

State of Vermont  
Department of Buildings & General Services  
WILMINGTON STATE HIGHWAY GARAGE  
80' x 84' SALT SHED  
Wilmington, Vermont

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

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



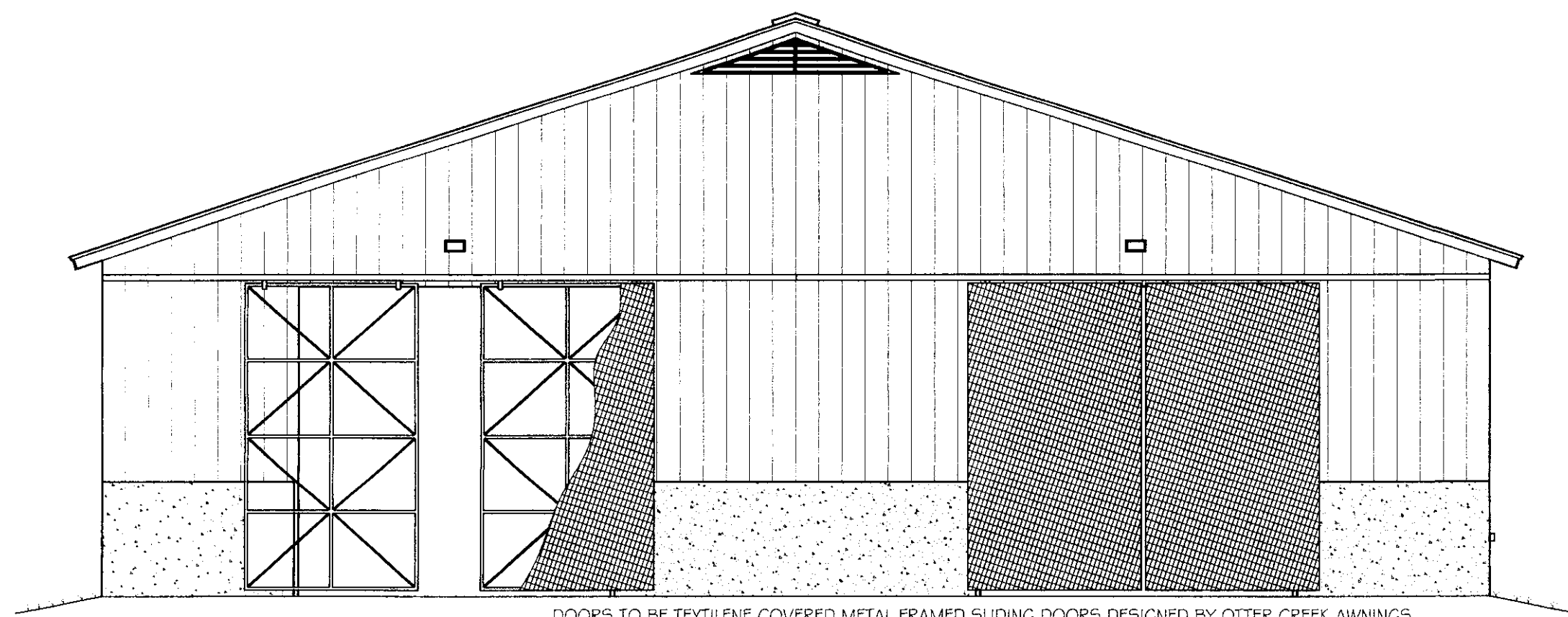
James Douglas  
Governor

May 2005

INDEX OF SHEETS

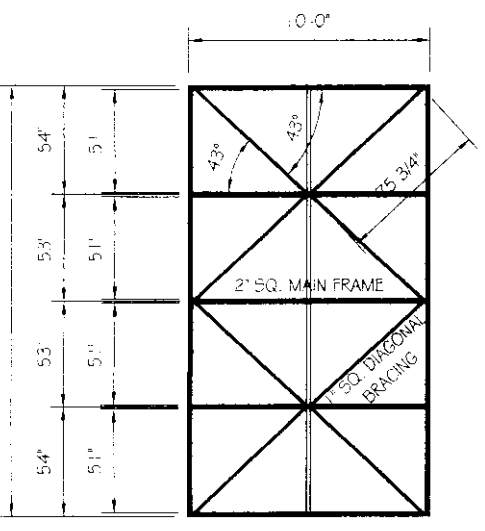
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- 8 C2.1 EROSION CONTROL NOTES AND DETAILS

SET # 1  
DO NOT COPY

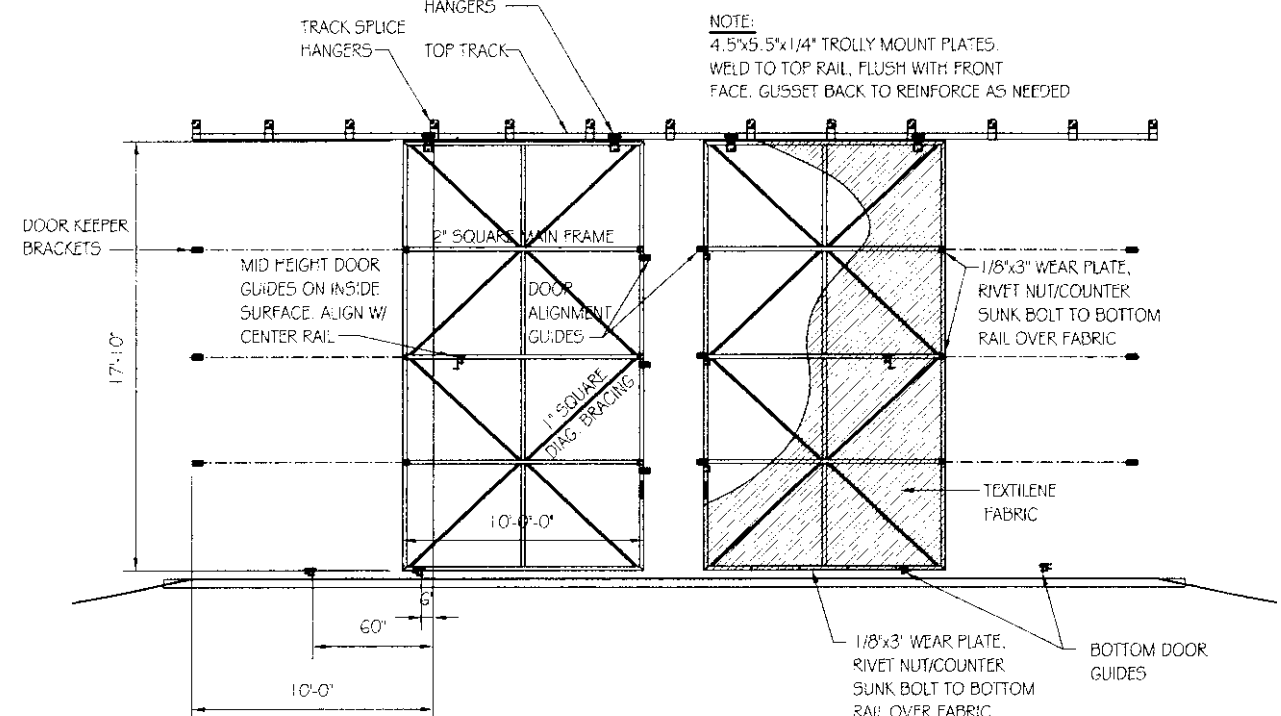


DOOR DETAIL  
 SCALE: 1/8" = 1'-0"

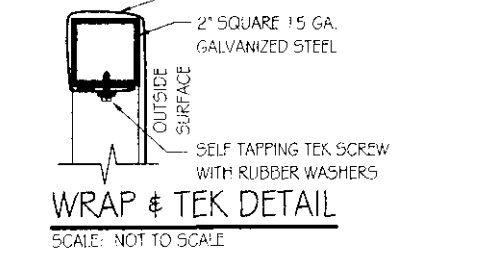
DOORS TO BE TEXTILE COVERED METAL FRAMED SLIDING DOORS DESIGNED BY OTTER CREEK AWNINGS.  
 TO BE ASSEMBLED AND INSTALLED BY CONTRACTOR.  
 SUBMITTAL OF SHOP DRAWING REQUIRED.



DOOR FRAMING DETAIL  
 SCALE: 1/8" = 1'-0"

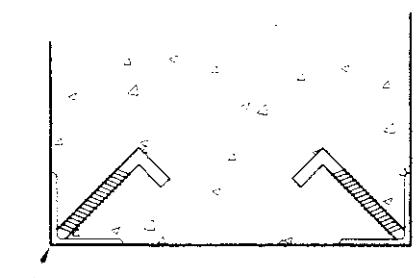


DOOR DETAIL  
 SCALE: 1/8" = 1'-0"



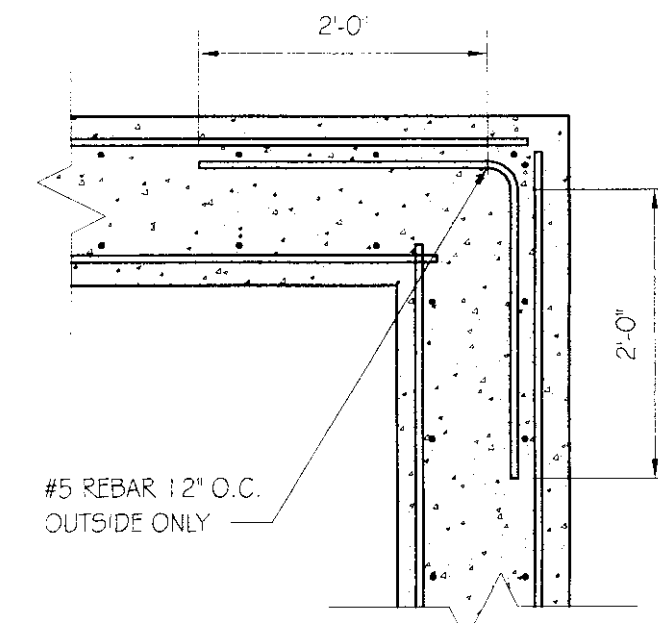
WRAP & TEK DETAIL  
 SCALE: NET TO SCALE

GENERAL INFORMATION:  
 FRAME: 2" SQUARE GALV. STEEL, GATORSHIELD  
 FULLY WELDED  
 FABRIC: TEXTILE VINYL  
 FABRIC/FRAME ATTACHMENT: WRAP AND TEK  
 HANGING HARDWARE: OVERHEAD TRACK AND HANGERS  
 DOOR TRACK AND GUIDE DETAILS BY DOOR MANUFACTURER.



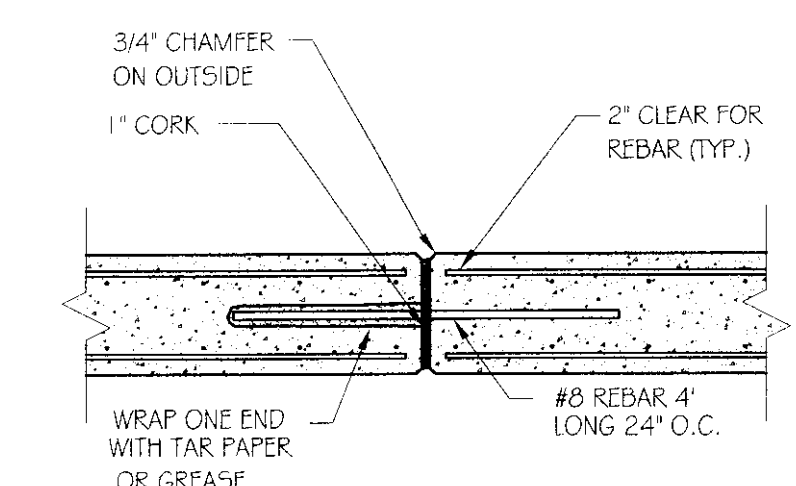
3"x3"x1/4" ANGLE IRON (A-36 STEEL)  
 WITH 1/2" DIA. LONG ANCHOR BOLTS  
 WELDED 18" O.C. FULL DOORWAY HEIGHT.  
 1/2" DIA. GALV. AFTER FABRICATION.  
 PRIOR TO INSTALLATION.

CORNER DETAIL  
 AT OPENINGS  
 SCALE: 1/2" = 1'-0"



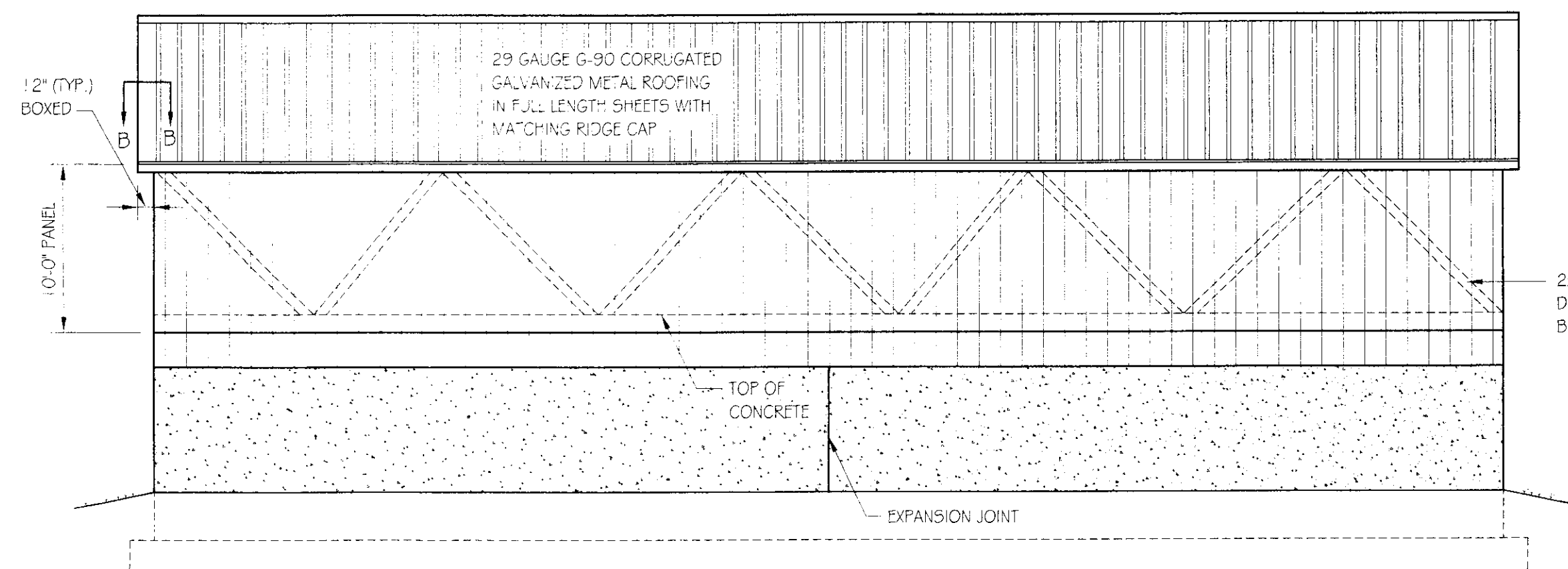
#5 REBAR 12" O.C.  
 OUTSIDE ONLY

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



3/4" CHAMFER  
 ON OUTSIDE  
 1" CORK  
 2" CLEAR FOR  
 REBAR (TYP.)  
 WRAP ONE END  
 WITH TAR PAPER  
 OR GREASE  
 #8 REBAR 4"  
 LONG 24" O.C.

EXPANSION JOINT DETAIL  
 SCALE: 1/2" = 1'-0"



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

GENERAL NOTES

**TRUSS NOTES:**  
 TRUSS MANUFACTURER TO PROVIDE DEPT. OF STATE BUILDINGS ENGINEER A SET OF ENGINEERED & STAMPED DRAWINGS FOR APPROVAL PRIOR TO TRUSS MANUFACTURE (ENGINEER MUST BE LICENSED IN VERMONT).  
 TRUSS MANUFACTURER TO PROVIDE THE CONTRACTOR WITH ALL NECESSARY INSTRUCTIONS FOR PROPER TRUSS INSTALLATION, ANCHORAGE, BRACING.  
 TRUSS DESIGN LOADS IN ACCORDANCE WITH THE 1987 B.O.C.A. FOR VERMONT.  
**MINIMUM LOADS:**  
 LIVE - PER 1987 B.O.C.A. FOR VERMONT (40 PSF MIN.)  
 DEAD - AS CALCULATED FROM TRUSSES & ROOF MATERIAL  
 5 PSF ON BOTTOM CHORD  
 WIND - 25 PSF  
 DIAGONAL WIND BRACING PER TRUSS MANUFACTURE.

**LUMBER NOTES:**  
 FRAMING MEMBERS TO BE KILN DRIED CONSTRUCTION GRADE SPRUCE 545 19% MOISTURE CONTENT.  
 PLATES & NAILERS IN CONTACT WITH CONCRETE TO BE CCA 0.40 TREATED ALL FASTENERS TO BE GALVANIZED AND SHALL BE APPROPRIATELY SIZED.  
 TRIM AND SOFFIT MATERIAL TO BE NATIVE ROUGH SAWN WHITE PINE, SPRUCE, EASTERN FIR OR RED PINE.

**SMARTSIDE PANEL NOTES:**  
 84 GALVANIZED NAILS FOR 19/32" PANELS PENETRATING STUDS 1 1/2" NAIL SPACING: 6" MAX. PERIMETER, 12" MAX FIELD, 3/8" MIN. FROM EDGES. NAILS TO BE SET FLUSH. DO NOT COUNTERSINK NAILS INTO PANEL. MINIMUM 3/8" GAP REQUIRED AT HORIZONTAL JOINTS OF PANEL SIDING. SMARTSIDE PANEL SIDING MUST NOT CONTACT CONCRETE, 1/2" CLEARANCE MIN. SMARTSIDE PANEL SIDING MUST NOT CONTACT GROUND, 6" CLEARANCE MIN. PAINT ALL PANEL SURFACES INCLUDING BOTTOM EDGES. ADDITIONAL SMARTSIDE PANEL INSTALLATION INFO CAN BE FOUND AT WWW.SMARTSIDEONLINE.COM OR CALL 800-648-6893

**FINISH NOTES:**  
 ROOFING COLOR: IVY GREEN (BY AMERI-DRAIN)  
 APPLY PAINT AS SOON AS POSSIBLE.  
 PAINT TO BE OLYMPIC ACRYLIC LATEX SATIN FINISH.  
 COLOR TO BE DETERMINED BY ENGINEER.

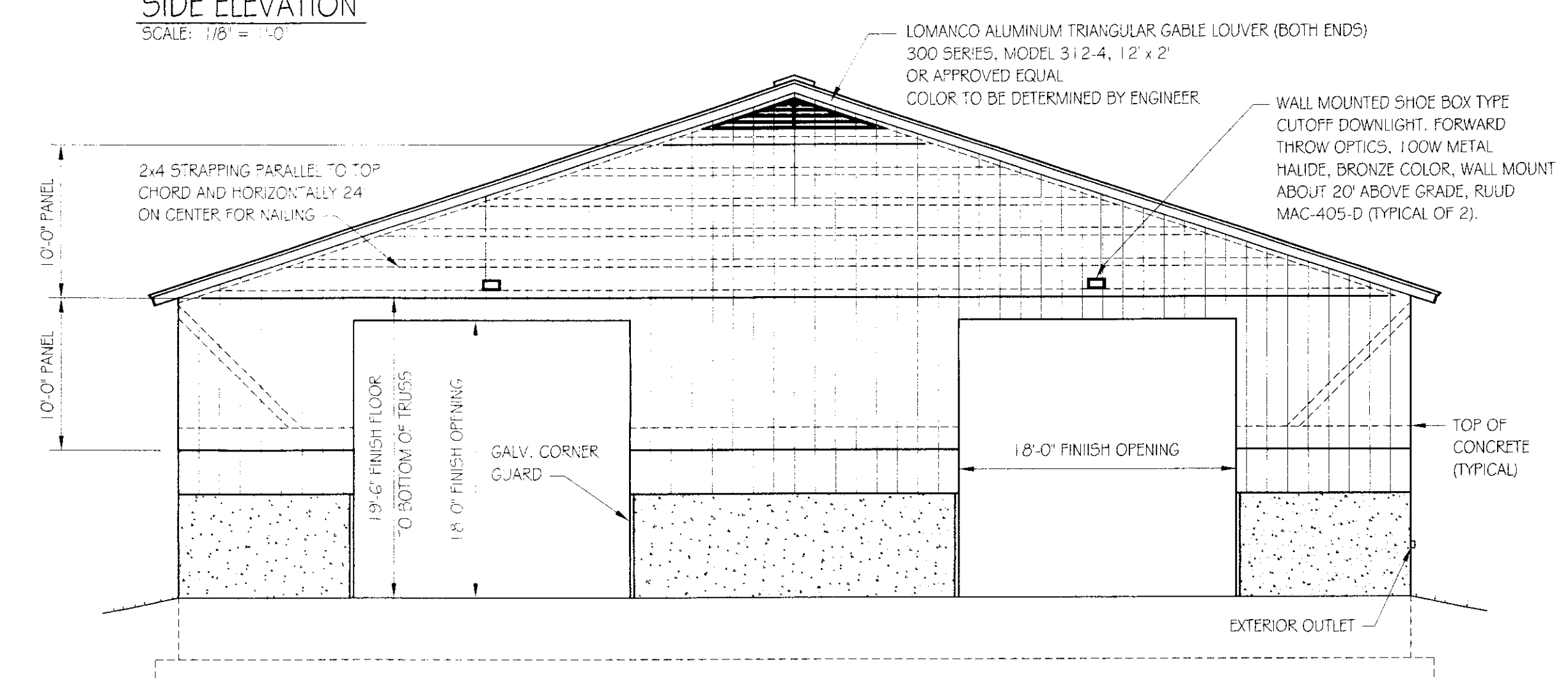
**CONCRETE NOTES:** PER A.O.T. STANDARD.  
 CONCRETE STRENGTH TO BE 3500 PSI  
 CONCRETE FINISH TO BE FLOATED.

CONCRETE TO BE CLASS "B" PER AOT STANDARD SPECIFICATIONS TABLE 501.03A WITH 5% ± 1% AIR ENTRAINMENT, AND 2"-4" SLUMP.  
 RE-BAR TO BE CONTINUOUS THROUGH CONSTRUCTION JOINTS.

CONTRACTOR TO LEAVE NO METAL WITHIN 1" OF SURFACE. USE 1" DEEP PLASTIC CONES AT ALL TIES AND PLUG ALL TIE HOLES WITH AN APPROVED NON-SHRINK GROUT.  
 ALL RE-BAR TO BE GRADE 60 WITH 3" CLEARANCE ON ALL SIDES UNLESS NOTED OTHERWISE.  
 RE-BAR TO BE STORED ON BLOCKING 4" MINIMUM ABOVE GROUND.

CONCRETE SUPPLIER TO PROVIDE TEST CYLINDERS FOR CONCRETE TESTING.  
 ALL CONCRETE TESTING TO BE DONE BY OWNER. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING.

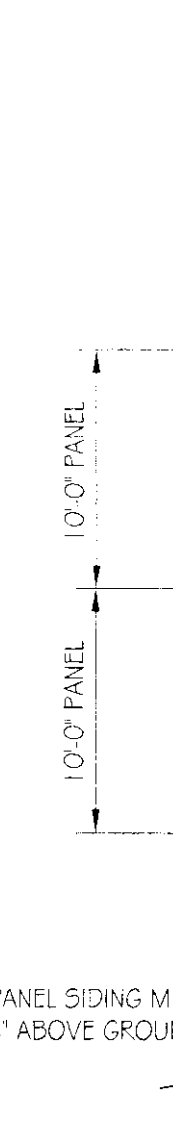
CONCRETE CURING SHALL FOLLOW IMMEDIATELY AFTER FORM REMOVAL PER A.O.T. STANDARD 501.17A. WATER CURING WILL BE REQUIRED, UNLESS ALTERNATE MEANS OF CURING IS APPROVED, IN WRITING, BY THE PROJECT ENGINEER.



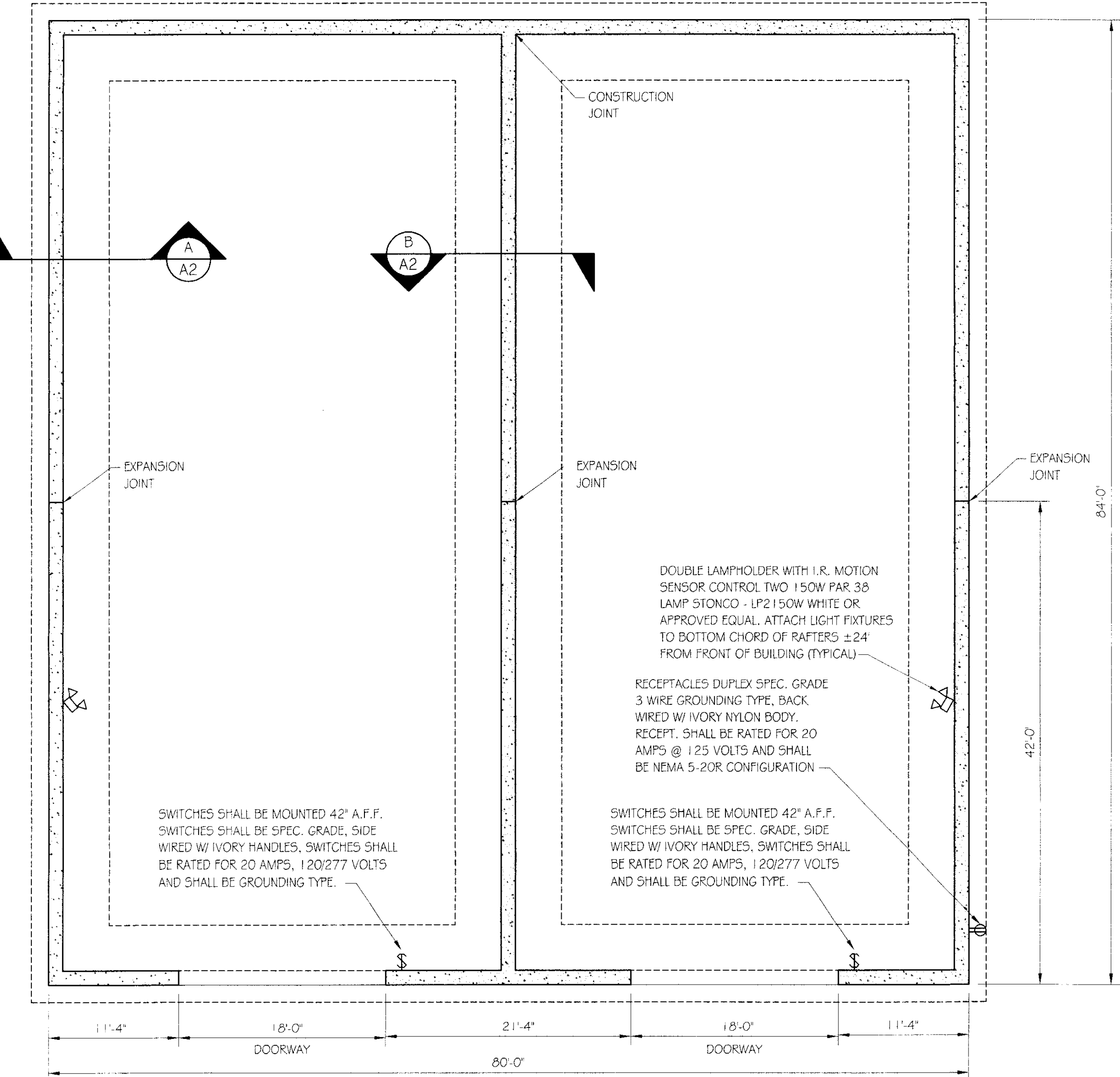
FRONT ELEVATION  
 SCALE: 1/8" = 1'-0"

DOORS TO BE TEXTILE COVERED METAL FRAME SLIDING DOORS DESIGNED BY OTTER CREEK AWNINGS. TO BE ASSEMBLED AND INSTALLED BY CONTRACTOR. SUBMITTAL OF SHOP DRAWING REQUIRED.

**NOTE:**  
 ALL ELECTRICAL CONDUIT BELOW GRADE AND ON THE EXTERIOR OF THE BUILDING SHALL BE 1" RIGID CONDUIT. CONDUIT INSIDE THE BUILDING SHALL BE 3/4" SCH. 80 PVC.



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



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

DOUBLE LAMPHOLDER WITH I.R. MOTION SENSOR CONTROL TWO 150W PAR 38 LAMP STONCO - LP2150W WHITE OR APPROVED EQUAL. ATTACH LIGHT FIXTURES TO BOTTOM CHORD OF RAFTERS ±24" FROM FRONT OF BUILDING (TYPICAL)

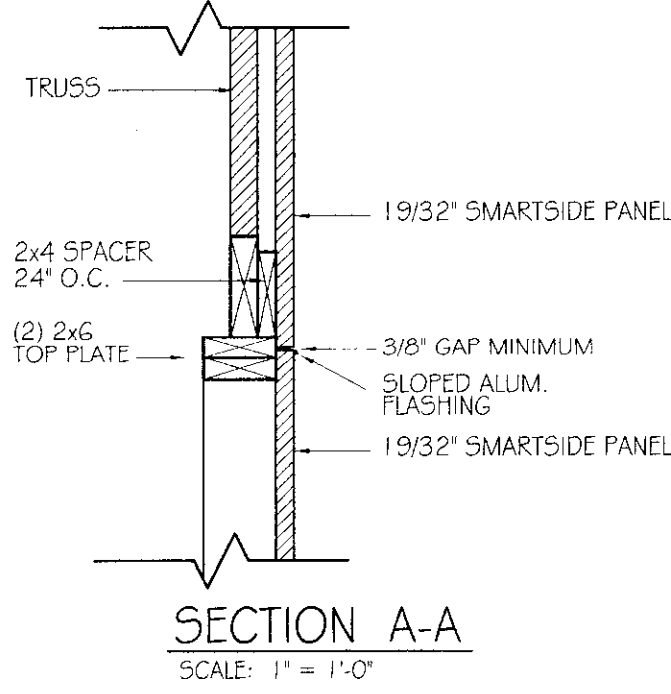
RECEPTACLES DUPLEX SPEC. GRADE 3 WIRE GROUNDING TYPE, BACK WIRED W/ IVORY NYLON BODY. RECEPT. SHALL BE RATED FOR 20 AMPS @ 125 VOLTS AND SHALL BE NEMA 5-20R CONFIGURATION

SWITCHES SHALL BE MOUNTED 42" A.F.F. SWITCHES SHALL BE SPEC. GRADE, SIDE WIRED W/ IVORY HANDLES. SWITCHES SHALL BE RATED FOR 20 AMPS, 120/277 VOLTS AND SHALL BE GROUNDING TYPE.

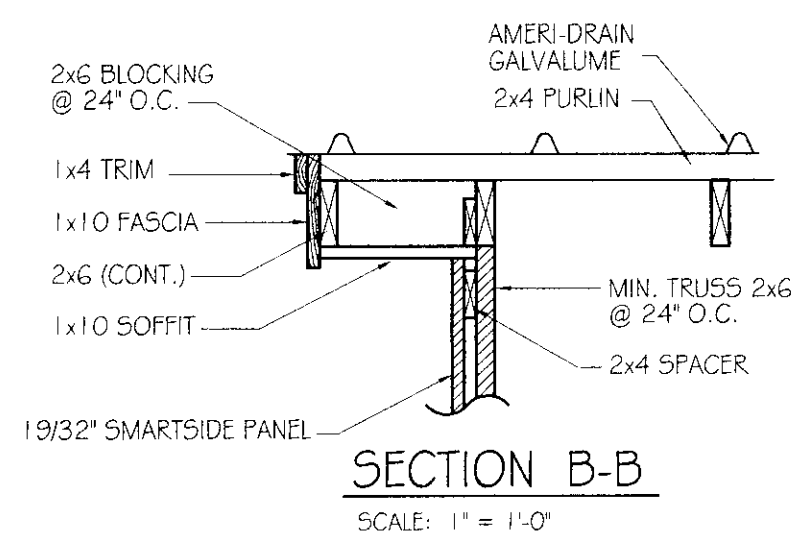
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REVISIONS	SCALE:	AS NOTED	DATE:	DRAWN BY:	APPR. BY:
			MAY 2005	S.K. Janawicz	R. BARRY

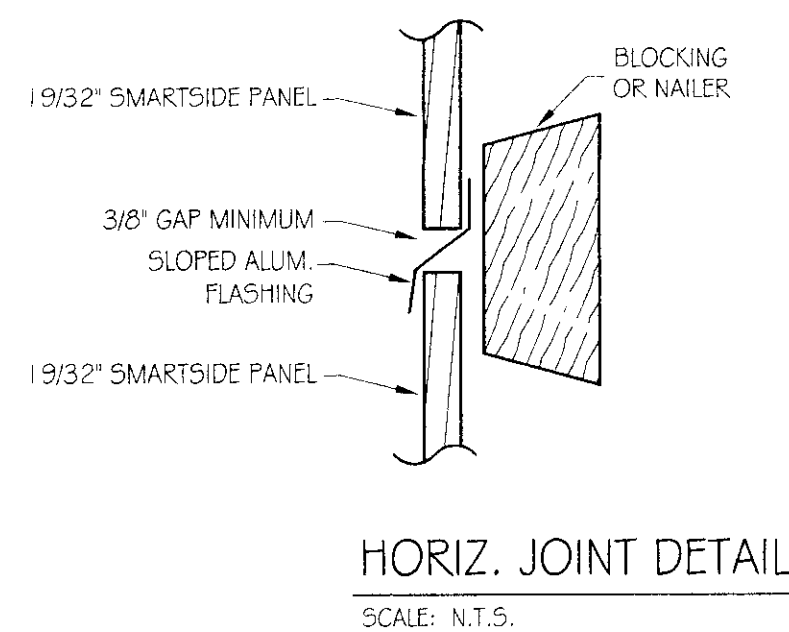
AGENCY OF TRANSPORTATION
NEW 80' x 84' SALT SHED
PLAN, DETAILS & ELEVATIONS



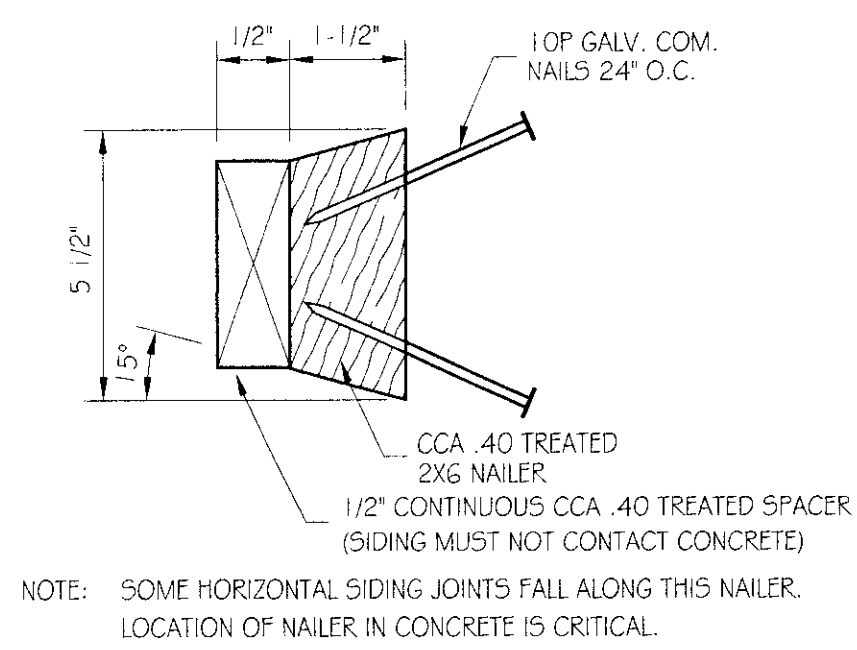
SECTION A-A  
SCALE: 1" = 1'-0"



SECTION B-B  
SCALE: 1" = 1'-0"

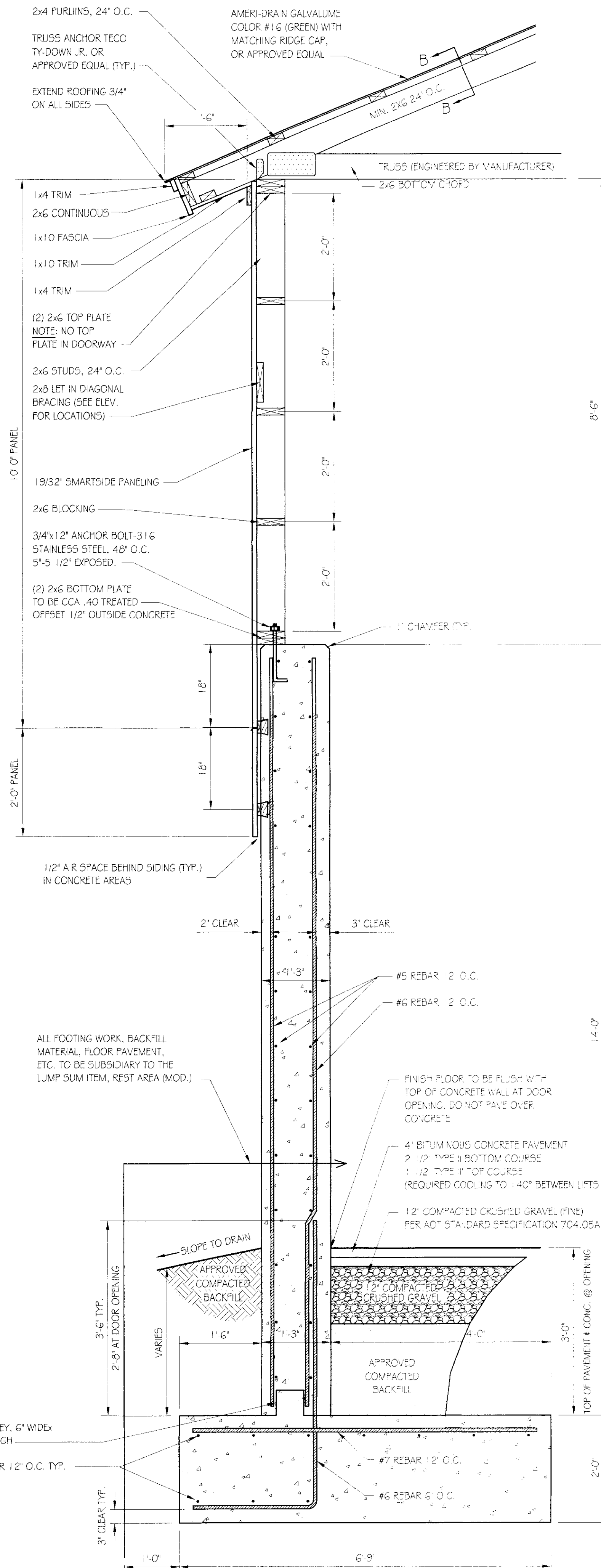


HORIZ. JOINT DETAIL  
SCALE: N.T.S.

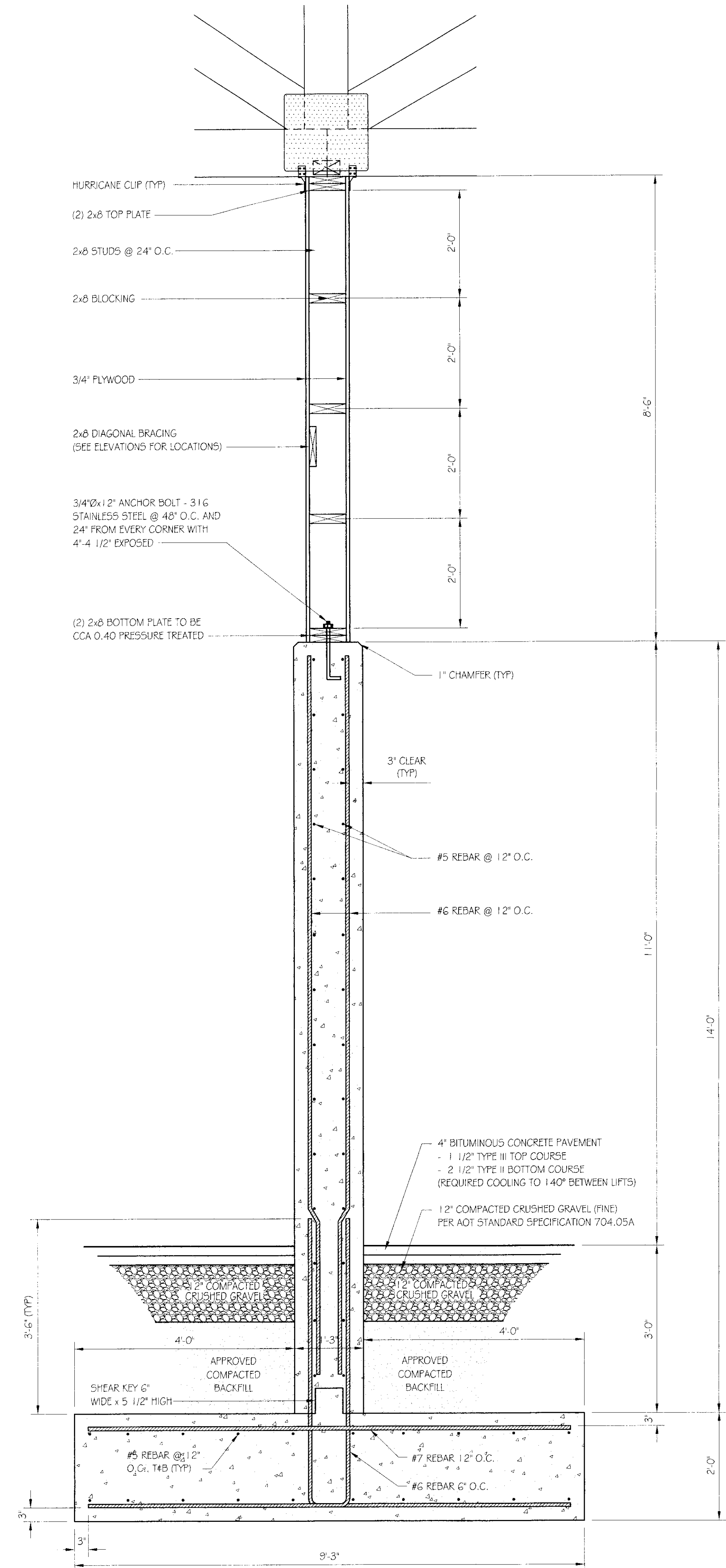


NOTE: SOME HORIZONTAL SIDING JOINTS FALL ALONG THIS NAILER. LOCATION OF NAILER IN CONCRETE IS CRITICAL.

NAILER DETAIL  
SCALE: N.T.S.



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



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



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



VERMONT

AGENCY OF TRANSPORTATION  
NEW 80' x 84' SALT SHED  
SECTIONS

WILMINGTON

REVISIONS

SCALE:	A5 NOTED
DATE:	MAY 2005
DRAWN BY:	S.K. Janawicz
APPR. BY:	R. BARRY

AGENCY OF TRANSPORTATION  
NEW 80' x 84'  
SALT SHED  
SECTIONS

A2

SITE ENGINEER:



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

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OWNER:

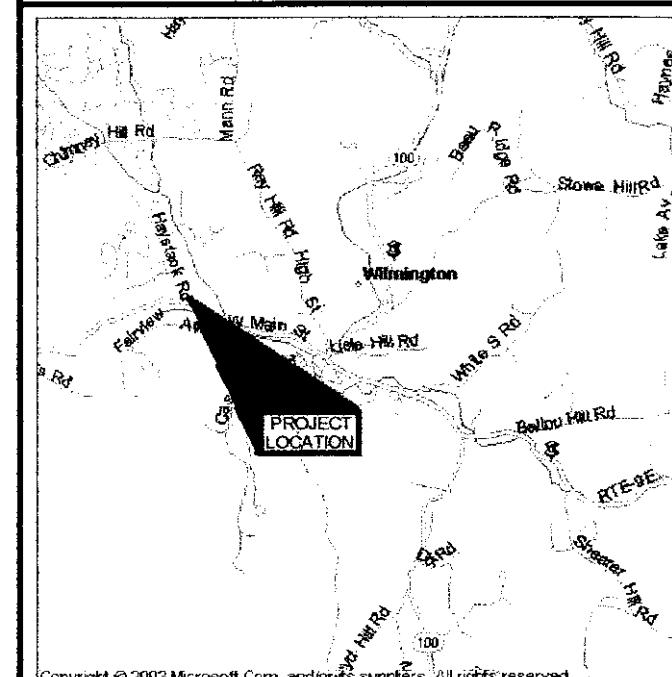


STATE OF VERMONT  
VERMONT AGENCY OF TRANSPORTATION  
MONTPELIER, VERMONT

PROJECT:

DISTRICT 1 WILMINGTON GARAGE

HAYSTACK ROAD WILMINGTON, VERMONT



LOCATION MAP

1" = 7000±

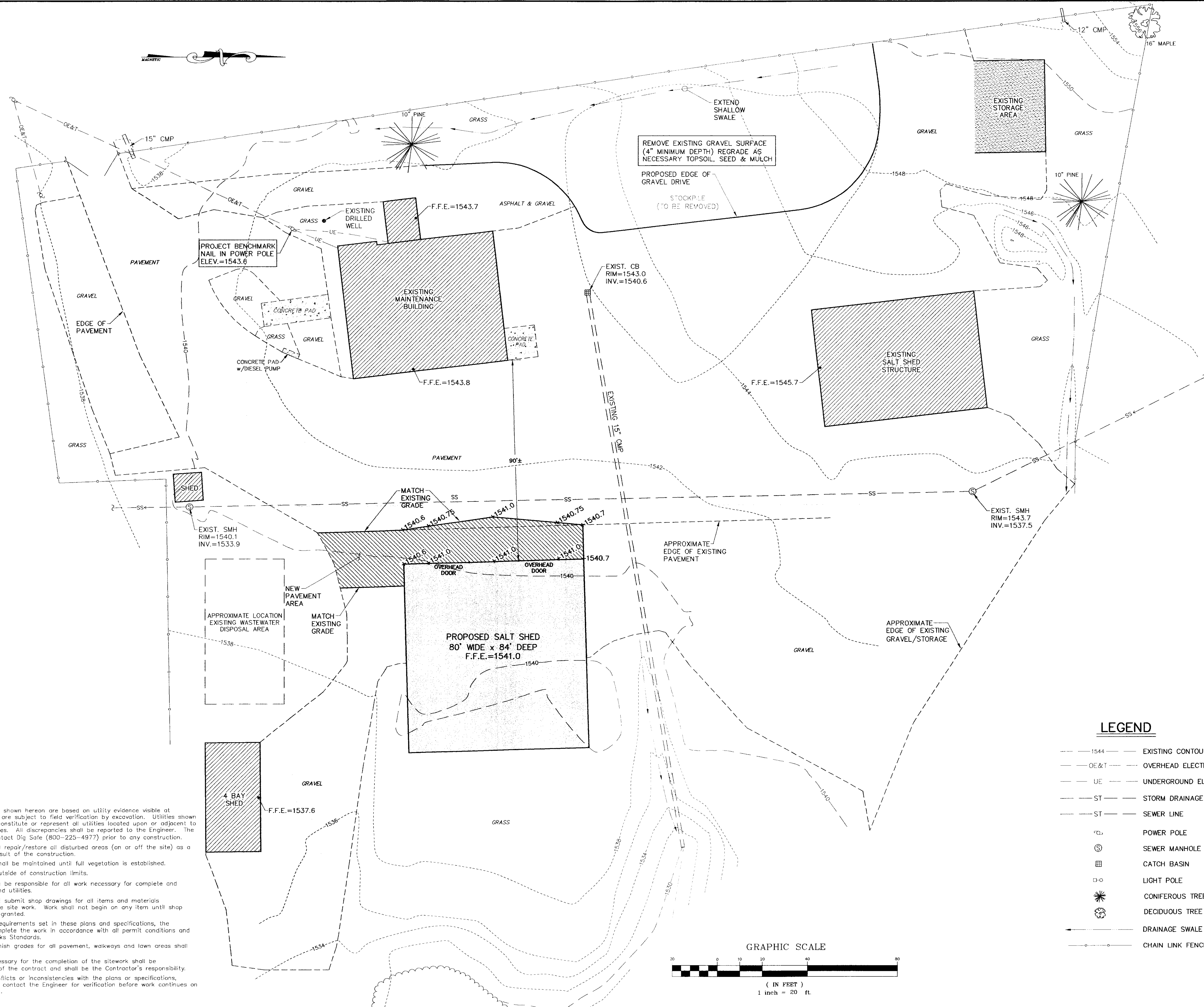
DATE	CHECKED	REVISION
3/15/06	BCE	HD DOCUMENTS
5/25/06	BCE	REVISED TO 60 FOOT WIDTH

# PROPOSED CONDITIONS PLAN

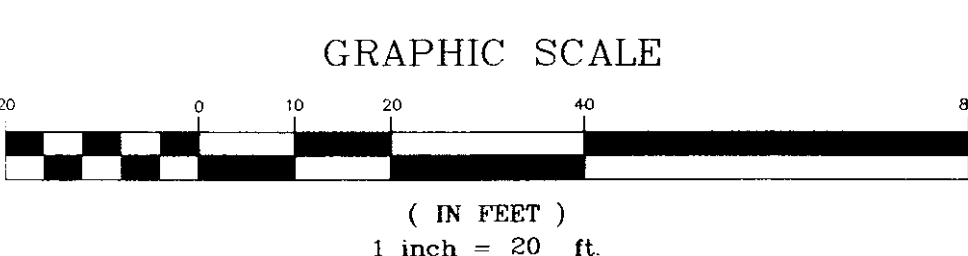
DATE  
FEB., 2005  
SCALE  
1" = 20'  
PROJ. NO.  
04128.11

DRAWING NUMBER

# C1.0



- NOTES:
- 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.
  - The Contractor shall repair/restore all disturbed areas (on or off the site) as a direct or indirect result of the construction.
  - All grassed areas shall be maintained until full vegetation is established.
  - Maintain all trees outside of construction limits.
  - The Contractor shall be responsible for all work necessary for complete and operable facilities and utilities.
  - 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.
  - 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.
  - The tolerance for finish grades for all pavement, walkways and lawn areas shall be 0.1 feet.
  - Any dewatering necessary for the completion of the sitework shall be considered as part of the contract and shall be the Contractor's responsibility.
  - 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

- 1544 --- EXISTING CONTOUR
- OE&T --- OVERHEAD ELECTRIC & TELEPHONE
- UE --- UNDERGROUND ELECTRIC
- ST --- STORM DRAINAGE LINE
- ST --- SEWER LINE
- ⊙ POWER POLE
- ⊙ SEWER MANHOLE
- ⊠ CATCH BASIN
- ⊙ LIGHT POLE
- ⊙ CONIFEROUS TREE
- ⊙ DECIDUOUS TREE
- DRAINAGE SWALE
- CHAIN LINK FENCE

SITE ENGINEER:

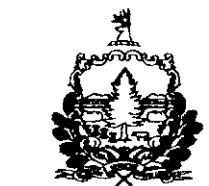


CIVIL ENGINEERING ASSOCIATES, INC.  
P.O. BOX 485 SHELburnE, VT 05482  
802-985-2323 FAX: 802-985-2271 web: www.caa-vt.com

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BCE

OWNER:



STATE OF VERMONT  
VERMONT AGENCY OF TRANSPORTATION  
MONTPELIER, VERMONT

PROJECT:

DISTRICT 1 WILMINGTON GARAGE  
HAYSTACK ROAD WILMINGTON, VERMONT

DATE	CHECKED	REVISION
3/15/05	BCE	BID DOCUMENTS

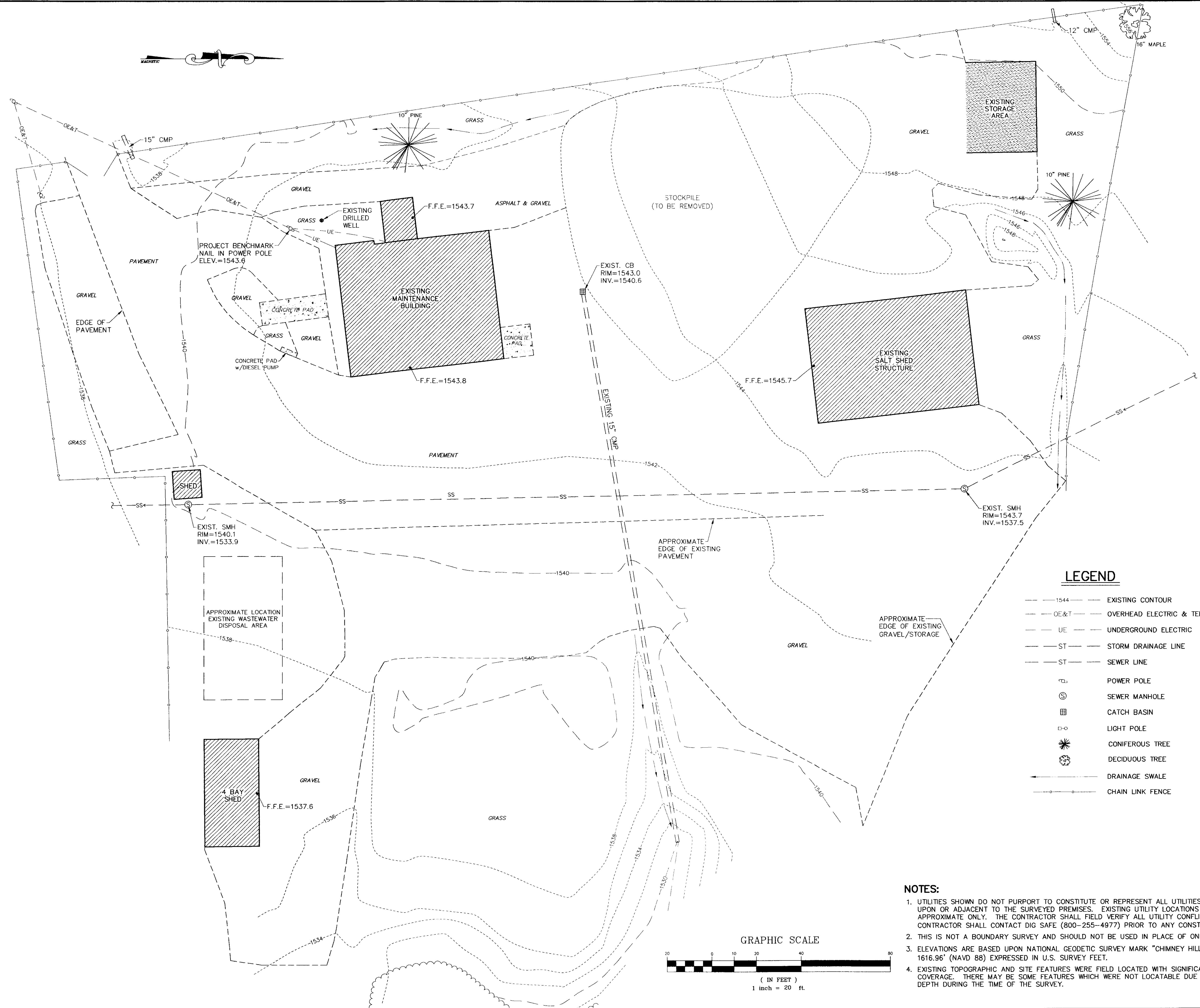
### EXISTING CONDITIONS PLAN

DATE  
FEB., 2005

SCALE  
1" = 20'

PROJ. NO.  
04128.11

DRAWING NUMBER  
**C1.1**



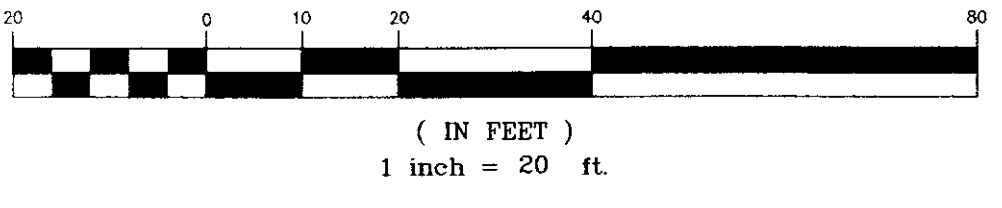
#### LEGEND

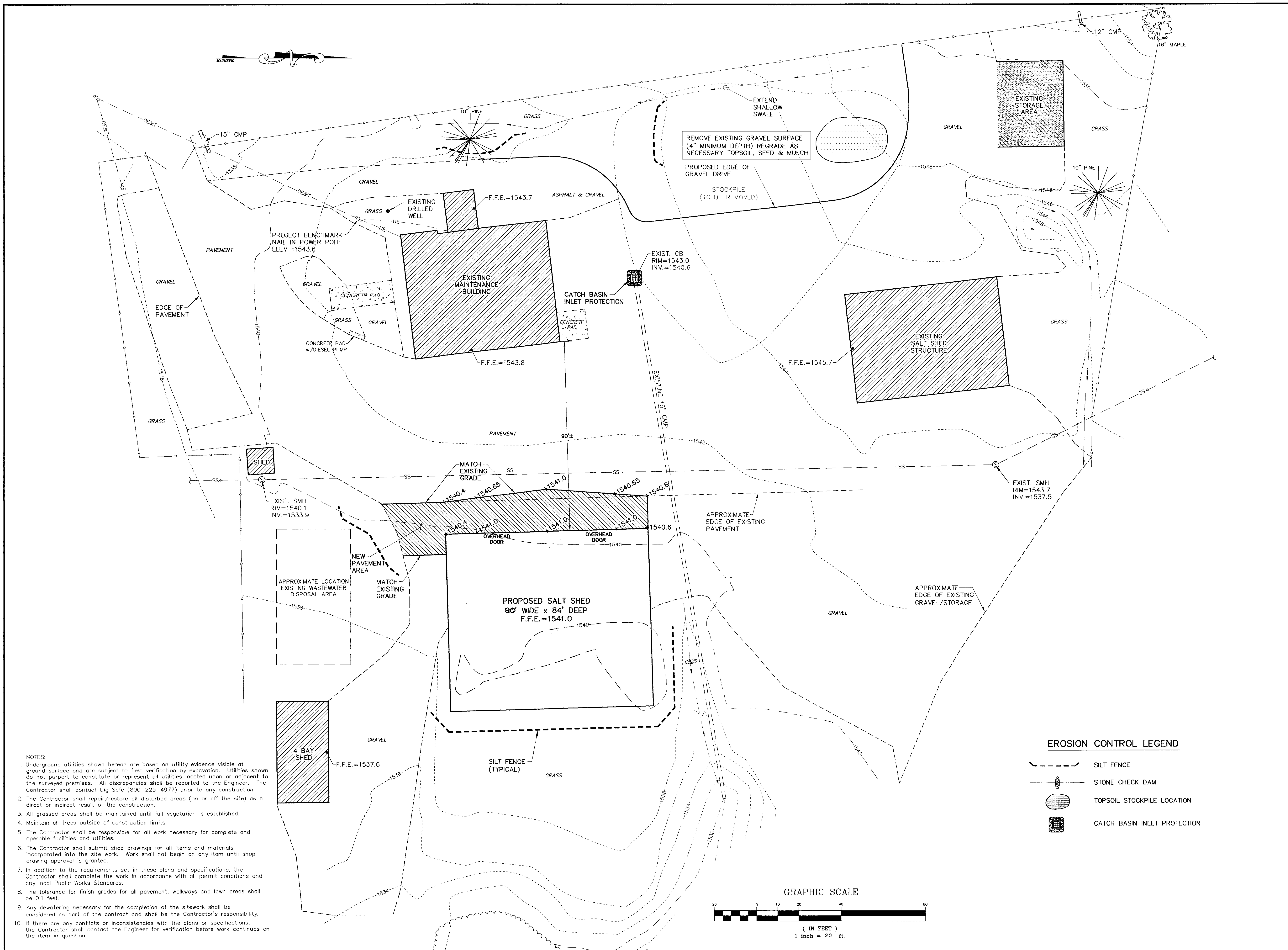
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#### NOTES:

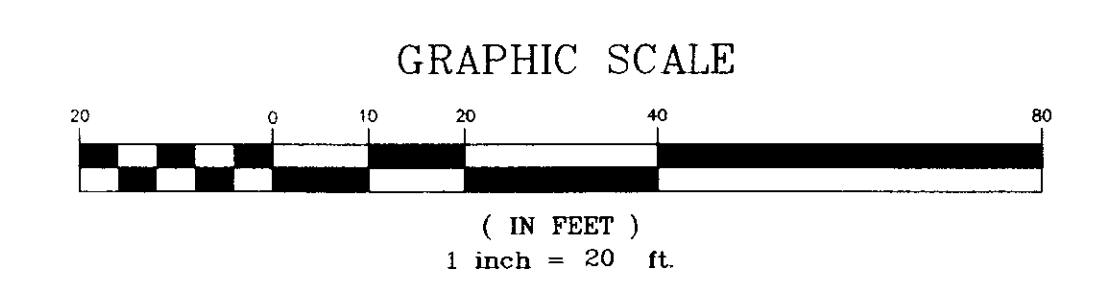
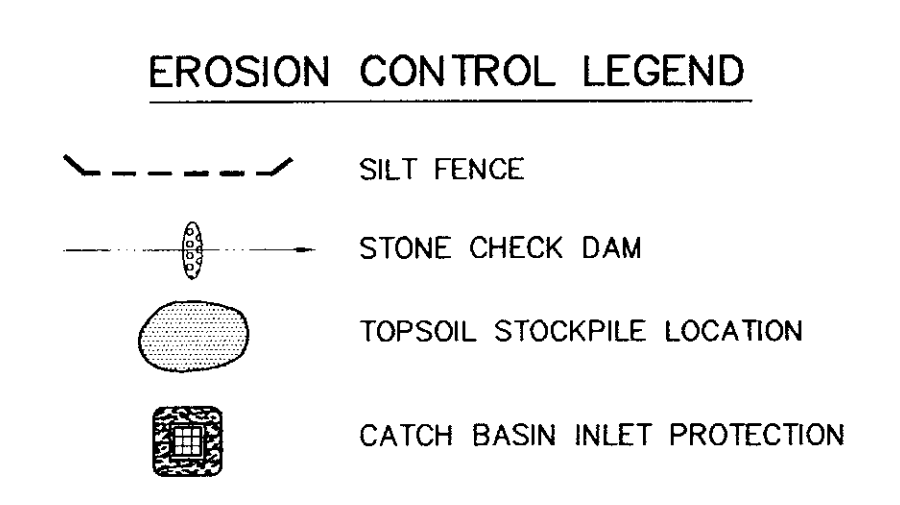
1. UTILITIES SHOWN DO NOT PURPORT TO CONSTITUTE OR REPRESENT ALL UTILITIES LOCATED UPON OR ADJACENT TO THE SURVEYED PREMISES. EXISTING UTILITY LOCATIONS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL UTILITY CONFLICTS. THE CONTRACTOR SHALL CONTACT DIG SAFE (800-255-4977) PRIOR TO ANY CONSTRUCTION.
2. THIS IS NOT A BOUNDARY SURVEY AND SHOULD NOT BE USED IN PLACE OF ONE.
3. ELEVATIONS ARE BASED UPON NATIONAL GEODETIC SURVEY MARK "CHIMNEY HILL", ELEVATION 1616.96' (NAVD 88) EXPRESSED IN U.S. SURVEY FEET.
4. EXISTING TOPOGRAPHIC AND SITE FEATURES WERE FIELD LOCATED WITH SIGNIFICANT SNOW COVERAGE. THERE MAY BE SOME FEATURES WHICH WERE NOT LOCATABLE DUE TO THE SNOW DEPTH DURING THE TIME OF THE SURVEY.

#### GRAPHIC SCALE





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**PJM**  
 CHECKED  
**BCE**  
 APPROVED  
**BCE**

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

PROJECT:  
**DISTRICT 1  
 WILMINGTON  
 GARAGE**  
 HAYSTACK ROAD  
 WILMINGTON, VERMONT

DATE	CHECKED	REVISION
3/15/06	BCE	BID DOCUMENTS

**EROSION CONTROL PLAN**

DATE  
**FEB., 2005**  
 SCALE  
**1" = 20'**  
 PROJ. NO.  
**04128.11**

DRAWING NUMBER  
**C1.2**

**BUILDING BACKFILL**

**PART 1 - GENERAL**

- 1.01 SUMMARY**
- A. Section includes:
- Building perimeter and site structure backfilling to subgrade elevations.
  - Fill under slabs on grade.
  - Consolidation and compaction.
  - 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 flotation 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 obtain 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 1/4 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 3/8" when tested with a 10' straight edge.

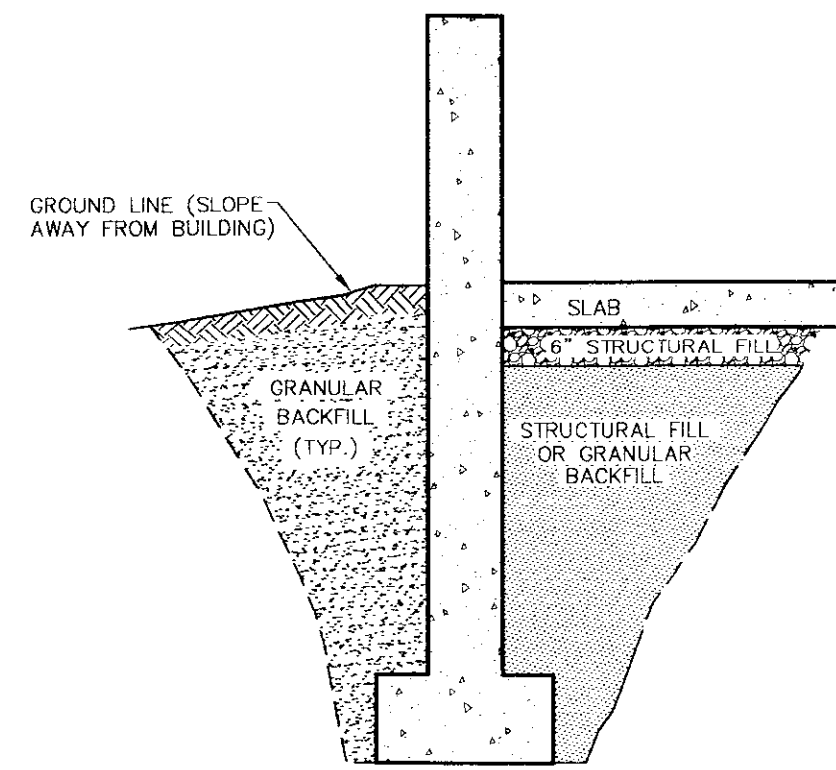
**3.05 FIELD QUALITY CONTROL**

- 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.

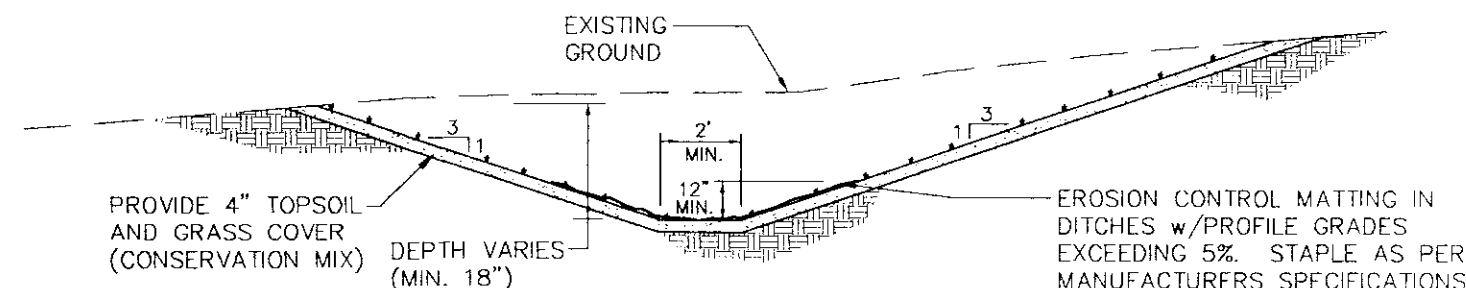
**3.06 SCHEDULE**

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

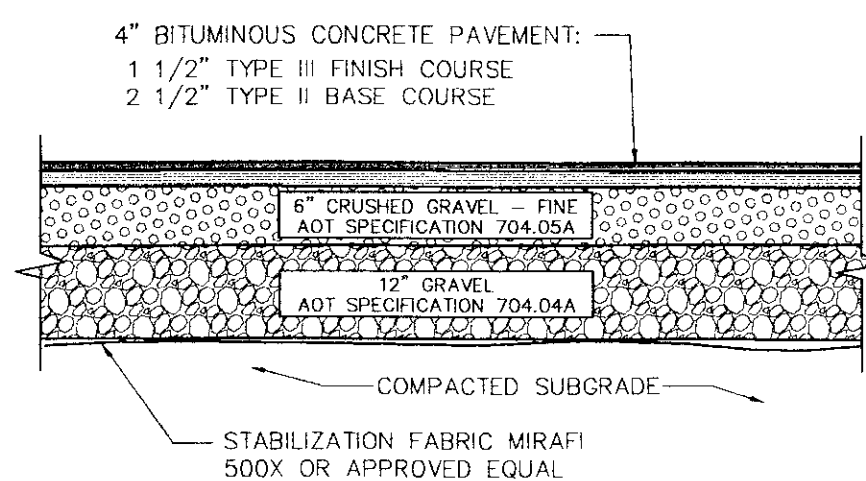
LOCATION	MATERIAL	% COMPACTION MODIFIED PROCTOR ASTM D-1557
Under Footings	Undisturbed Native Material; or Structural Fill	98%
Interior Slab-on-Grade	Structural Fill	95%
Interior, Adjacent to Foundation Walls	Structural Fill; or Granular Backfill	95%
Exterior, Adjacent to Foundation Walls	Structural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



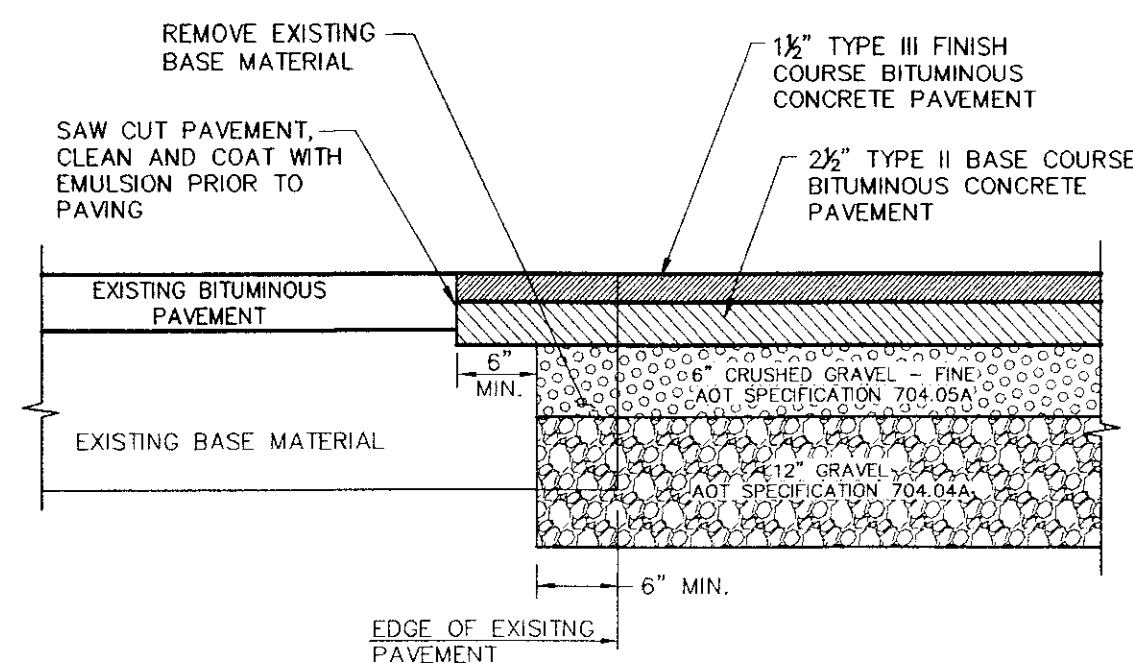
**TYPICAL FOUNDATION BACKFILL SECTION**  
N.T.S.



**GRASS LINED DITCH**  
N.T.S.



**TYPICAL PAVEMENT SECTION**  
N.T.S.



**TRANSITION FROM NEW PAVEMENT TO EXISTING PAVEMENT**  
N.T.S.

**PROJECT COORDINATION**

**PART 1 - GENERAL**

**1.01 MEETINGS & PROJECT ACCESS**

- A. The Owner shall be notified five (5) days prior to commencement of Work by the Contractor.
- B. The Contractor will coordinate with the Owner to arrange an on-site pre-construction meeting prior to commencement of any work. Job superintendents and subcontractors shall be included in this meeting.
- C. The Contractor will coordinate all phases of the Work, so as not to interfere with the normal work procedures in the area.
- D. The Contractor shall conduct his work in such a manner as to not interfere with or endanger work or traffic in areas adjacent to the construction area, except as permitted by the Owner. The Contractor shall so arrange his construction operations as to provide access for emergency vehicles and equipment to the work site at all times.

**1.02 LABOR**

- A. The Contractor and subcontractors will employ mechanics skilled in their respective trades.
- B. All labor will be performed in a neat and workmanlike manner.

**1.03 PROTECTION OF PERSONS AND PROPERTY**

- A. The Contractor shall be responsible for initiating, maintaining, and supervising all O.S.H.A. safety precautions in connection with the Work.
- B. Fire Protection: The Contractor shall take all necessary precautions to prevent fires adjacent to the Work and shall provide adequate facilities for extinguishing fires. The Contractor shall also prevent fires in project related buildings and shall prevent the spread of fires to areas outside the limits of the Work.
- C. Safety Precautions: Prior to commencement of Work, the Contractor shall be familiar with all safety regulations and practices applicable with construction operations. No additional payments will be made for equipment and procedures necessitated by these safety precautions.

**1.04 CORRECTION OF WORK**

- A. The Contractor shall promptly correct all Work rejected by the Owner as defective or as failing to conform to the Contract Documents. The Contractor shall bear all cost of correcting such rejected Work.

**1.05 WEATHER CONDITIONS**

- A. No Work shall be done when, in the opinion of the Owner, the weather is unsuitable. No concrete, earth backfill, embankment, or paving shall be placed upon frozen material. If there is delay or interruption in the Work due to weather conditions, the necessary precautions must be taken to bond new Work to old.
- B. Protection Against Water and Storm: The Contractor shall take all precautions to prevent damage to the Work by storms or by water entering the site of the Work directly or through the ground. In case of damage by storm or water, the Contractor, at his own expense, shall make repairs or replacements or rebuild such parts of the Work as the Engineer may require in order that the finished work may be completed as required by the Drawings and Specifications.

**1.06 DISPOSAL OF DEBRIS**

- A. All debris and excess materials, other than that which is authorized to be reused, become the property of the Contractor and shall be promptly removed from the property. The Contractor shall receive title to all debris and/or excess material. The Owner will not be responsible for any loss or damage to debris or excess material owned by the Contractor.

**1.07 PROJECT LAYOUT**

- A. The Contractor shall be responsible for providing all necessary survey staking.
- Locate and protect control points before starting work on the site.
  - Preserve permanent reference points during progress of the Work.
  - Establish a minimum of two permanent benchmarks on the site, referenced to data established by survey control points.
    - Record locations, with horizontal and vertical data, on Project Record Documents.

**SITE EARTHWORK**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. Section includes:
- All excavation (unless covered in other sections of these specifications), removal and stockpiling of topsoil, stabilization fabric, and other miscellaneous and appurtenant works.
  - Site filling.
  - 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 quarable 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/GRAVULAR 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 on approved stabilization fabric on a prepared surface within the limits shown on the plans. The fabric shall meet, or exceed the following properties:
- Grab tensile strength (ASTM D-1682) - 300 lbs.
  - Grab tensile elongation (ASTM D-1682) - 35 %
  - Burst strength (ASTM D-751) - 600 psi

**PART 3 - EXECUTION**

**3.01 PREPARATION**

- A. Identify required lines, levels, contours, and datum locations.
- 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 top 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 graded 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.
- Maintain stockpile free from debris and trash.
  - Keep the topsoil damp to prevent dust and drying out.

**3.05 SUBSOIL EXCAVATION**

- A. Excavate subsoil from areas to be graded 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 COMPACTION REQUIREMENTS**

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

Location	Standard Proctor ASTM D-1557
Subgrade (6" and Gravel for Roads and Parking Lots)	95%
General Embankments	90%

**BITUMINOUS CONCRETE PAVING**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. Section includes:
- Base Courses
  - Levelling Courses
  - 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 of 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.
- 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 out the existing pavement, over the existing gravel base. The smooth out 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. Cool 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 days' 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 obtain its initial stability, the power 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.

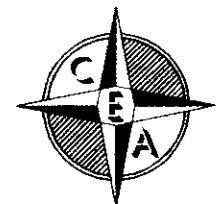
**3.09 REPAIR OF SUBSIDENCE**

- 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 Contractor for all costs incurred in making such repairs.

**3.10 MARKING PAVEMENT FOR PAVING**

- 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 handpainted symbols and all other miscellaneous signs and symbols as indicated on the Contract Plans.

**SITE ENGINEER:**



**CIVIL ENGINEERING ASSOCIATES, INC.**

P.O. BOX 485 SHELburnE, VT 05482  
802-985-2323 FAX: 802-985-2271 web: www.cca-vt.com

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PJM

**CHECKED**

BCE

**APPROVED**

BCE

**OWNER:**



**STATE OF VERMONT**

VERMONT AGENCY OF TRANSPORTATION  
MONTPELIER, VERMONT

**PROJECT:**

**DISTRICT 1 WILMINGTON GARAGE**

HAYSTACK ROAD WILMINGTON, VERMONT

**DATE CHECKED REVISION**

3/15/06 BCE BID DOCUMENTS

**SITE DETAILS and SPECIFICATIONS**

DATE FEB., 2005

SCALE AS SHOWN

PROJ. NO. 04128.11

DRAWING NUMBER

**C2.0**

**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 contact 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 obtained 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, alkalis, 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)" detail and placed 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.

**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**

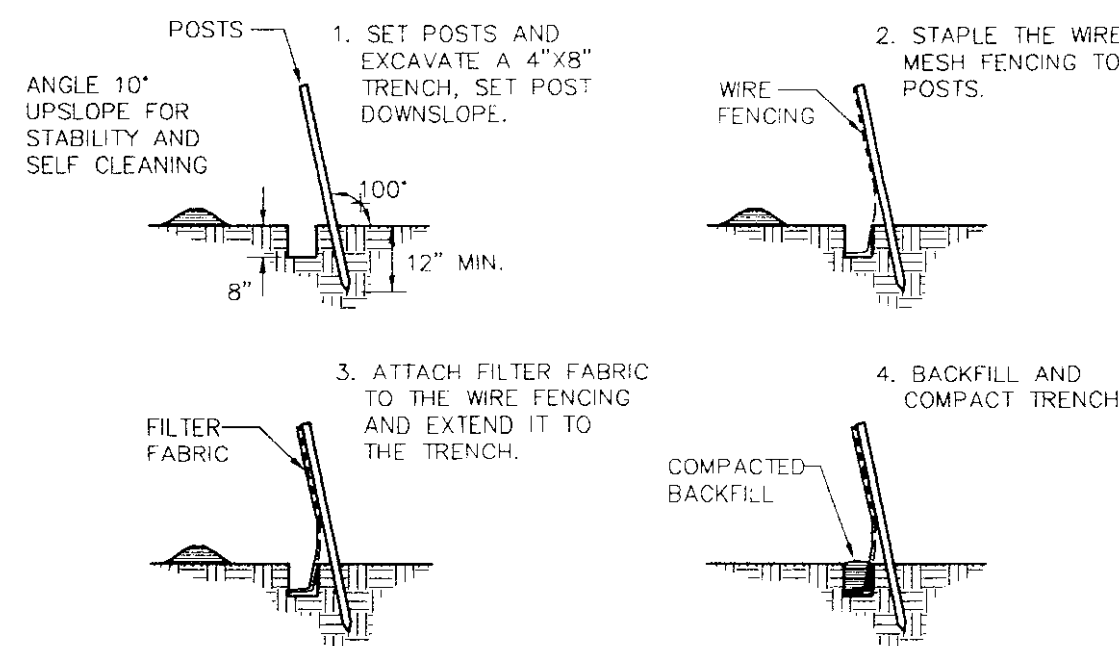
A. All essential grading and all temporary structures, such as diversions, dams, ditches, and drains needed to prevent gully and reduce siltation, should be completed prior to seeding.

**3.02 SEED AND SEEDING**

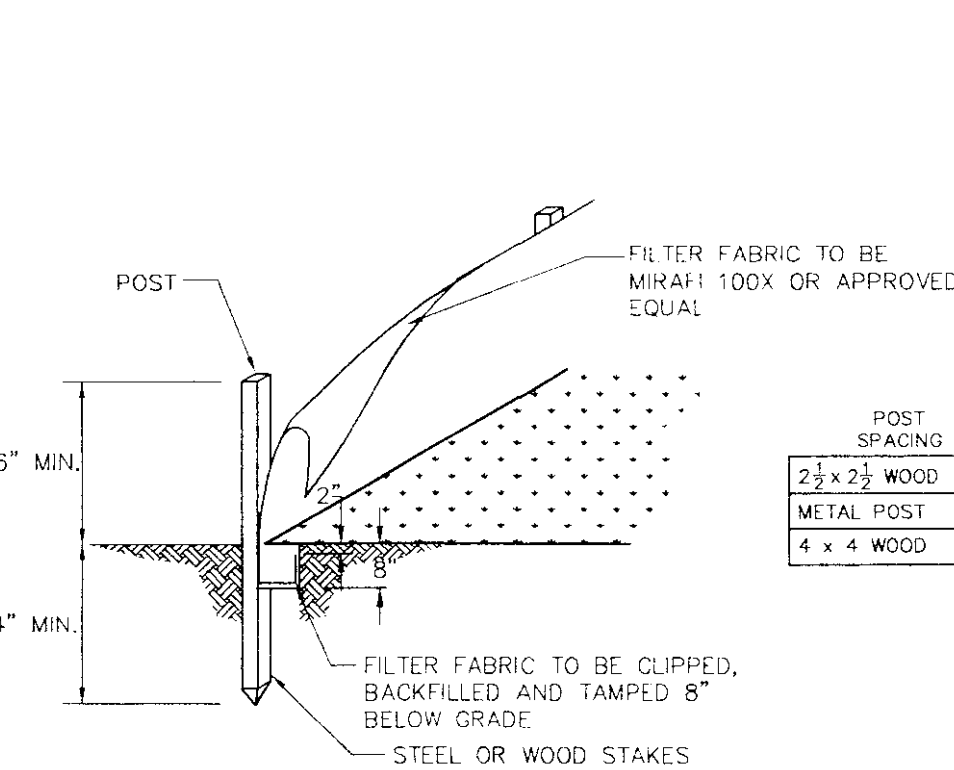
A. Seed and seeding rates may be selected from the table below. The selection will be based on the time of year the seeding is to be made and the length of time the vegetation is to afford the protection. The seed should be spread uniformly over the area. After seeding, the soil should be firmed by rolling 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.

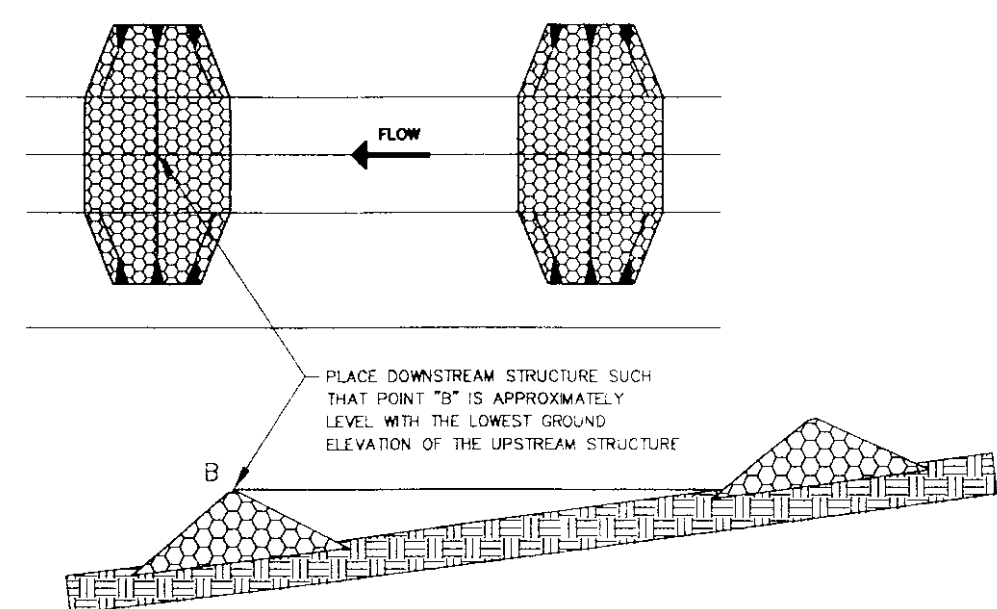
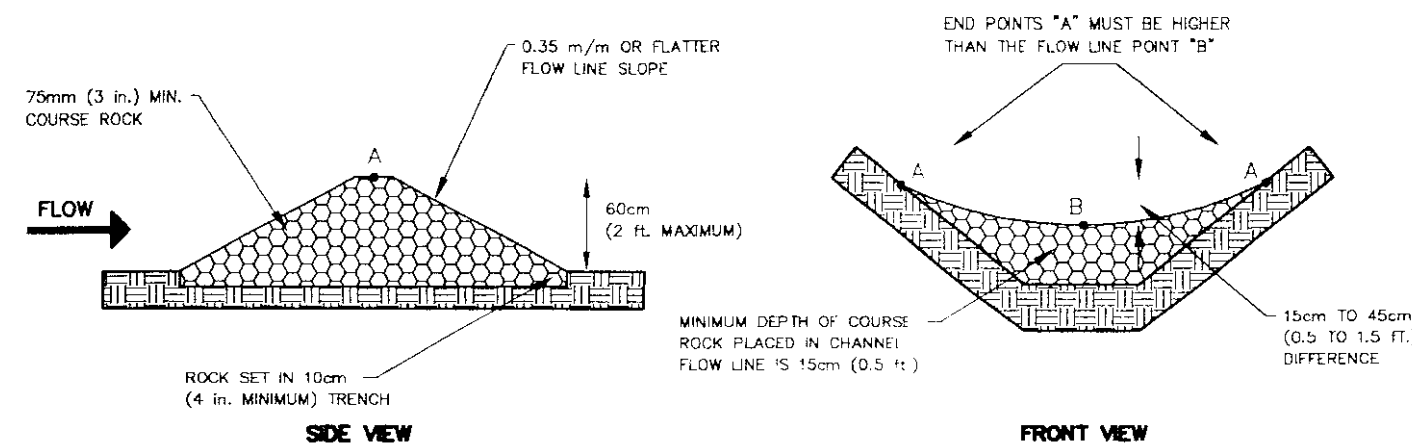


**SILT FENCE CONSTRUCTION DETAIL**  
N.T.S.

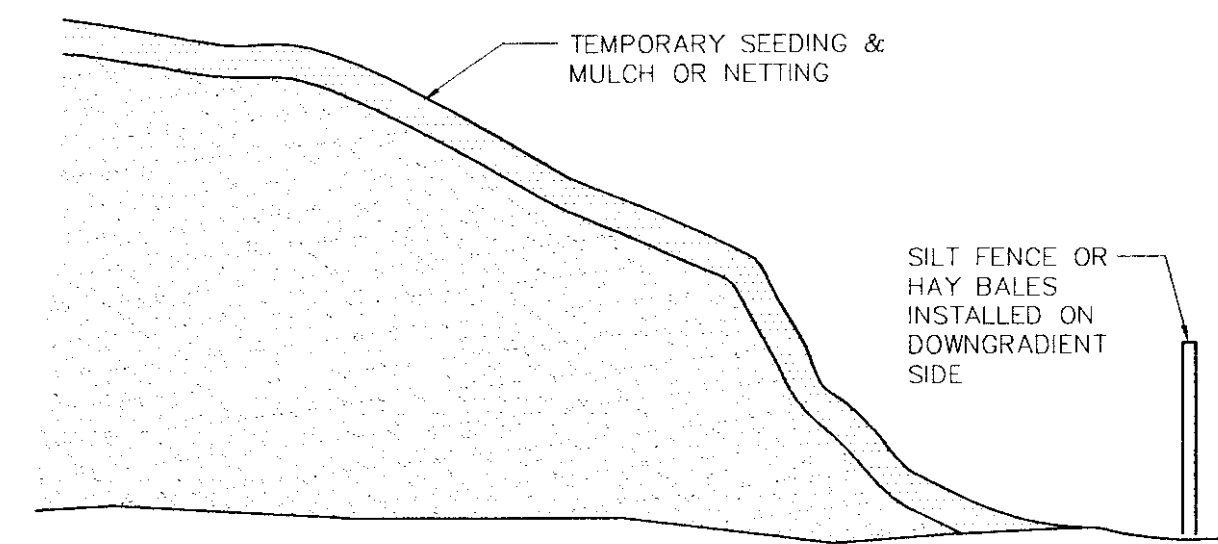


**SILT FENCE DETAIL**  
N.T.S.

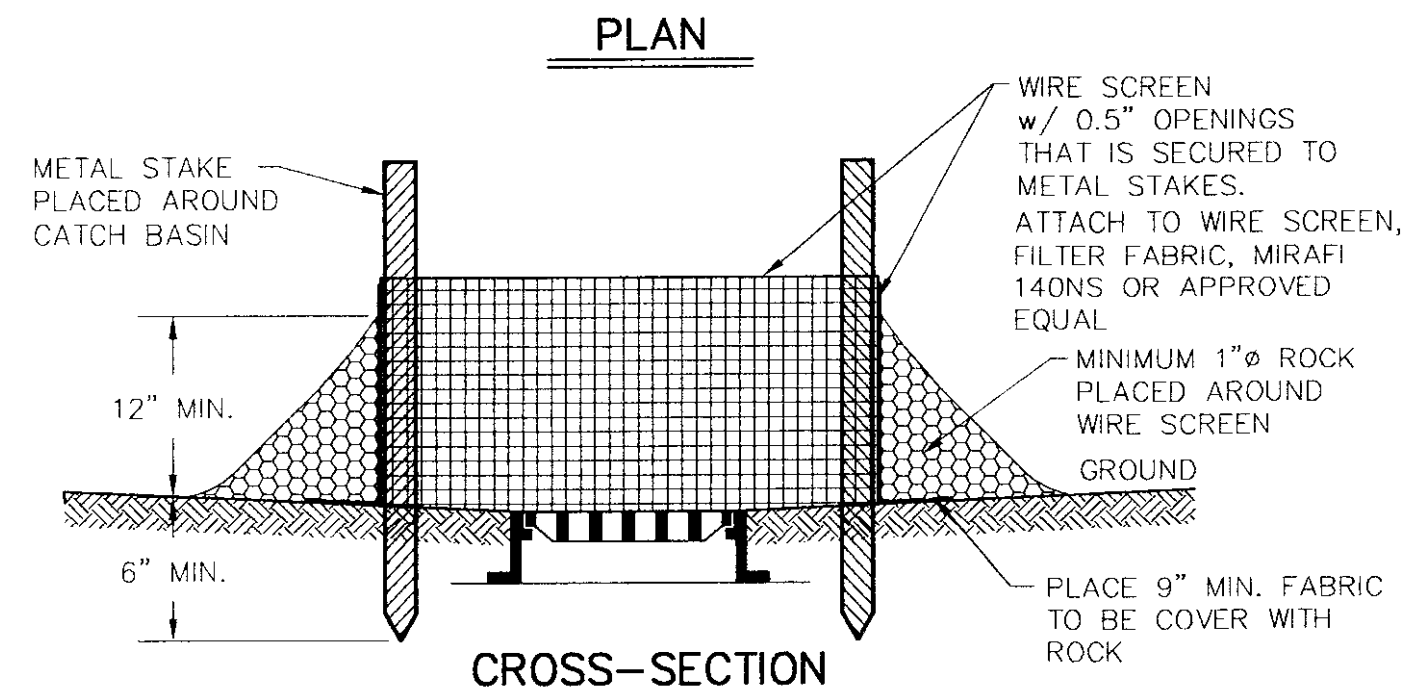
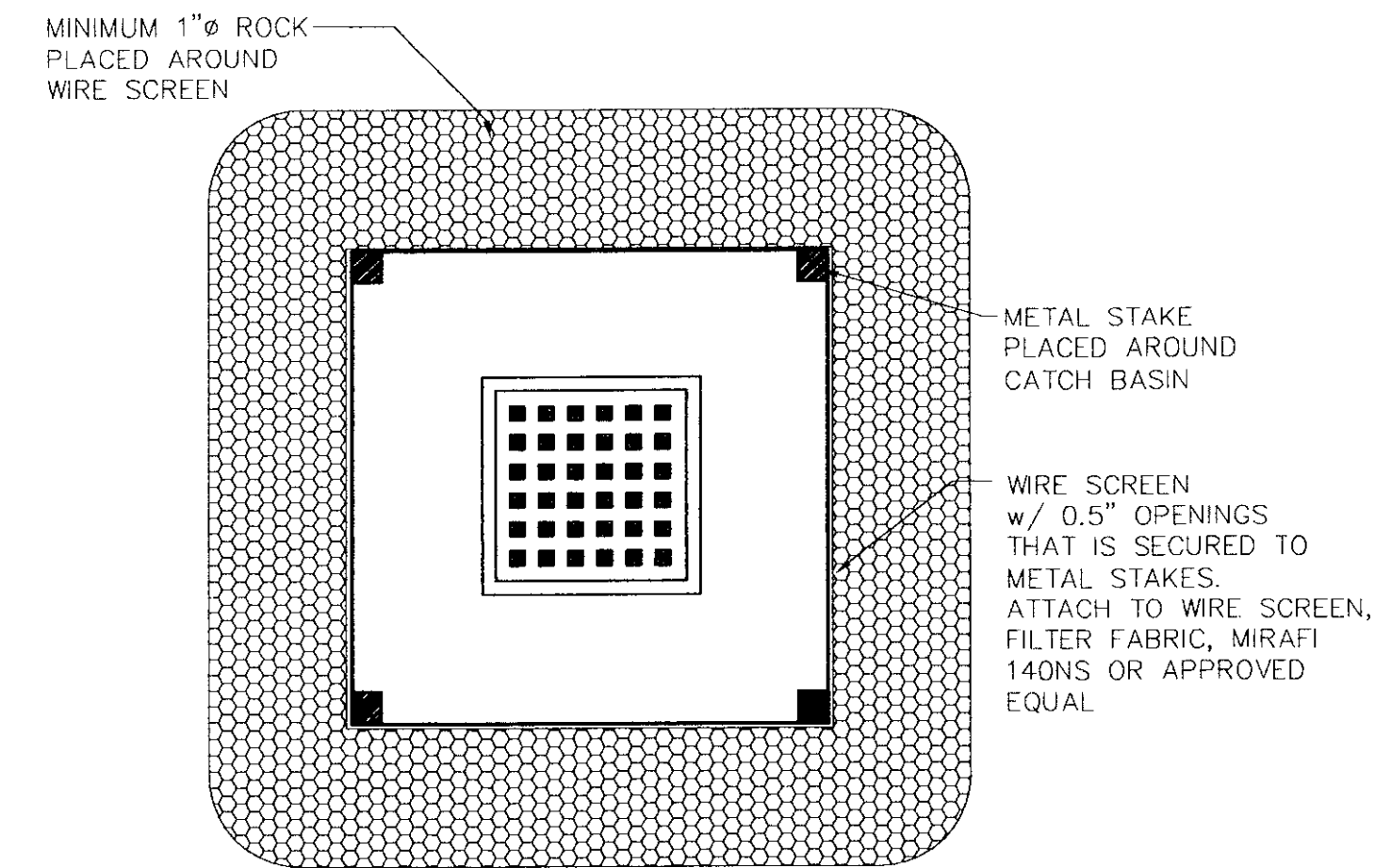
D-50 OF ROCK (MM)	DOWNSTREAM FLOWLINE SLOPE OF STRUCTURE (m/m)	MAXIMUM WATER DEPTH OVER ROCK (mm)
75	0.35 0.30 0.25 0.20 0.15 0.10	15 18 20 25 33 48
150		30 36 41 50 65 100



**STONE CHECK DAM STRUCTURE**  
N.T.S.



**TEMPORARY STOCKPILE DETAIL**  
N.T.S.



**CATCH BASIN INLET PROTECTION (WITH METAL STAKES)**  
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.cca-vt.com

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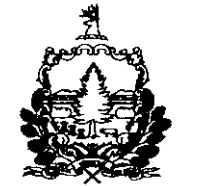
CHECKED

BCE

APPROVED

BCE

OWNER:



**STATE OF VERMONT**  
VERMONT AGENCY OF TRANSPORTATION  
MONTPELIER, VERMONT

PROJECT:

**DISTRICT 1 WILMINGTON GARAGE**

**HAYSTACK ROAD WILMINGTON, VERMONT**

DATE	CHECKED	REVISION
3/15/06	BCE	BID DOCUMENTS

**EROSION CONTROL NOTES and DETAILS**

DATE

FEB., 2005

SCALE

AS SHOWN

PROJ. NO.

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