractor's expense. If the Contractor fails to make such repairs promptly upon receipt of notice to do so from the Owner, then the Owner may make such repairs as necessary and the Contractor shall pay the Owner for all costs incurred in making such repairs.

3.10 MARKING PAVEMENT FOR PARKING

A. Striping – Thoroughly clean the areas to receive striping and locate all striping as indicated on the Contract Plans. All striping shall be 4" wide unless otherwise noted.

B. Miscellaneous – Provide handicapped symbols and all other miscellaneous signs and symbols as indicated on the Contract Plans.

DRAINAGE

PART 1 – GENERAL

1.01 SUMMARY

A. Section includes:
1. Culvert pipe and appurtenances.
2. Drainage structures.
3. Stone fill.

1.02 REFERENCES

A. Vermont Agency of Transportation Standard Specifications, 2001 Edition.

1.03 SUBMITTALS

A. Manufacturer's technical data for:
1. Pipe and appurtenances.
2. Structures.

PART 2 – PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Furnish ells, tees, reducing tees, wyes, couplings, increasers, crosses, transitions and end caps of the same type and class of material as the conduit, or of material having equal or superior physical and chemical properties as acceptable to the Engineer.

B. All culverts and storm drains shall meet the requirements of Section 601 of the Standard Specifications.

2.02 PIPE

A. If the contract plans do not specify a particular type of pipe, at the Contractor's option, the following materials may be used for the storm drainage pipe:
1. Polyvinyl Chloride pipe conforming to ASTM Specification D3034 or F679, (PVC) sewer pipe and fittings SDR 35.
2. Smooth Interior Polyethylene pipe meeting the requirements of Section 710.03.

2.03 CONCRETE STRUCTURES

A. ASTM C478, sized as indicated.

2.04 METAL ACCESSORIES

A. Manhole frames and covers:
1. Grey cast iron, ASTM A48, as shown on plans.

2.05 STONE FILL

A. The specified stone fill shall meet the grading requirements as follows:
1. Type I – The longest dimension of the stone shall vary from 1 inch to 12 inches, and at least 50 percent of the volume of the stone in place shall have a dimension of 4 inches.
2. Type II – The longest dimension of the stone shall vary from 2 inches to 36 inches, and at least 50 percent of the volume of the stone in place shall have a least dimension of 12 inches.
3. Type III – The longest dimension of the stone shall vary from 3 inches to 48 inches and at least 50 percent of the volume of the stone in place shall have a least dimension of 12 inches.
4. Type IV – The longest dimension of the stone shall vary from 3 inches to 60 inches, and at least 50 percent of the volume of the stone in place shall have a least dimension of 20 inches.

PART 3 – EXECUTION

3.01 INSPECTION

A. Examine the areas and conditions under which storm sewer system work is to be installed and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.

3.02 GENERAL

A. When existing underground utilities, which are not scheduled for removal or abandonment, are encountered in the excavation, they shall be adequately supported and protected from damage. Any damage to utilities shall be repaired promptly at no additional cost to the Owner.

3.03 PREPARATION

A. Hand trim excavation (where necessary) to required elevations. Correct over–excavations with fill material.

B. The slopes shall be graded to match the grade as shown on the plans. Where required, end sections shall be placed and backfilled to prevent undermining.

C. Remove large stones or other hard matter which could damage drainage structures or impede consistent backfilling or compaction.

3.04 INSTALLATION OF PIPE

A. All pipe and fittings shall be carefully examined for defects and no pipe or fittings shall be laid which are known to be defective. If any defective piece is discovered after laying, it shall be removed and replaced at the Contractor's expense. All pipes and fittings shall be cleaned before they are laid and shall be kept clean until accepted in the completed work.

B. The pipe shall be laid to conform to the lines and grades indicated on the drawings or given by the Engineer. Each pipe shall be laid as to form a close joint with the next adjoining pipe and to bring the inverts continuously to the required grade.

C. Unless otherwise permitted by the Engineer, the Contractor shall provide for the temporary diversion of water to permit the installation of the pipe in a reasonably dry trench.

D. Where the pipe is to be laid below the existing ground line, a trench shall be excavated to the required depth and to a width sufficient to allow for joining of the pipe and compaction of the bedding and backfill material under and around the pipe.

E. The completed trench bottom shall be firm for its full length and width.

F. If indicated on the plans or directed by the Engineer, unsuitable foundation material encountered below the normal grade of the pipe bed shall be removed and replaced with Granular Backfill, or other specified or approved material.

G. The Contractor shall take all necessary precautions to prevent floatation of the pipe in the trench.

H. When pipe laying is not in progress, the open ends of the pipe shall be closed with temporary watertight plugs. If water is in the trench when work is resumed, the plug shall not be removed until all danger of water entering the pipe is eliminated.

3.05 MANHOLES

A. Precast concrete structures:
1. Place precast concrete structures and covers as shown on the Drawings.
2. Where manholes occur in pavement, set tops of frames and covers flush with finish surface.
3. Provide rubber joint gasket complying with ASTM C443.

SITE ENGINEER:
CIVIL ENGINEERING ASSOCIATES, INC.
P.O. BOX 485 SHELBURNE, VT 05482
802-985-2323 FAX: 802-985-2271 web: www.cea-vt.com
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DRAWN CJG
CHECKED BCE
APPROVED BCE

OWNER:
STATE OF VERMONT
VERMONT AGENCY OF TRANSPORTATION
MONTPELIER, VERMONT

PROJECT:
SNOW REMOVAL EQUIPMENT BUILDING
ROUTE 7B
CLARENDON, VERMONT

DATE	CHECKED	REVISION

SITE SPECIFICATIONS

DATE 12/28/2005
SCALE AS SHOWN
PROJ. NO. 05102.03
DRAWING NUMBER C3.0

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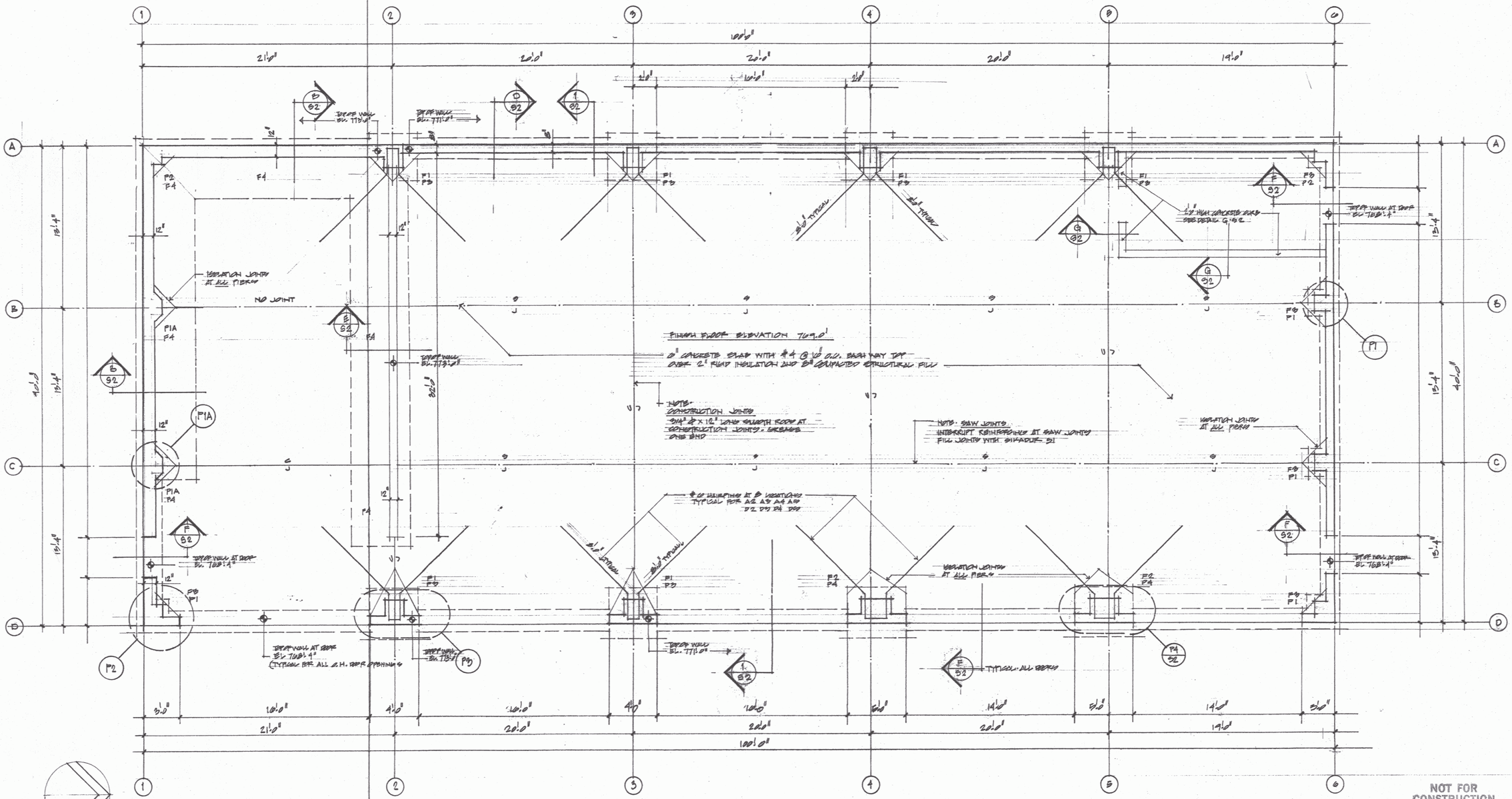


FOUNDATION PLAN

scale 1/4"=1'-0"

FOOTING SCHEDULE

MARK	SIZE	REINFORCING	NOTATION
F1	4'-0" x 4'-0" x 1'-0"	(5) #5 EACH WAY	
F2	5'-0" x 1'-10" x 1'-0"	(5) #5 EACH WAY	WINDERLIKE PIER
F3	2'-2" x 2'-2" x 1'-0"	(3) #5 EACH WAY	
F4	2'-0" x CONT. x 1'-0"	#4 @ 8" O.C. AND (7) #5	#4 @ 8" O.C. DIAG. - SEE SECTION E, DWG #2

NOTE:
"CJ" = CONSTRUCTION JOINT IN SLAB
"SJ" = SAW CUT CONTROL JOINT

NOT FOR CONSTRUCTION
6 January '00

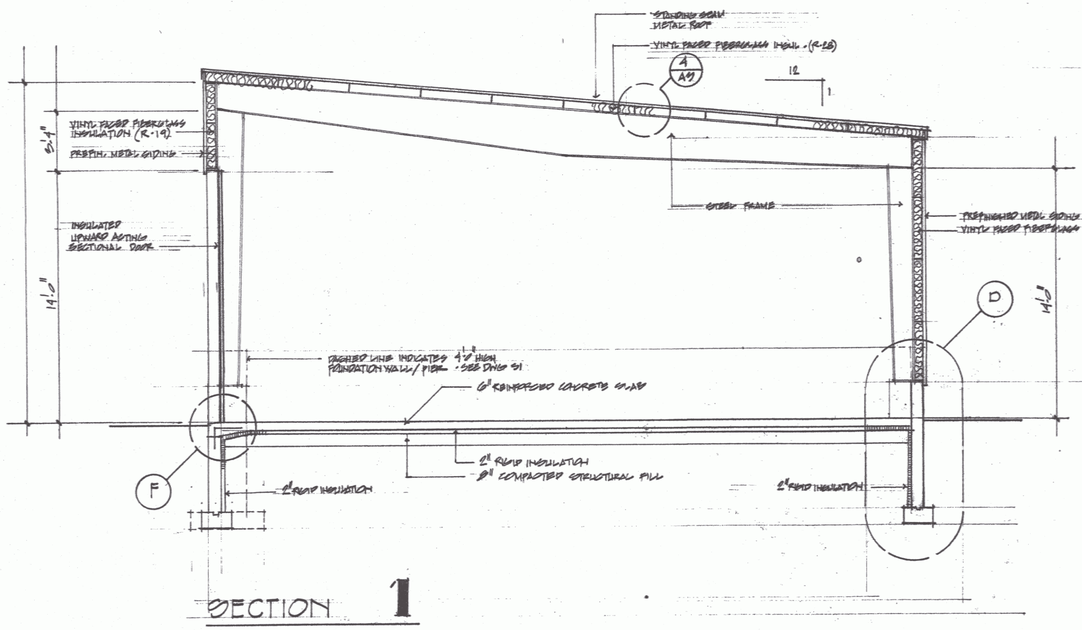
PROJECT:
NEW SNOW REMOVAL EQUIPMENT BLDG.
VERMONT AGENCY OF TRANSPORTATION
BARRE-ORS, VERMONT

TITLE:
FOUNDATION PLAN
FOOTING SCHEDULE

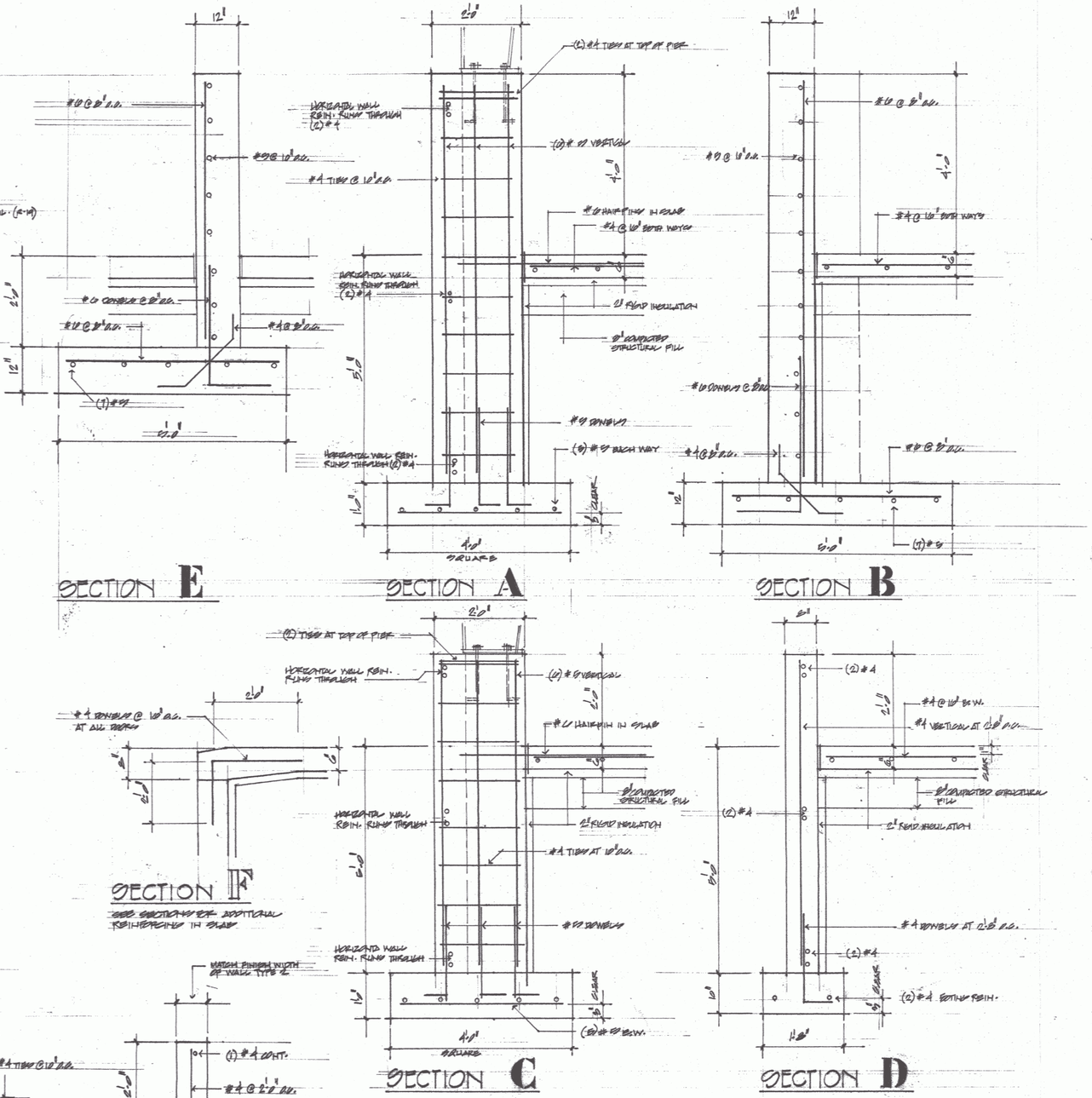
CHARLES E. METZ
ARCHITECT
THE GRIST MILL
BRADFORD VT 05033

DRAWING:
S1

009



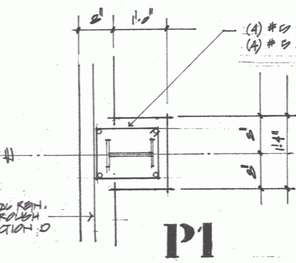
SECTION 1



SECTION E

SECTION A

SECTION B



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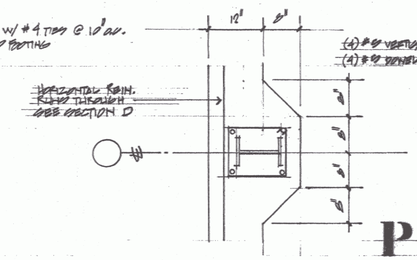

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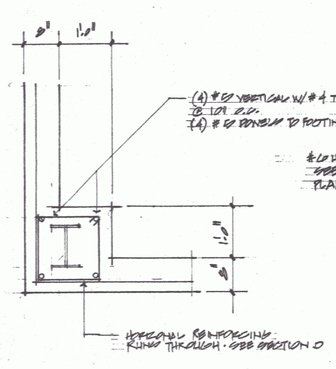

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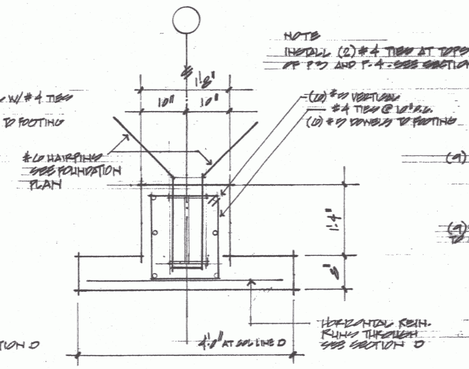

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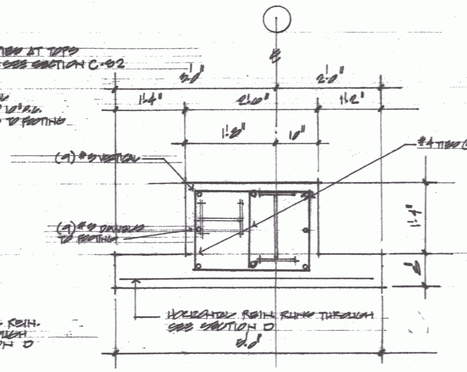


P4 WINDBRACE

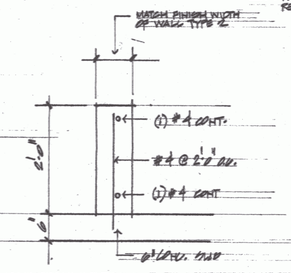
SECTION F

SEE SECTION C-02 FOR ADDITIONAL REINFORCING IN SLAB

SECTION A

SECTION C

SECTION D



SECTION G

REGISTERED ARCHITECT CHARLES E. METZ No. 005 STATE OF VERMONT

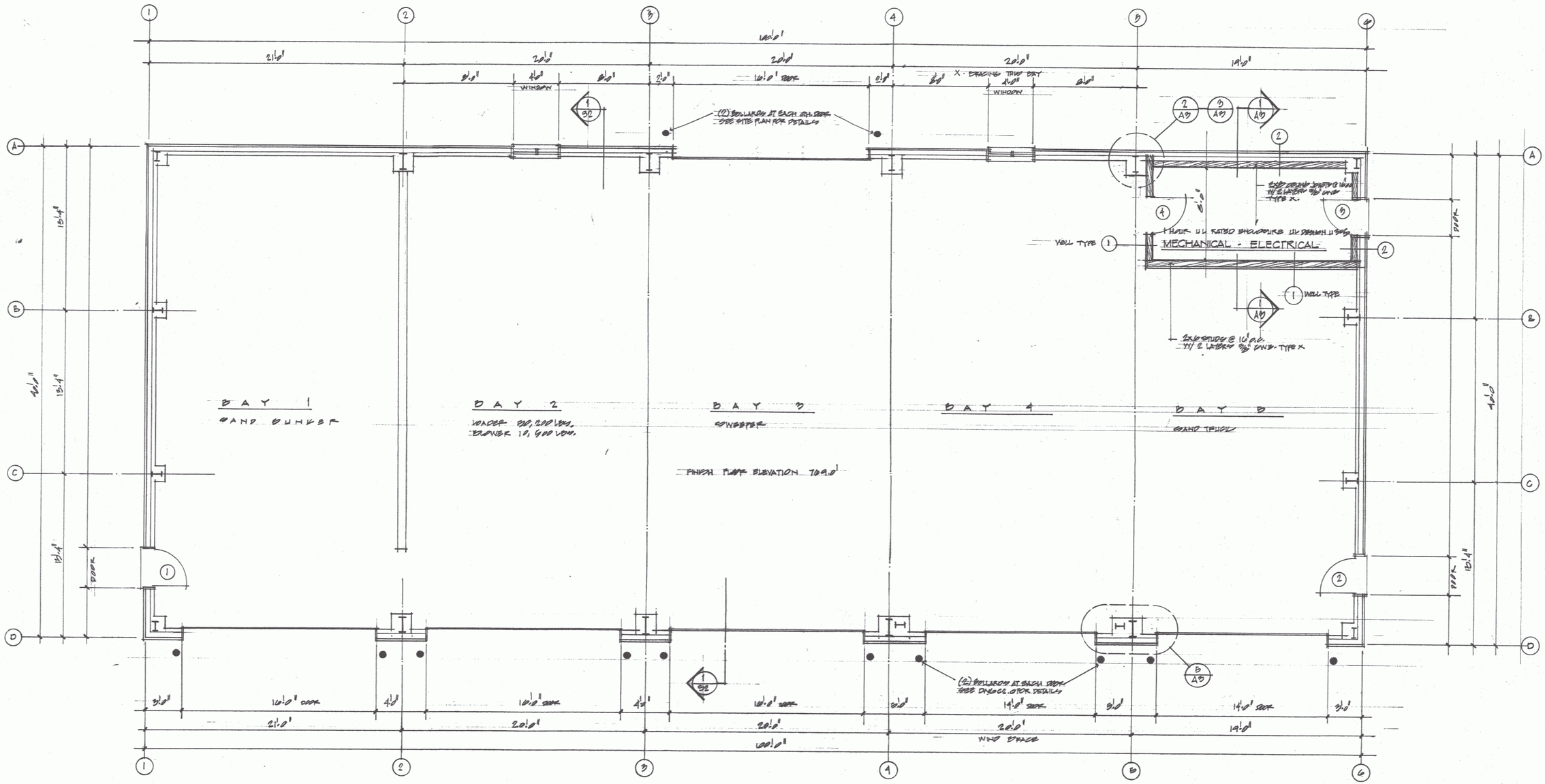
CHARLES E. METZ
ARCHITECT
THE GRIST MILL
BRADFORD VT 05033

PROJECT: NEW SNOW REMOVAL EQUIPMENT BLDG.
VERMONT AGENCY OF TRANSPORTION
ROUTE 78, SWANTON VERMONT

TITLE: SECTIONS A FOUNDATION DETAILS

DRAWING: S2

009a



FLOOR PLAN

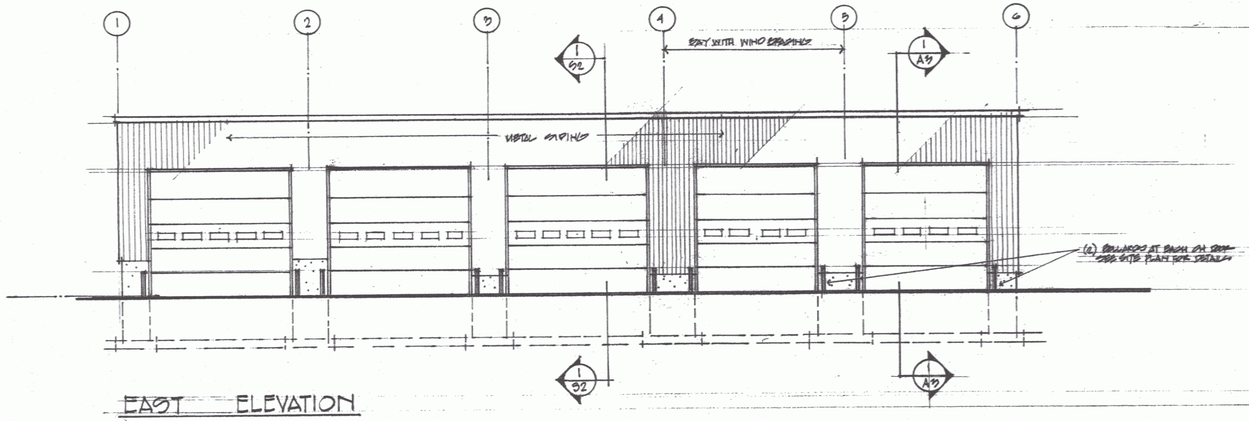
SCALE 1/4"-1'-0"

PROJECT:
NEW SNOW REMOVAL EQUIPMENT BLDG.
VERMONT AGENCY OF TRANSPORTATION
ROUTE 7 BY CLARENDON, VERMONT
TITLE:
FLOOR PLAN

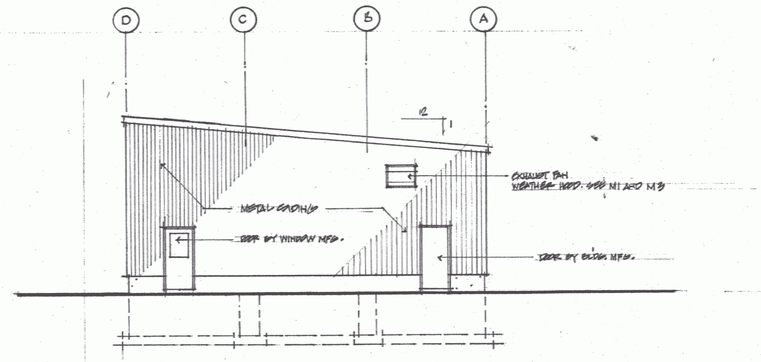
CHARLES E. METZ
ARCHITECT
THE GRIST MILL
BRADFORD VT 05033

DRAWING:
A1

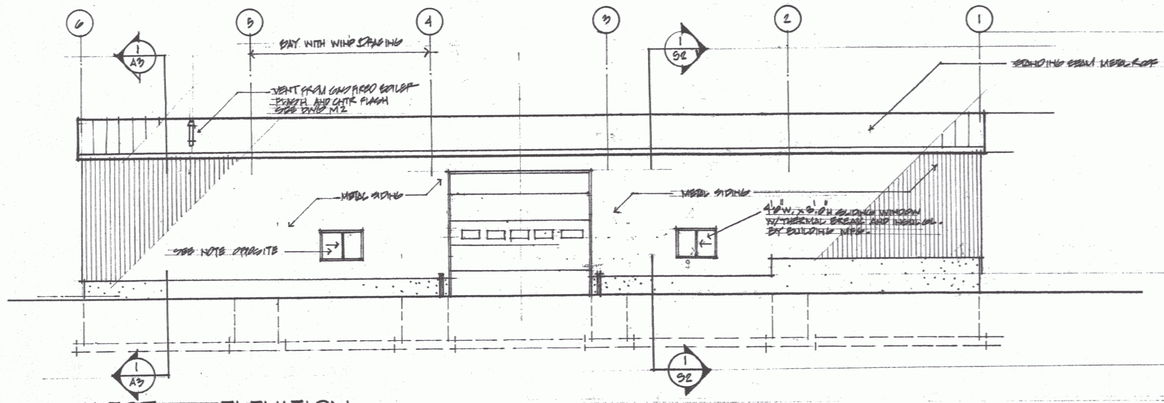
010



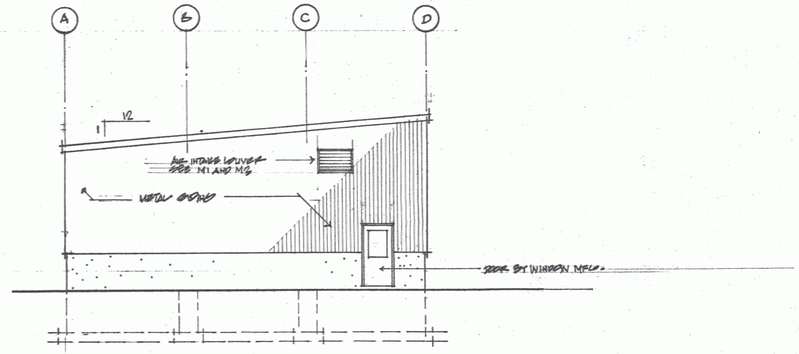
EAST ELEVATION



NORTH ELEVATION



WEST ELEVATION



SOUTH ELEVATION

PROJECT:
NEW ONION REMOVAL EQUIPMENT BLDG.
VERMONT AGENCY OF TRANSPORTATION
ROUTE 78 BARNARD, VERMONT

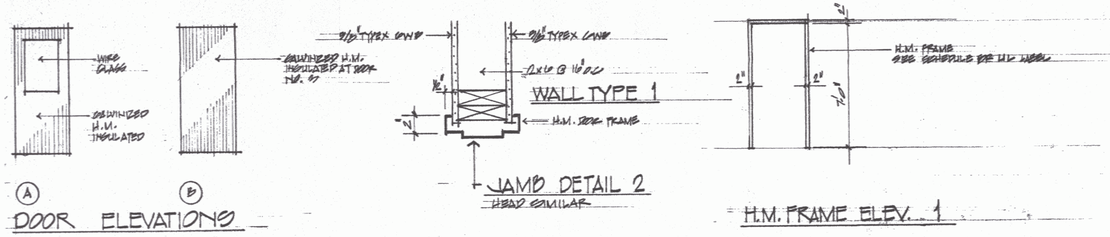
TITLE:
EXTERIOR ELEVATIONS

CHARLES E. METZ
ARCHITECT
THE GRIST MILL
BRADFORD VT 05033

DRAWING:
A2

DOOR AND FRAME SCHEDULE

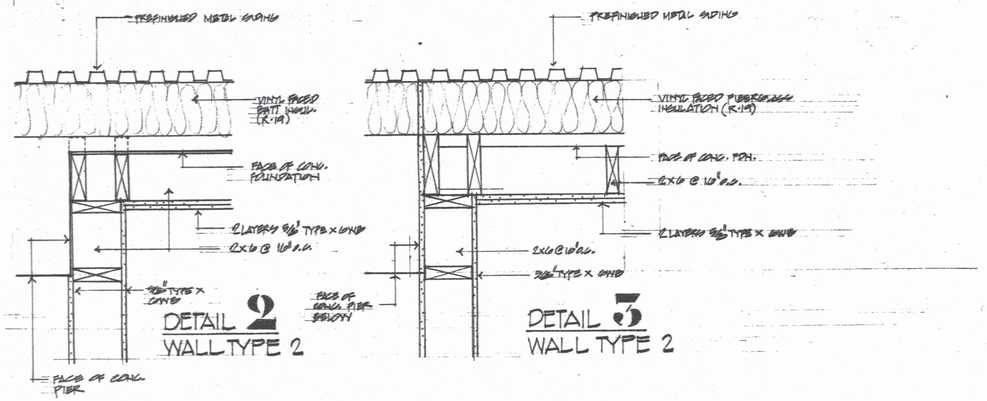
DOOR NO.	DOOR DESCRIPTION ELEV.	MATERIAL	WIDTH	HEIGHT	FRAME ELEV	MAT'L.	THICK'D	DETAILS HEAD	JAMB	SILL	GLASS TYPE	UL LABEL	HDW SET	REMARKS
1	A	GALV. H.M. GLASS	3'-0"	7'-0"	BY BLDG. MFG.	GALV. HM	ALUM.	BY BLDG MFG.	BY BLDG MFG.	–	WIRE	–		DOOR TO BE INSULATED. THRESHOLD TO HAVE THERMAL BREAK. SPEC. BY BUILDING MFGR.
2	A	GALV. H.M. GLASS	3'-0"	7'-0"	SAME	GALV. HM	ALUM.	SAME	SAME	–	WIRE	–		SAME
3	B	GALV. H.M.	3'-0"	7'-0"	SAME	GALV. H.M.	ALUM	SAME	SAME	–	–	–		SAME
4	B	H.M.	3'-0"	7'-0"	1	HM		2	2	–	–	B LABEL		

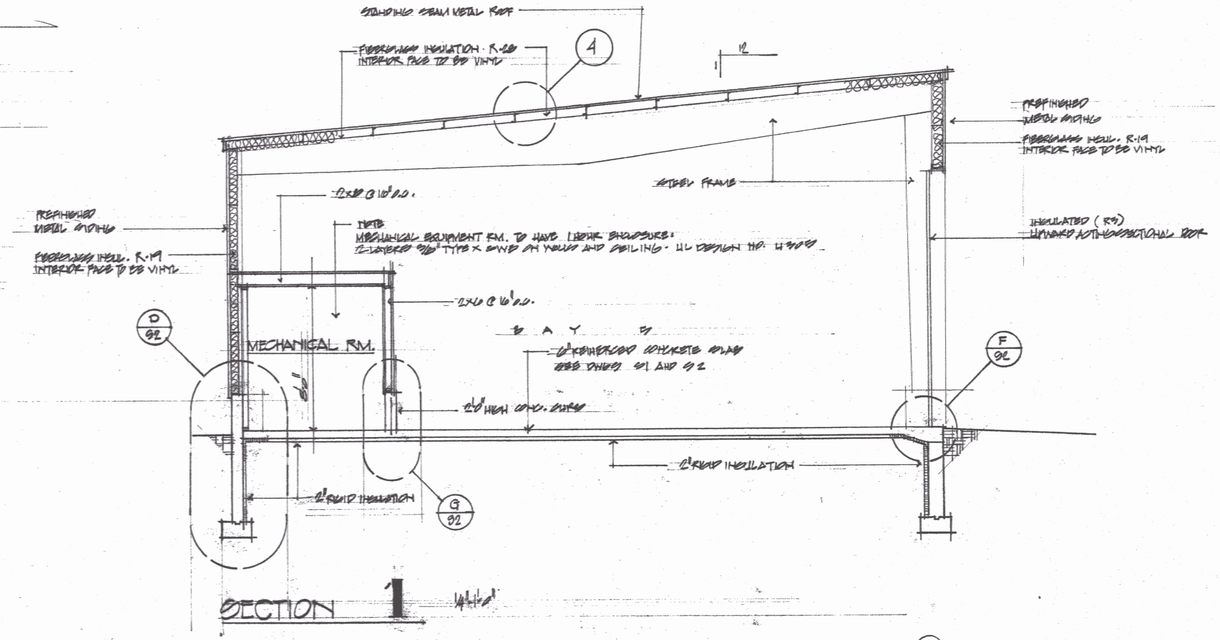


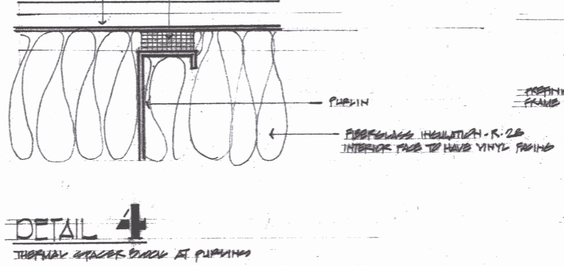
A DOOR ELEVATIONS B

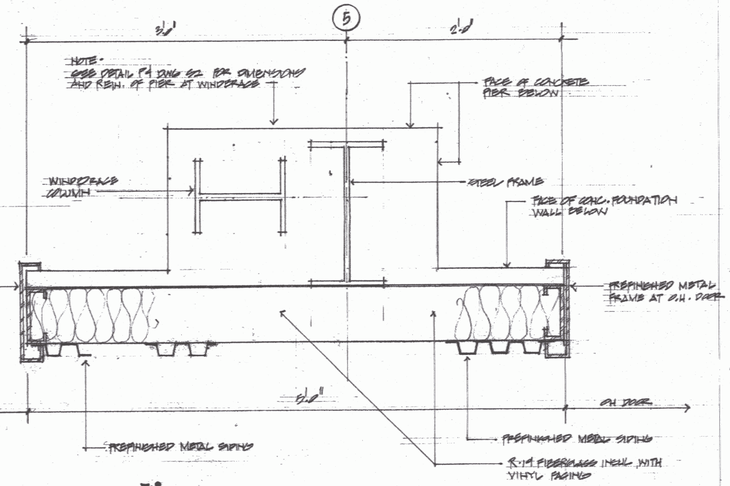
SCHEDULE OF INTERIOR FINISHES

NO.	ROOM	FLOOR	BASE	WALLS NORTH	WALLS SOUTH	WALLS EAST	WALLS WEST	CEILING	REMARKS
	BAY 1	CONCRETE	CONCRETE	OPEN	VINYL FACED INSULATION	VINYL FACED INSULATION	VINYL FACED INSULATION	VINYL FACED INS.	
	BAY 2	CONCRETE	CONCRETE	OPEN	OPEN	VINYL FACED INSULATION	VINYL FACED INSULATION		
	BAY 3	CONCRETE	CONCRETE	OPEN	OPEN	↓	↓	↓	
	BAY 4	CONCRETE	CONCRETE	OPEN	OPEN				
	BAY 5	CONCRETE	CONCRETE	VINYL FACED INSULATION	OPEN	↓	↓	↓	
	MECHANICAL EQUIP.	CONCRETE	CONCRETE	GWB. TYPE X	GWB. TYPE X	GWB. TYPE X	GWB. TYPE X	GWB. TYPE X	5/8" TYPE X - 2 LAYERS









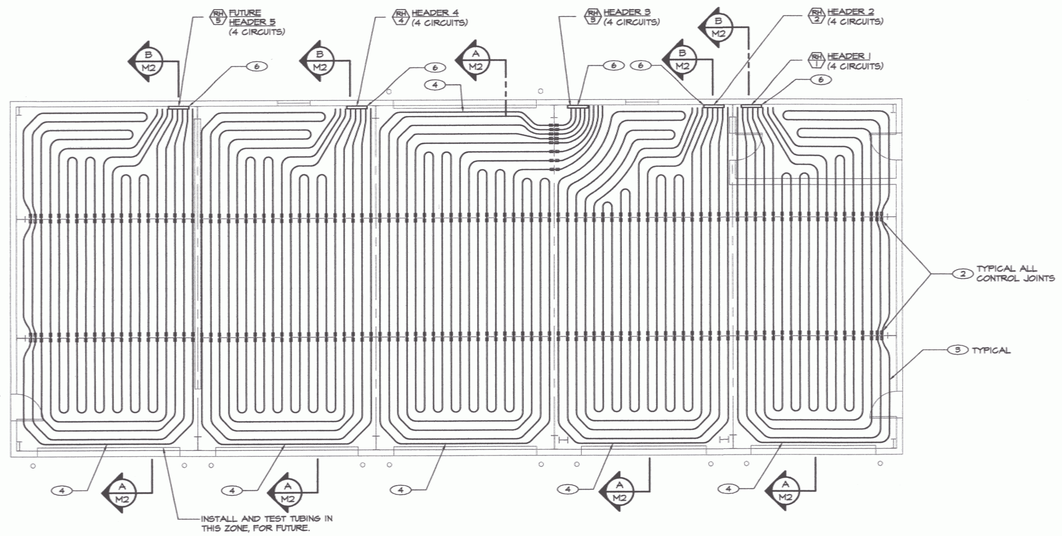
PROJECT:
NEW SNOW REMOVAL EQUIPMENT BLDG
VERMONT AGENCY OF TRANSPORTATION
ROUTE 5 BRADFORD VERMONT

TITLE:
SECTION 1
SCHEDULES AND DETAILS

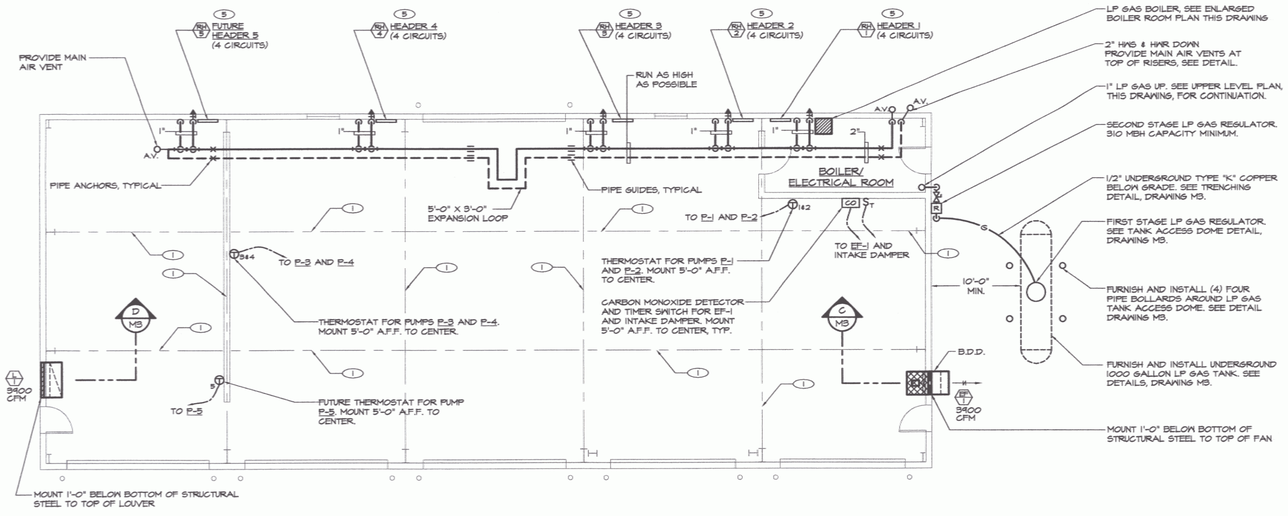
CHARLES E. METZ
ARCHITECT
THE GRIST MILL
BRADFORD VT 05033

DRAWING: A5

012



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



FLOOR PLAN - HEATING PIPING AND VENTILATION
SCALE: 1/8"=1'-0"

RADIANT TUBING NOTES:

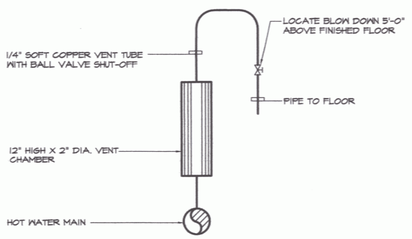
1) THE INSTALLING CONTRACTOR SHALL INSTALL ALL TUBING BELOW REINFORCING, DIRECTLY TO RIGID INSULATION BOARD IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTALLATION MANUAL.

2) NO TUBING JOINTS ARE PERMITTED BELOW SLAB.

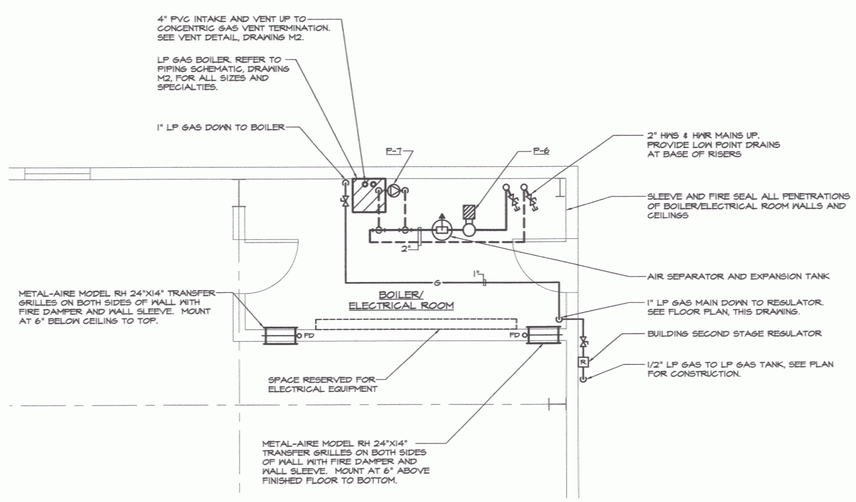
3) LOCATIONS OF STRUCTURAL CONTROL JOINTS AND COLUMNS ARE INDICATED ON THIS DRAWING FOR COORDINATION AND DESIGN PURPOSES. OBTAIN A FINAL APPROVED SET OF STRUCTURAL DRAWINGS TO LOCATE ALL FINAL STRUCTURAL ITEMS PRIOR TO INSTALLING TUBING.

DRAWING NOTES: (APPLY TO THIS DRAWING ONLY)

1. SLAB CONTROL JOINT, TYPICAL.
2. PROVIDE 1'-0" LONG ARMAFLEX INSULATION CENTERED ON ALL CONTROL JOINTS. SEE STRUCTURAL DRAWINGS FOR EXACT LOCATIONS OF CONTROL JOINTS.
3. 1/2" I.D. PEX TUBING, TYPICAL FOR ALL CIRCUITS. TUBING SPACING SHALL BE 1'-0" UNLESS OTHERWISE SPECIFIED.
4. TUBING IN FRONT OF DOORS SHALL BE 6" O.C. SEE SECTION A-M2.
5. MOUNT HEADER MINIMUM 10'-0" ABOVE FINISHED FLOOR TO CENTER.
6. PROVIDE 14 GAUGE GALVANIZED ENCLOSURE AROUND ALL PEX TUBING FROM FLOOR TO HEADERS. SEE DETAIL B-M2.



MAIN AIR VENT DETAIL
NOT TO SCALE



ENLARGED BOILER/ELECTRICAL ROOM FLOOR PLAN
SCALE: 1/4"=1'-0"

STATE OF VERMONT — DANIEL W. DUPRAS — NO. 7335 — MECHANICAL — LICENSED PROFESSIONAL ENGINEER

NO.	ISSUED FOR	DATE
1	CONSTRUCTION	11/17/05

LANE ASSOCIATES CONSULTING ENGINEERS, P.C.

HEATING, VENTILATION, & AIR CONDITIONING, PLUMBING, FIRE PROTECTION, & ELECTRICAL

CHARLES F. LANE, P.E.
DANIEL W. DUPRAS, P.E.

51 KILLINGTON AVENUE, RUTLAND, VERMONT 05701

TELEPHONE: (802)747-3346
FAX/MODEM: (802)747-3356

FLOOR PLANS - HEATING AND VENTILATION

NEW EQUIPMENT BUILDING
CLARENDON AOT
CLARENDON, VT

M
1

APPR: DWD | DRAWN: GJT/DWD | SCALE: AS NOTED | PROJ. NO. 0312-24

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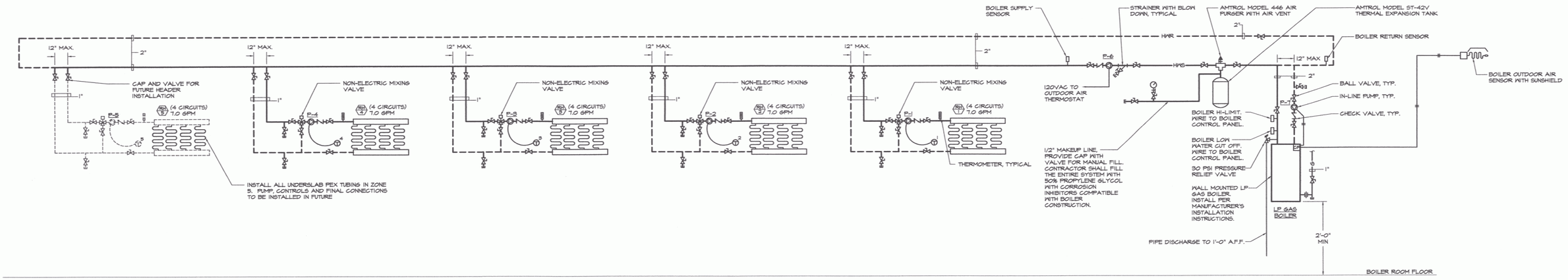
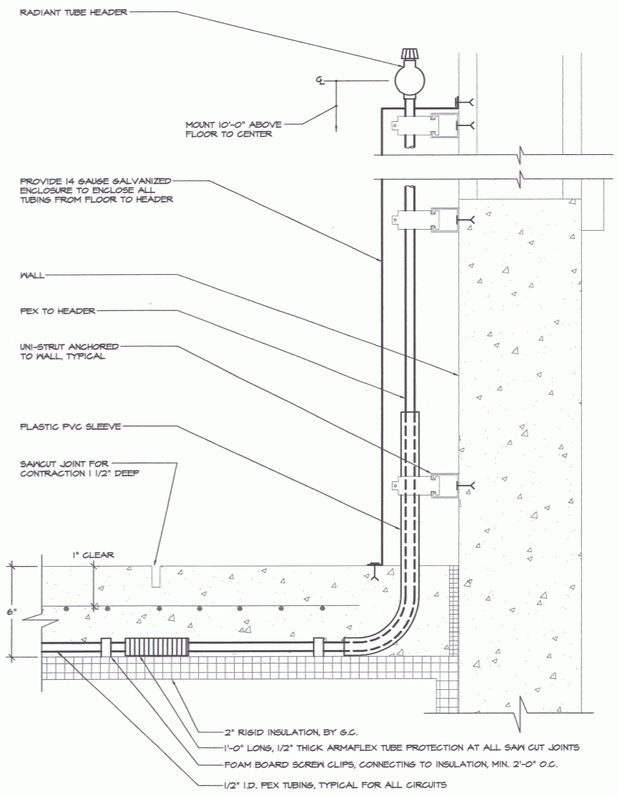


BOILER/SYSTEM PIPING SCHEMATIC

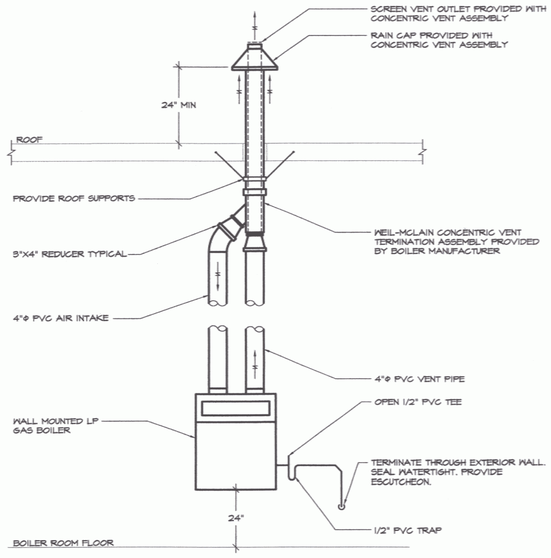
NOT TO SCALE



B/M2 TYPICAL RADIANT TUBING DETAIL

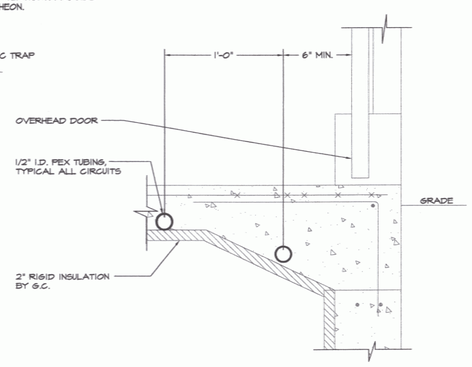
NOT TO SCALE

1. PROVIDE SCHEDULE 40 PVC CONDUIT SLEEVE PROTECTION TO A MINIMUM OF 18" ABOVE FINISHED CONCRETE FLOOR SLAB, TYPICAL FOR RADIANT TUBING THROUGH SLABS.



BOILER GAS VENTING DETAIL

NOT TO SCALE



A/M2 SECTION AT OVERHEAD DOOR

NOT TO SCALE

CIRCULATOR PUMP SCHEDULE

PLAN SYMBOL P-#

No.	MANUFACTURER	SERIES	MODEL	MIN. GPM	HEAD (FT. HD.)	MOTOR				REMARKS
						HP	VOLT	PH	RPM	
P-1	TACO	00	0014	5.0	12	1/8	115	1	3250	HEADER 1 PUMP
P-2	TACO	00	0014	7.0	20	1/8	115	1	3250	HEADER 2 PUMP
P-3	TACO	00	0014	7.0	20	1/8	115	1	3250	HEADER 3 PUMP
P-4	TACO	00	0014	7.0	20	1/8	115	1	3250	HEADER 4 PUMP
P-5	TACO	00	0014	7.0	20	1/8	115	1	3250	FUTURE PUMP
P-6	TACO	-	121	93	12	1/4	115	1	1725	SYSTEM PUMP
P-7	TACO	00	0011	25	5	1/8	115	1	3250	BOILER PUMP, NOTE 1

NOTE:

1) PUMP PROVIDED WITH BOILER AND SHIPPED LOOSE FOR FIELD INSTALLATION.

EXHAUST FAN SCHEDULE

PLAN SYMBOL EF-#

No.	MANUFACTURER	MODEL	CFM	E.S.P.	TYPE	RPM	MODEL			REMARKS
							H.P.	VOLT	PH	
EF-1	GREENHECK	SB-2H24-5	3900	0.30	SIDEWALL	1010	1/2	115	1	NOTE 1

NOTE:

1) PROVIDE WALL SLEEVE, LOW LEAKAGE BACKDRAFT DAMPER, EXPLOSION PROOF MOTOR, SPARK PROOF FAN BLADE, OSHA SIDE MOTOR GUARD AND WEATHERHOOD WITH BIRDSCREEN. WEATHERHOOD TO BE PROVIDED WITH A BAKED ENAMEL FINISH, COLOR SELECTED BY ARCHITECT.

LOUVER SCHEDULE

PLAN SYMBOL L-#

No.	MANUFACTURER	SERIES	MODEL	SIZE	AIR PAT	DAMPER	FINISH	REMARKS
L-1	RUSKIN	ELF	ELF-375DX	48"W x 36"	INTAKE	-	B.E.	NOTE 1, 2 & 3

NOTES:

1) COORDINATE EXACT WIDTH TO MATCH WINDOW ABOVE.
2) PROVIDE GALVANIZED BIRDSCREEN.
3) COLOR OF LOUVER TO BE SELECTED BY ARCHITECT.

STATE OF VERMONT DANIEL W. DUPRAS NO. 4338 MECHANICAL LICENSED PROFESSIONAL ENGINEER

NO.	ISSUED FOR	DATE
1	CONSTRUCTION	11/17/05

LANE ASSOCIATES CONSULTING ENGINEERS, P.C.

HEATING, VENTILATION, & AIR CONDITIONING, PLUMBING, FIRE PROTECTION, & ELECTRICAL

CHARLES F. LANE, P.E.
DANIEL W. DUPRAS, P.E.

51 KILLINGTON AVENUE, RUTLAND, VERMONT 05701

TELEPHONE: (802)747-3346
FAX/MODEM: (802)747-3356

MECHANICAL DETAILS & SCHEDULES

NEW EQUIPMENT BUILDING
CLARENDON AOT
CLARENDON, VT

M
2

APPR:	DWD	DRAWN:	DWD/GJT	SCALE:	AS NOTED	PROJ. NO.	0312-24

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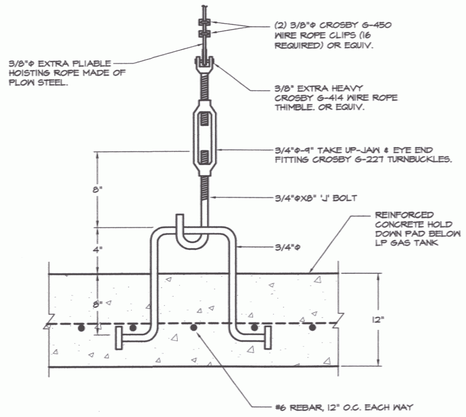
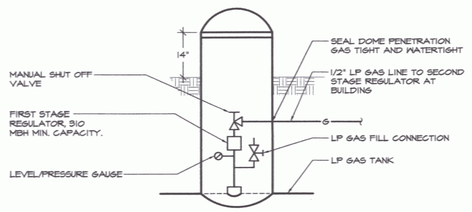
014

MECHANICAL LEGEND AND ABBREVIATIONS

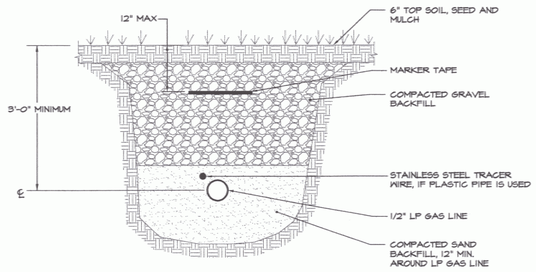
- NEW DUCTWORK
- RETURN DUCT DOWN
- EXHAUST FAN
- M.D. — MOTORIZED DAMPER
- HWS — HOT WATER SUPPLY
- HWR — HOT WATER RETURN
- G — LP GAS PIPING
- IN-LINE PUMP
- PIPE UNION
- PIPE RISER
- PIPE DROP
- PIPE CAP
- BOTTOM PIPE CONNECTION
- TOP PIPE CONNECTION
- BALL VALVE
- CHECK VALVE
- BALANCING VALVE
- DRAIN VALVE
- BACK FLOW PREVENTER
- STRAINER W/ BLOW DOWN VALVE
- 2-WAY VALVE
- 3-WAY VALVE
- AIR VENT
- PRESSURE GAUGE
- TS — TEMPERATURE SENSOR
- PRESSURE RELIEF VALVE (PRV)
- TEMPERATURE GAUGE
- R — LP GAS REGULATOR
- T — THERMOSTAT, SUBSCRIPTS: E = 120V ELECTRIC, # = ZONE
- AIR FLOW INDICATOR
- A.F.F. — ABOVE FINISHED FLOOR
- B.D.D. — BACK DRAFT DAMPER
- M.C. — MECHANICAL CONTRACTOR
- P.C. — PLUMBING CONTRACTOR
- E.C. — ELECTRICAL CONTRACTOR
- G.C. — GENERAL CONTRACTOR
- SECTION NUMBER / DWG. NUMBER
- EXHAUST FAN
- LOUVER
- RADIANT HEATING SYSTEM HEADER
- DRAWING NOTE TAG
- P-# — PUMP TAG
- EQUIPMENT TAG



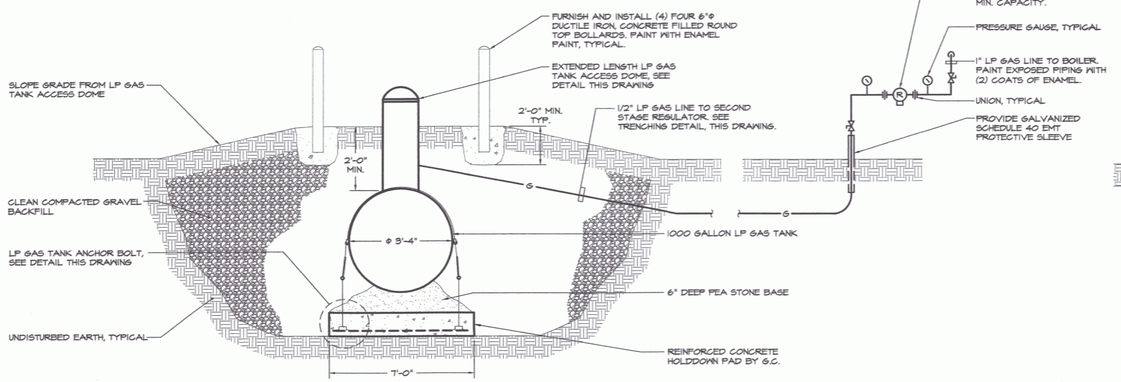
TANK ANCHOR BOLT DETAIL
NOT TO SCALE

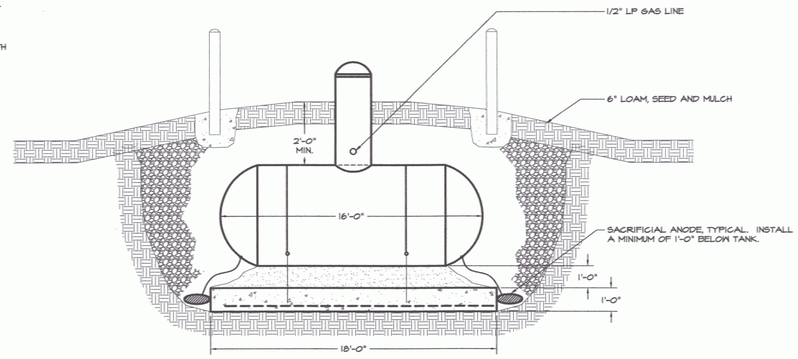


LP GAS TANK ACCESS DOME DETAIL
NOT TO SCALE



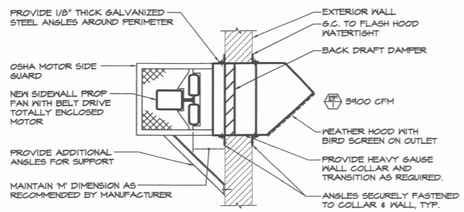
LP GAS SUPPLY PIPE TRENCHING DETAIL
NOT TO SCALE



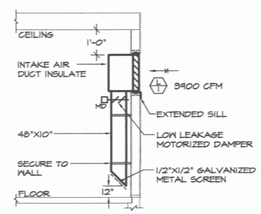


UNDERGROUND LP GAS TANK DETAILS
NOT TO SCALE

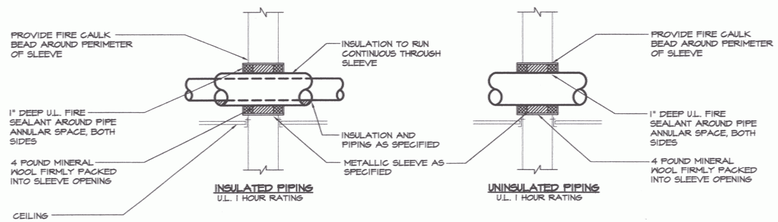
NOTE:
TANK REGULATORS, PIPING AND ACCESSORIES, INCLUDING FIRST AND SECOND STAGE REGULATORS, TO BE FURNISHED AND INSTALLED BY THIS CONTRACTOR. COORDINATE WITH G.C. FOR REQUIRED FOR REQUIRED EXCAVATION AND BACKFILL.



C/M3 SIDEWALL EXHAUST FAN DETAIL
NOT TO SCALE



D/M3 INTAKE LOUVER DETAIL
NOT TO SCALE



WALL PIPE PENETRATION DETAILS
NOT TO SCALE

NOTE:
1) FOLLOW FIRE SEALANT MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS IN CONJUNCTION WITH REQUIREMENTS AS DETAILED.

2) ALL WALL PIPE PENETRATIONS SHALL BE INSTALLED PER THIS DETAIL.

3) DETAIL BASED ON 3TI "SPEC-SEAL" FIRE STOPPING PRODUCTS, ALTERNATE MANUFACTURER'S INSTALLATION REQUIREMENTS MAY VARY.

4) PENETRATIONS OF BOILER ROOM CEILING SHALL BE INSTALLED SIMILAR TO THIS DETAIL.

STATE OF VERMONT — DANIEL W. DUPRAS — NO. 12385 — MECHANICAL — LICENSED PROFESSIONAL ENGINEER

NO.	ISSUED FOR	DATE
1	CONSTRUCTION	11/17/05

LANE ASSOCIATES CONSULTING ENGINEERS, P.C.

HEATING, VENTILATION, & AIR CONDITIONING, PLUMBING, FIRE PROTECTION, & ELECTRICAL

CHARLES F. LANE, P.E.
DANIEL W. DUPRAS, P.E.

51 KILLINGTON AVENUE,
RUTLAND, VERMONT 05701
TELEPHONE: (802)747-3346
FAX/MODEM: (802)747-3356

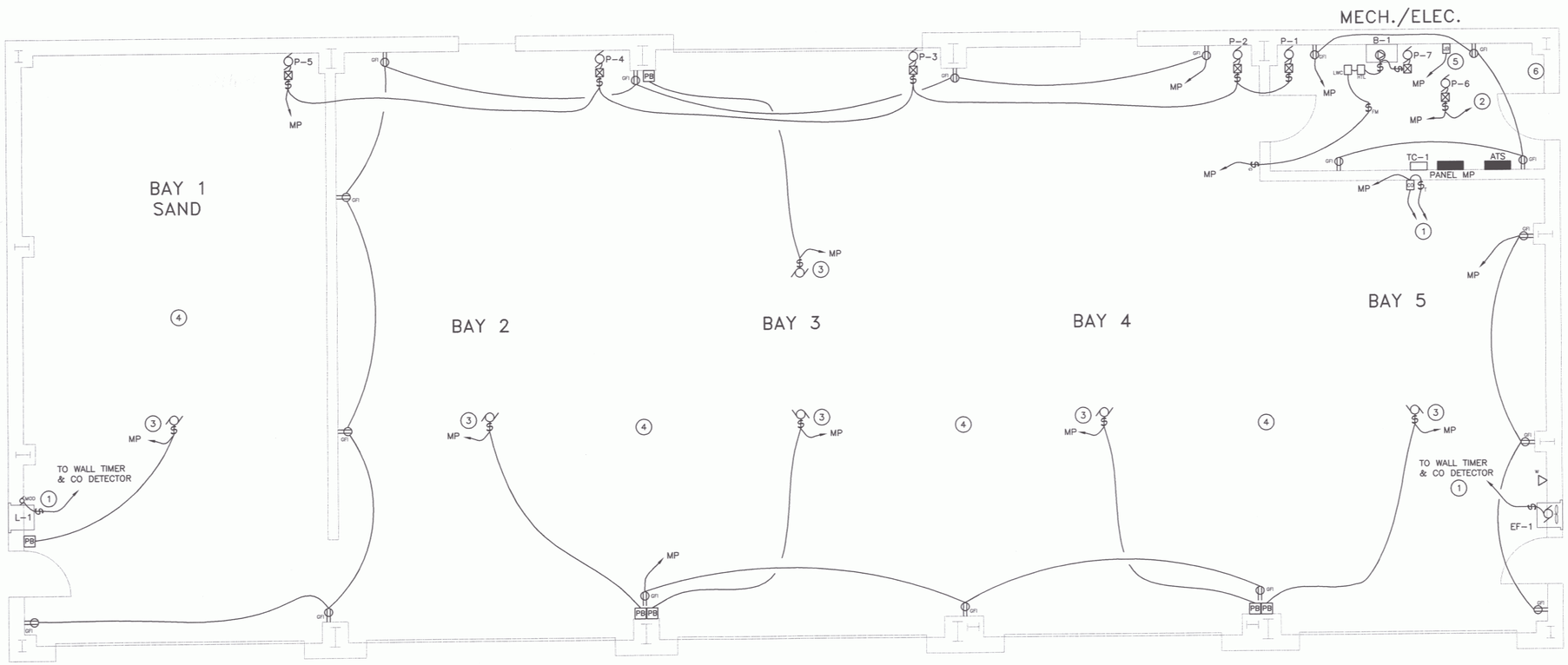
MECHANICAL DETAILS & LEGEND

NEW EQUIPMENT BUILDING
CLARENDON AOT
CLARENDON, VT

M 3

APPR: DWD	DRAWN: DWD/GJT	SCALE: AS NOTED	PROJ. NO. 0312-24

X:\031224\Drawings\Mech\031224M03.dwg, M3, 11/17/2005 8:31:14 AM, © LANE ASSOCIATES CONSULTING ENGINEERS PC, 2005



ELECTRICAL POWER PLAN

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

HORIZONTAL SCALE IN FEET

4 2 0 4 8 12 14

KEYED NOTES:

1. TO EXHAUST FAN & INTAKE LOUVER. CO SENSOR & TIMER SWITCH PROVIDED BY MC, WIRED BY EC.
2. 120V LINE TO OUTDOOR AIR SENSOR, COORD. WITH MC.
3. OVERHEAD DOOR OPENER. PROVIDE WIRING TO REMOTE DOOR OPENING STATION. COORDINATE LOCATION & WIRING REQUIREMENTS WITH OWNER & EQUIPMENT SUPPLIER.
4. ALL WIRING IN THIS AREA SHALL CONFORM TO NEC ARTICLE #513. ALL RECEPTACLES SHALL BE MOUNTED AT 20" AFF.
5. PROVIDE 120V CIRCUIT & JB FOR USE BY MC FOR CONTROL WIRING. COORD. EXACT LOCATION WITH MC.
6. TELEPHONE SERVICE TERMINATION AREA.

ELECTRICAL LEGEND

- FLUORESCENT FIXTURE
- LIGHT FIXTURE
- SWITCH – SINGLE POLE
- S_{GB} SWITCH – SINGLE POLE WITH GAS BURNER PLATE
- SWITCH – 3-WAY
- SWITCH – 4-WAY
- S_F SWITCH – FAN SPEED CONTROL, DAYTON 4C929
- S_{FM} FIREMATIC SWITCH, PROVIDED AND INSTALLED BY EC
- PB PUSH-BUTTON STATION, PROVIDED BY ES, WIRED BY EC.
- MOTOR STARTER PROV. BY MC, INSTALLED BY EC
- SAFETY DISCONNECT PROV. AND INSTALLED BY EC.
- PANEL
- BRANCH CIRCUIT
- JB JUNCTION BOX
- DUPLEX RECEPTACLE
- QUAD RECEPTACLE
- DUPLEX RECEPTACLE – COUNTER HEIGHT
- $_{GFI}$ DUPLEX RECEPTACLE–GFCI PROTECTED
- WP WEATHERPROOF, NEMA 3R RATED
- AFF ABOVE FINISH FLOOR
- EC ELECTRICAL CONTRACTOR (DIVISION 16)
- MC MECHANICAL CONTRACTOR (DIVISION 15)
- GC GENERAL CONTRACTOR
- ES EQUIPMENT SUPPLIER
- TYP. TYPICAL OF ALL
- NEC NATIONAL ELECTRIC CODE
- $_{HTL}$ HIGH TEMP. LIMIT SWITCH, PROV. BY MC, WIRED BY EC
- $_{LWC}$ LOW WATER CUTOFF, PROV. BY MC, WIRED BY EC
- MOTOR
- $_{MOD}$ MOTOR–OPERATED DAMPER
- PS PRESSURE SWITCH
- PHONE LOCATION (4" SQUARE BOX WITH 3/4" CONDUIT TO TELEPHONE TERMINATION AREA. PROVIDE EXTENSION RINGS (MUD RINGS) AS REQUIRED.
- PC PHOTOCELL
- TC-1 TIMECLOCK, 2-CIRCUIT, DIGITAL, ASTRONOMICAL, PROGRAMMABLE

PANEL: MP
AMPS: 150 MAIN CIRCUIT BREAKER
AMPS FAULT CURRENT WITHSTAND: 10K
NOTES: SERVICE RATED TOTAL LOAD: 40.5 KW

LOCATION: BREAK ROOM
120/240 VOLTS 1 PHASE 3 WIRE
FLUSH MOUNT

NO	BREAKER AMPS	KW LOAD	DESCRIPTION	NO	BREAKER AMPS	KW LOAD	DESCRIPTION
1	20	0.6	RECEPTACLES GFI	2	20	0.7	EXHAUST FAN
3	20	0.6	RECEPTACLES GFI	4	20*	1.5	GARAGE DOOR
5	20	1.3	RECEPTACLES GFI	6	20	1.5	GARAGE DOOR
7	20	0.5	HEATING CONTROL POWER	8	20	1.5	GARAGE DOOR
9	20	1.5	BOILER B-1/PUMP P-7	10	20	1.5	GARAGE DOOR
11	20	1.0	CIRC. PUMPS P-1 THRU P-5	12	20	1.5	GARAGE DOOR
13	20	0.7	CIRC. PUMPS P6	14	20	1.5	GARAGE DOOR
15	20		SPARE	16	20	1.7	BAY LIGHTING
17	20		SPARE	18	20	1.0	OUTDOOR BUILDING LIGHTING
19			SPACE	20	20	0.6	MECH. ROOM RECEPTACLES
21				22	20	0.6	AIRPORT LIGHTS
23				24	20	0.2	GENERATOR POWER
25				26	20	0.2	GENERATOR BATTERY CHARGER
27				28	20		SPARE
29				30	20		SPARE

* DENOTES CONNECTION THRU GENERATOR TRANSFER SWITCH

PROGRESS PRINTS
NOT FOR CONSTRUCTION 12/21/05

STATE OF VERMONT
Department of Buildings
and General Services
Agency of Administration
Montpelier, Vermont

Pearson & Associates
MECHANICAL & ELECTRICAL ENGINEERS
P.O. BOX 610 STOWE, VERMONT 05672
TEL. (802) 253-9607 FAX. (802) 253-6220
EMAIL: pearson@stowevt.net

AGENCY OF TRANSPORTATION
NEW SNOW REMOVAL EQUIPMENT
BUILDING AT THE CLARENDON
AOT GARAGE
CLARENDON VERMONT

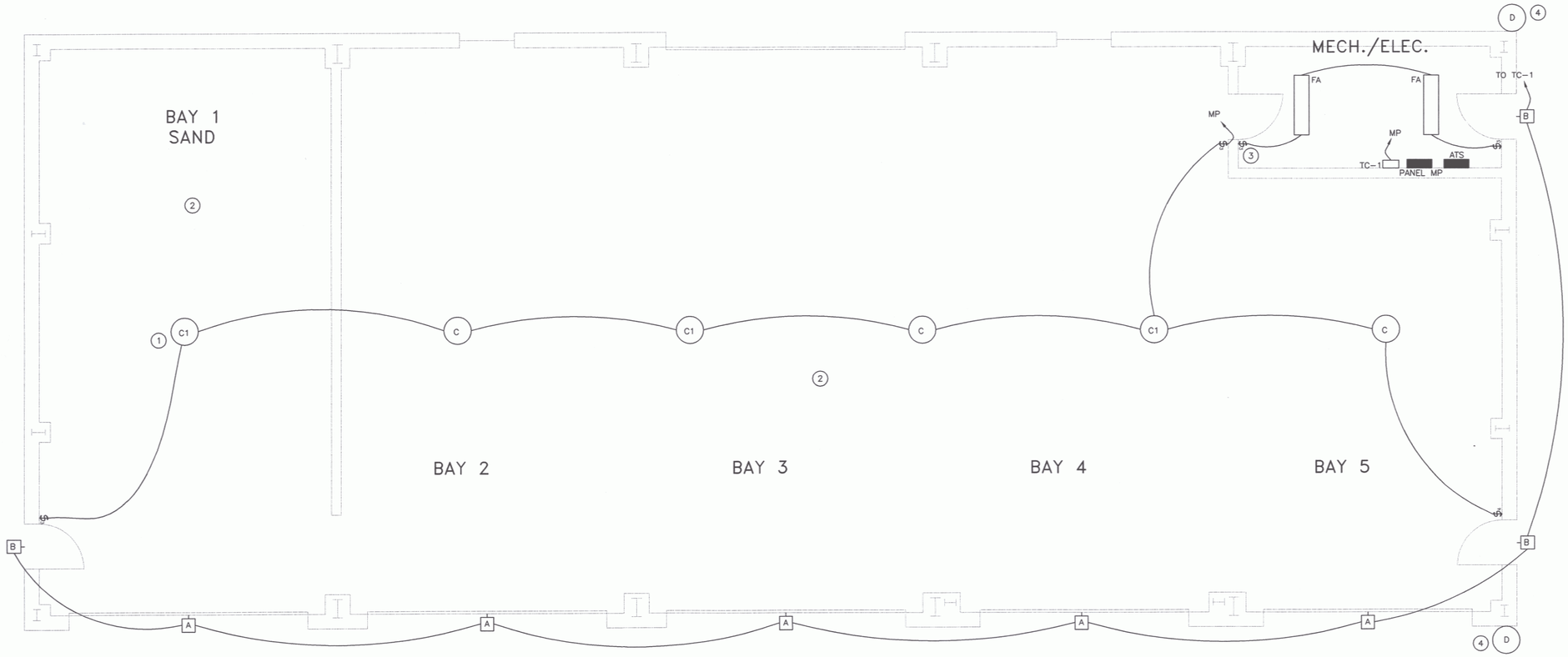
REVISIONS

SCALE: AS SHOWN | DATE: SEPT 2005 | DRAWN BY: ASG | APPR. BY: FEEP

AGENCY OF TRANSPORTATION
SNOW REMOVAL EQUIPMENT BUILDING
ELECTRICAL PLAN

E-1

PROGRESS PRINTS
NOT FOR CONSTRUCTION 12/21/05



KEYED NOTES:

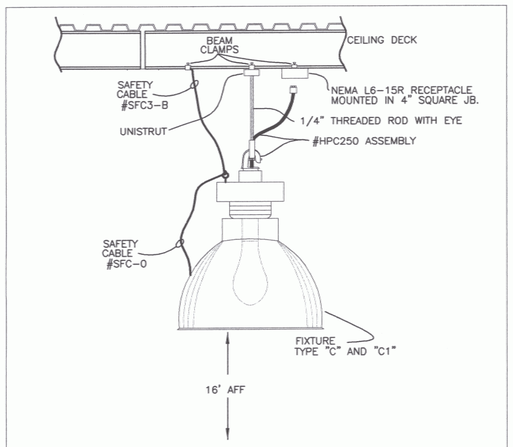
1. MOUNT THIS FIXTURE TIGHT TO STRUCTURE.
2. ALL WIRING IN THIS AREA SHALL CONFORM TO NEC ARTICLE #513. ALL RECEPTACLES SHALL BE MOUNTED AT 20' AFF.
3. CONNECT LIGHTING TO RECEPTACLE CIRCUIT IN THIS ROOM.
4. BUILDING MARKER LIGHTS, WIRE TO UNSWITCHED DEDICATED CIRCUIT.

ELECTRICAL LIGHTING PLAN

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

HORIZONTAL SCALE IN FEET

4 2 0 4 8 12 14



TYPE "C" & "C1" FIXTURE MOUNTING DETAIL

NO SCALE

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER & MODEL	MOUNTING	LAMPS	REMARKS
A	RUUD MACW410-1P	SURFACE WALL MOUNT	(1)-100W MH	WITH PHOTOCELL MOUNT AT 15' AFG
B	RUUD E4405-1P-J-V	SURFACE	(1)-50W MH	WITH PHOTOCELL MOUNT OVER DOORS
C	GE V2G-25P0A-4EA5 SFC-0 SFC3-B HCP250	PENDANT	(1)-250W MH COATED PULSE START	MOUNT AT 16' AFF PULSE START
C1	GE V2G-25P0A-4EA5Q SFC-0 SFC3-B HCP250	PENDANT	(1)-250W MH COATED PULSE START	SAME AS ABOVE WITH QUARTZ RE-STRIKE
D	BUILDING MARKER LIGHT TO BE DETERMINED	SURFACE		
FA	METALUX DIM-232-120-EB81	CHAIN HUNG	(2)-F032T8 3500 K	WITH WIRE GUARDS
EF-1	EXHAUST FAN - PROVIDED & INSTALLED BY MC			WIRING BY EC

STATE OF VERMONT
Department of Buildings and General Services
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Montpelier, Vermont

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AGENCY OF TRANSPORTATION
NEW SNOW REMOVAL EQUIPMENT BUILDING AT THE CLARENDON AOT GARAGE
CLARENDON VERMONT

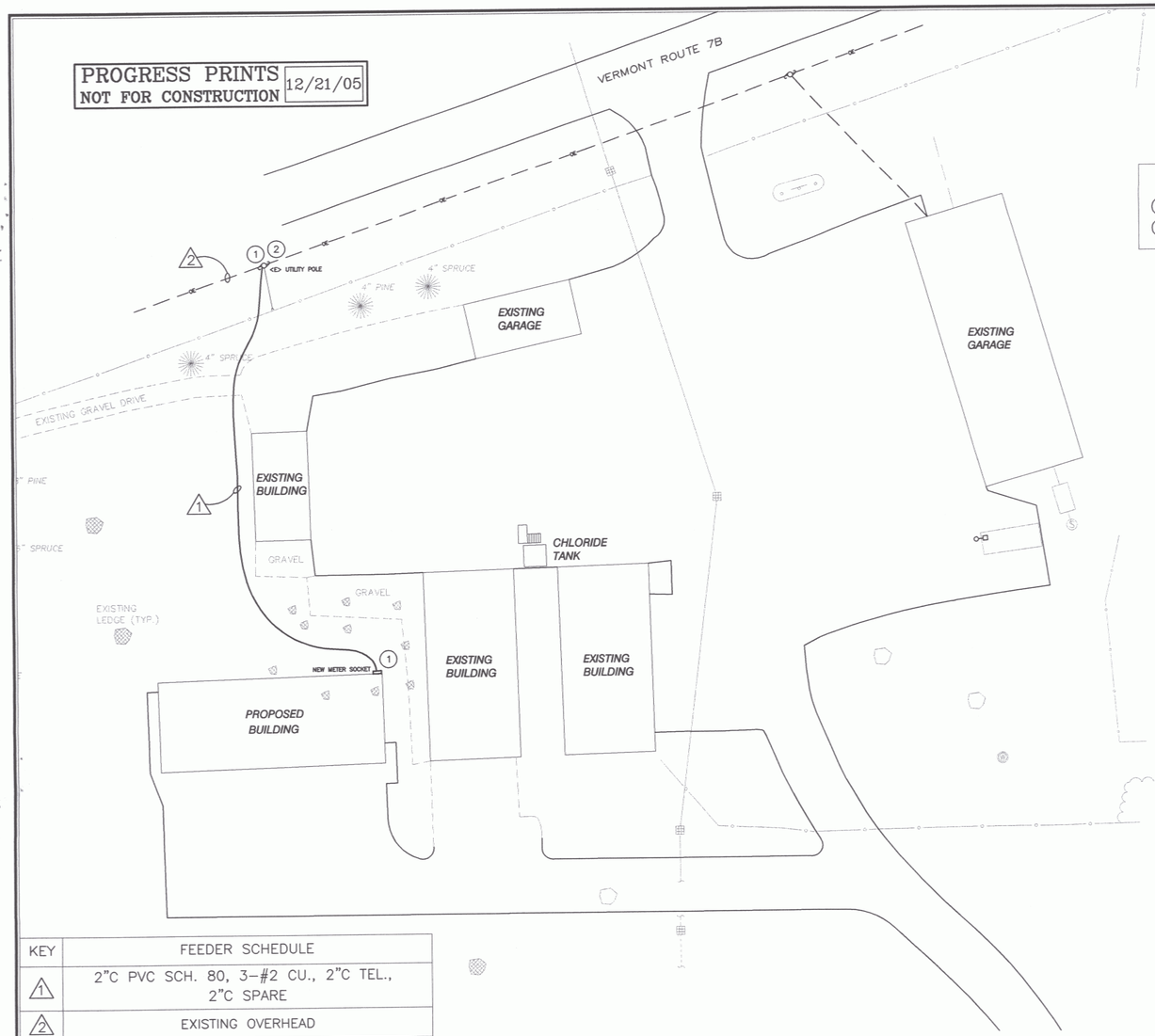
REVISIONS

SCALE: AS SHOWN
DATE: SEPT 2005
DRAWN BY: ASG
APPR. BY: EEP

AGENCY OF TRANSPORTATION SNOW REMOVAL EQUIPMENT BUILDING
LIGHTING PLAN

E-2

PROGRESS PRINTS
NOT FOR CONSTRUCTION 12/21/05



KEY	FEEDER SCHEDULE
1	2"C PVC SCH. 80, 3–#2 CU., 2"C TEL., 2"C SPARE
2	EXISTING OVERHEAD

ELECTRICAL SITE PLAN

SCALE: 1" = 30'–0"

HORIZONTAL SCALE IN FEET

30 15 0 30 60 90 120

KEYED NOTES:

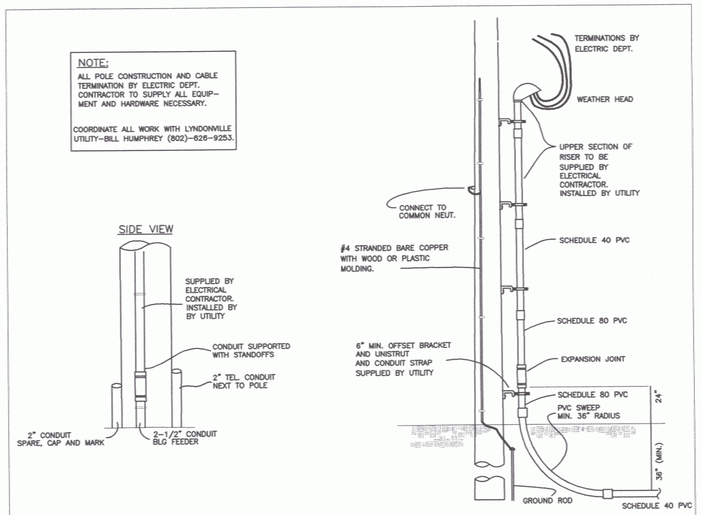
1. COORD. ALL WORK WITH CVPS & VERIZON.
2. REFER TO SECONDARY RISER DETAIL.

LEGEND

- APPROXIMATE PROPERTY LINE
- GRAVITY SEWER LINE
- FORCE MAIN
- WATER LINE
- GAS LINE
- STORM DRAINAGE LINE
- SEWER MANHOLE
- STORM MANHOLE
- HYDRANT
- SHUT–OFF
- POWER POLE
- CATCH BASIN
- LIGHT POLE
- SIGN
- DECIDUOUS TREE
- CONIFEROUS TREE
- EDGE OF BRUSH/WOODS
- FENCE
- NEW UNDERGROUND ELECTRIC

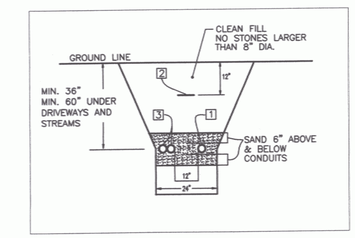
NOTE:
ALL POLE CONSTRUCTION AND CABLE TERMINATION BY ELECTRIC DEPT. CONTRACTOR TO SUPPLY ALL EQUIP–MENT AND HARDWARE NECESSARY.

COORDINATE ALL WORK WITH LYNDONVILLE UTILITY–BILL HUMPHREY (802)–626–9253.



SECONDARY RISER POLE DETAIL

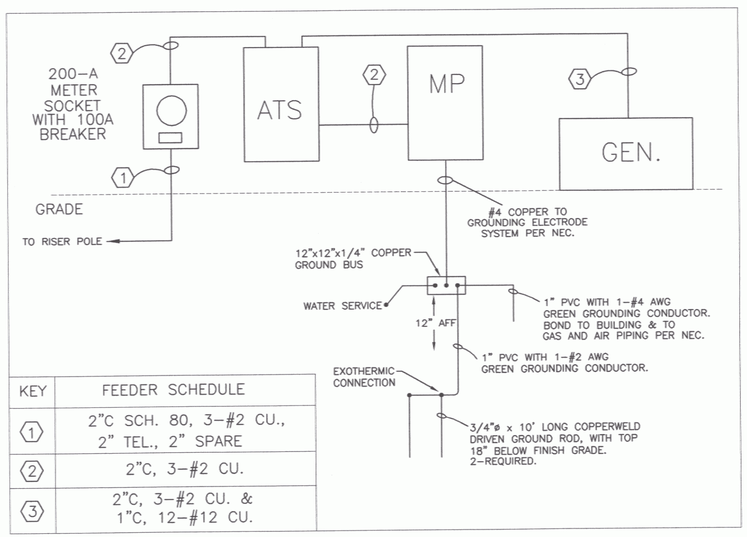
NO SCALE



TRENCH DETAIL

NO SCALE

KEY	KEYED NOTES DESCRIPTION
1	SERVICE CABLE DUCT SHALL BE PVC SCHEDULE 80.
2	WARNING TAPE SHALL BE ELECTRIC LEGEND TYPE. ALLEN CAT.#ANT–1006–RE OR EQUAL. (WARNING TAPE SHALL BE PLACED 12" BELOW SURFACE.)
3	TEL. DUCT SHALL BE PVC SCHEDULE 40. UNDER ROADS & DRIVEWAYS TO BE SCHEDULE 80. MAINTAIN 12" SEPARATION FROM ELECTRIC. PROVIDE SPARE 2" CONDUIT.



KEY	FEEDER SCHEDULE
1	2"C SCH. 80, 3–#2 CU., 2" TEL., 2" SPARE
2	2"C, 3–#2 CU.
3	2"C, 3–#2 CU. & 1"C, 12–#12 CU.

POWER ONE–LINE DIAGRAM

NO SCALE

STATE OF VERMONT
Department of Buildings and General Services
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REVISIONS

SCALE: AS SHOWN | DATE: SEPT 2005 | DRAWN BY: ASG | APPR. BY: EEP

AGENCY OF TRANSPORTATION SNOW REMOVAL EQUIPMENT BUILDING
SITE ELECTRICAL PLAN

E–3

3 OF 3

018