Ferry Road
P.O. Box 119
Charlotte, Vermont 05445-0119

Town of Charlotte

Established June 25, 1762

802/425-3071 Town Clerk
802/425-3533 Planning & Zoning
802/425-3855 Listers
Fax: 802/425-4241

September 23, 1997

To: Interested Persons

From: Zoning Administrator

Re: **Town of Charlotte Recommended Standards for Developments and Homes**

1. Attached to this memo are the current standards for developments and homes in Charlotte. This standard for roads, drives and fire protection water sources has been updated from the 10/8/95 standards which have been used as guidelines in the past. The Planning Office has been working with Fire and Rescue for several years reviewing other town's standards and ordinances and past requirements in Charlotte. Since I have been here in April I have had three work sessions with the senior members of the group to make sure that all elements of the standards were acceptable to the group and would allow for the safe utilization of roads and drives. We also investigated materials used for dry hydrants and how to make them more reliable. The drafting basin design has been added using the design perfected by the USDA Natural Resource Conservation Service Americorps Vermont Fire Technical Support Team.

2. The standards were approved by the Fire and Rescue Department Officers and Members at their July 2, 1997 meeting. The Planning Commission adopted these standards at the September 2, 1997 meeting. These standards are to be used by the Planning Commission as "technical advice" under the Subdivision Bylaws and may be utilized as a reference when reviewing applications. The Zoning Administrator can also use it to encourage homeowners to provide driveways and turnarounds for emergency use. The Zoning Board of Adjustment can also use the standards.

3. Any suggestions for future improvements to these standards is invited.

CHARLOTTE VOLUNTEER FIRE AND RESCUE SERVICES, INC.

RECOMMENDED STANDARDS FOR DEVELOPMENTS AND HOMES

Approved by the department officers and members - July 2, 1997

Adopted by the Charlotte Planning Commission - September 2, 1997

CHARLOTTE VOLUNTEER FIRE AND RESCUE SERVICES, INC.

P. O. BOX 85
CHARLOTTE, VERMONT 05445

RECOMMENDED STANDARDS FOR DEVELOPMENTS AND HOMES

In order to minimize the adverse impacts on the Charlotte Fire and Rescue Services the following recommended standards must be met by any new or enlarged developments to provide for the adequate provisions for life safety services for residents and visitors to the proposed development:

ROADS:

DEVELOPMENT ROADS TO BE TOWN HIGHWAYS AND MAJOR ACCESS ROADS

Must conform to all Town Highway standards as outlined in Vermont Agency of Transportation standard A-76.

ACCESS ROADS

Access roads are roads that serve six (6) or more house sites or driveways. They are to be a minimum of 18 feet wide with 2 foot wide shoulders with a minimum of 18" of gravel with a 4" crusher run stone wearing surface. The usable road must be able to bear the weight of a 29,000 lb.(14 ½ ton) fire truck on all 18' of road. The maximum grade shall not be more than 8%. If the access road is not a through road it must terminate at a cul-de-sac of at least 40' radius or an 80' i.d. turning circle. Other suitable turn around designs such as "hammer heads" or "Y" turnarounds may be considered on a case by case basis. Tree limbs must be removed to a height of 12' above the finished grade of the road. Where an Access Road intersects with another road there shall be a turnaround big enough to accommodate three fire vehicles at one time (Approx. 1,600 sq.ft.). Refer to attached spec #3. Tree limbs are to be removed to a height of 12'. All 18' wide Access Roads longer than 800 feet will have vehicle turn-outs (12' wide x 35' long) near the half way point or every 800 feet.

DRIVEWAYS

Driveways serve 1 - 5 house sites or driveways. They shall be a minimum of 14' wide with a minimum of 18" of gravel with a 4" crusher run wearing surface. Driveways that are less than 800' long will have 14' of usable road with a minimum of 12 " of gravel. The usable road must be able to bear the weight of a 29,000 lb.(14 ½ ton) fire truck on all 14' of road. The maximum grade shall not be more than 8%. All driveway entrance intersections must be at least 18' wide for the first 20' of driveway, tapering to 14' to allow for emergency vehicles to turnaround. All Driveways 500' or more in traveled length shall have a turnaround at the house site large enough

to accommodate 3 emergency vehicles at one time (Approx. 1,600 sq.ft.). All Driveways longer than 800' will have vehicle turn-outs (12' wide x 35' long) near the halfway point or every 800'. Tree limbs must be removed to a height of 12' above the finished grade of the driveway.

EMERGENCY WATER SUPPLY

FIRE PONDS

All projects of six (6) or more house sites, units or driveways shall have a minimum of 90,000 gallons of usable water. Usable water does not include water lower than the dry hydrant intake pipe or water that will freeze in the winter. There must be a water source within 1,500' (measured along the road) of all dwellings in the development. Each water source will be served by a dry hydrant or drafting basin installed to the specifications of the Department. Applicant shall provide a plan and documentation by a Professional Engineer for the 90,000 usable water volume for each required pond design. The plan must show the dry hydrant and the pull off or access road.

If all the houses or units using the Access Road are required to and have residential fire sprinklers to NFPA Standards installed and central station fire/smoke alarms can be located more than 1,500' from a water source.

Any pressurized water systems, with hydrants, shall meet "10 States Standards".

CONNECTIONS:

DRY HYDRANT

Access to dry hydrants will either be within 8' of the road or on a 14' wide road or driveway. For hydrants within 8" of the road there will be a 12' wide x 35' long turn-out by the dry hydrant so that the pumper working at the hydrant will not block traffic. The Fire Department connection shall be 4 ½" dia. metal National Standard male thread with attached cap and will be 24" above grade and pointing toward the roadway. The hydrant will be protected by posts. (See attached design standard) The rise from the intake pipe to the Department connection will be no more than 10'. The riser and all elbows must be Schedule 40, or greater, welded steel pipe of 6-8" minimum diameter. The elbow must be set in a minimum of one yard of concrete. The intake pipe must match the diameter of the riser. It must have an approved strainer (Schlumberger Industries #224-6" or #224-8" or equivalent) at least 4' below the water surface and 2' off the bottom. The design and construction must be so that it will not freeze in winter. An approved typical design is attached as spec. #1. The water source and dry hydrant must be tested by the Department before it is deemed operational. It must be operational before any building permit is issued. It may be necessary to periodically dredge and/or control aquatic growth around the strainer and in the pond. Construction standards and details are on the attached diagram. The road to the dry hydrant must be plowed and maintained year-round. The hydrant shall be suitably marked and painted red.

DRAFTING BASIN

Access to a drafting basin will either be within 8' of the road or by a 14' wide road. There will be a 12' wide x 35' long turn-out by the drafting basin so that the pumper working at the drafting basin will not block traffic. An approved typical design is attached as spec. #2. The well tiles shall be a minimum 4' diameter. The intake pipe shall be 10" - 12" minimum and corrugated galvanized metal pipe or Schedule 80 PVC. The rise from the intake pipe to the cover will be no more than 10'. It must have an approved screen strainer at the pond end at least 4' below the water surface and at least 2' off the bottom. The design and construction must be so that it will not freeze in winter. Construction standards and details are on the attached diagram. The road/access to the drafting basin must be plowed and maintained year-round.

TESTING

The water source and dry hydrant/drafting basin must be installed and will be tested by the Department before it is deemed operational. It must be deemed operational by the Department before any building permits are issued.

MAINTENANCE

The maintenance of the dry hydrant/drafting basin and the water source will be the responsibility of the developer and/or the homeowners. The developer must inform all homeowners of this responsibility and include provisions in all deeds to this affect. It may be necessary to periodically dredge and/or control aquatic growth around the strainer and in the pond. The Department may notify owners of water sources of operational or maintenance requirements which may affect to proper operation of the water source. The Department may place "out of service" notifications on any hydrant which do not meet the requirements above.

PROJECT REVIEW PROCESS

Officers of Charlotte Fire and Rescue Services will work closely with the Town Planning and Zoning Office on a case by case basis to insure that the above standards and guidelines are followed, and that life safety services can be adequately provided to the maximum extent possible.

ATTACHMENTS:

1. Dry hydrant detail
2. Drafting Basin detail
3. Access Road Spec.

APPROVED BY DEPARTMENT OFFICERS AND MEMBERS - JULY 2, 1997

ADOPTED BY THE CHARLOTTE PLANNING COMMISSION - SEPT. 2, 1997

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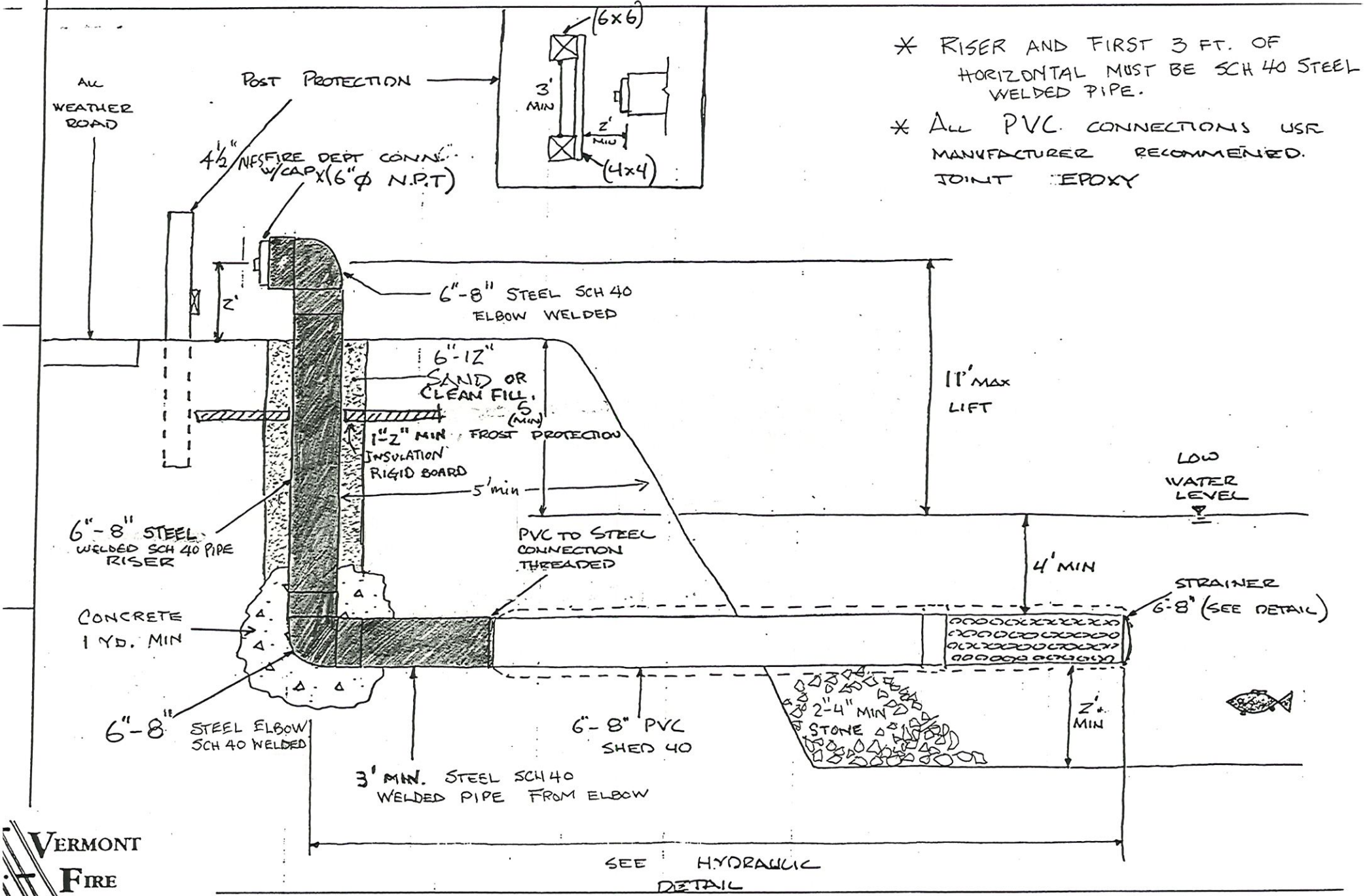
CHARLOTTE VOL. FIRE DEPT



* RISER AND FIRST 3 FT. OF HORIZONTAL MUST BE SCH 40 STEEL WELDED PIPE.
* ALL PVC CONNECTIONS USE MANUFACTURER RECOMMENED. JOINT EPOXY

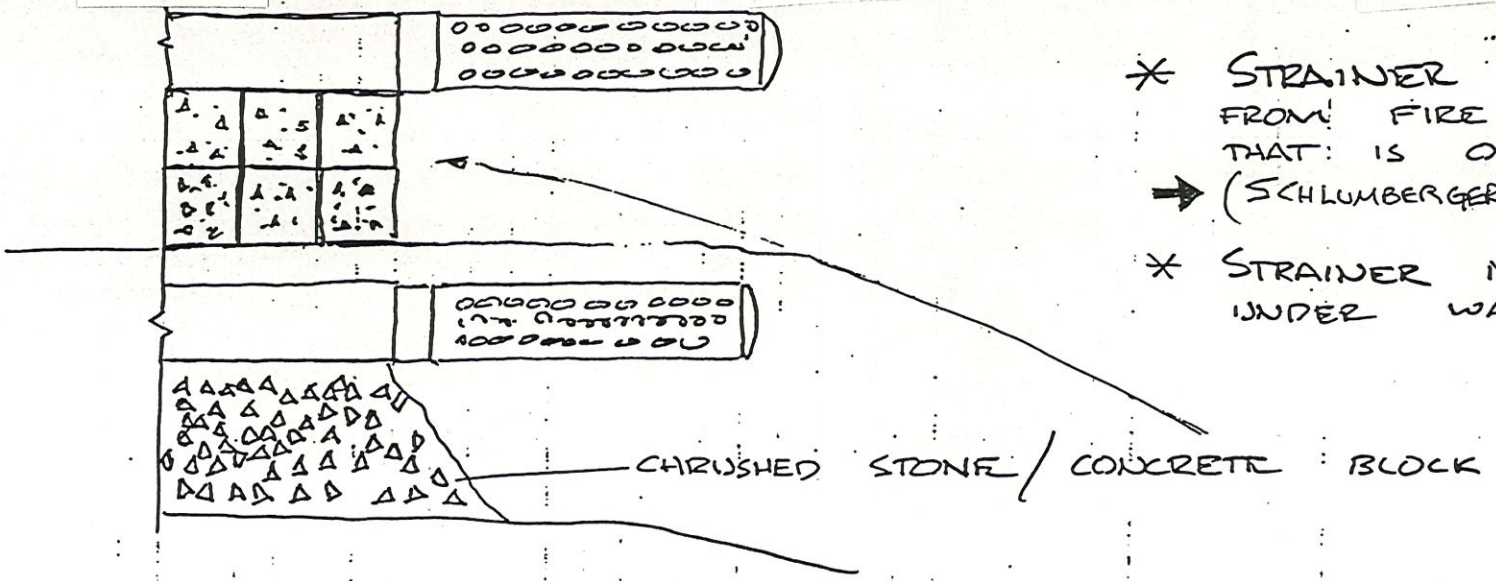
VERMONT FIRE TECHNICAL SUPPORT TEAM

PO Box 411 RT 66
Randolph, VT 05060
phone (802)728-9526
fax (802)728-5951
1-800-299-6408

REVISION DATE: 7-97

CHARLOTTE VOL. FIRE DEPT

STRAINER DETAIL



* STRAINER MUST BE BOUGHT FROM FIRE EQUIPMENT DEALER THAT IS OKAYED BY F.D.
→ (SCHLUMBERGER INDUSTRIES # 224-6 OR # 224-8)
* STRAINER MUST BE SUPPORTED UNDER WATER

7-97

HYDRAULIC DETAIL

1000 GPM

6" PIPE

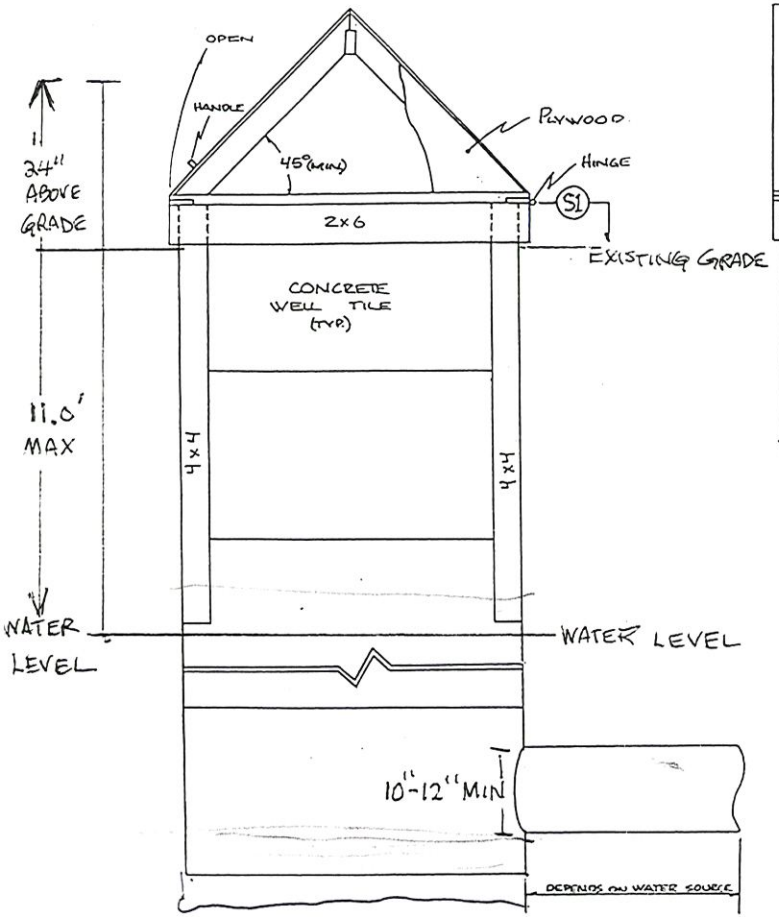
STATIC LIFT	ALLOWABLE LENGTH OF HORZ PIPE
5'	110
6'	90
7'	80
8	70
9	50
10	40
11	25
12	15
13	0
14	0
15	0

* WHEN LETHYD LIST DESIGNED TO SPECS DEPICTED ON SHEET 1. IF DESIGN LENGTH OF PIPE IS GREATER THAN THE ALLOWABLE LENGTH OF PIPE THAN PVC PIPE MUST BE 8" DIA.

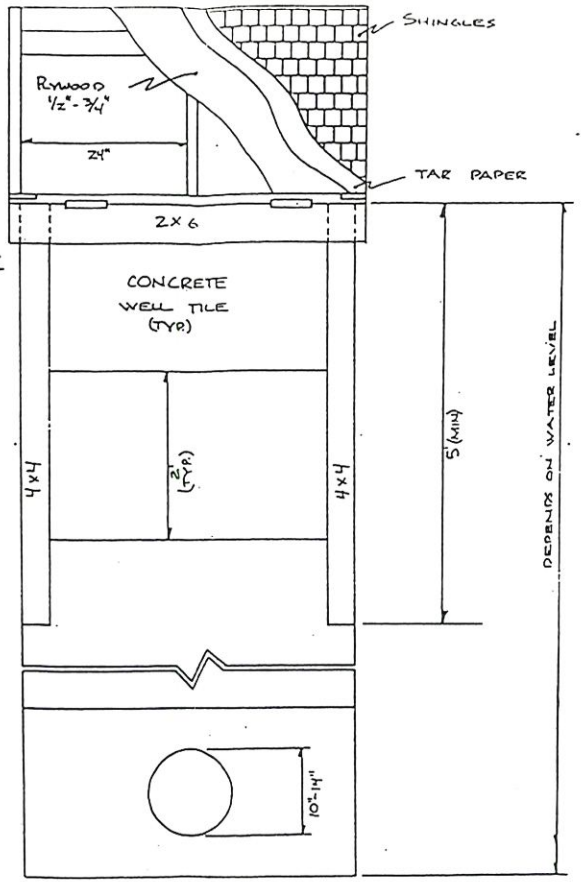
7-97

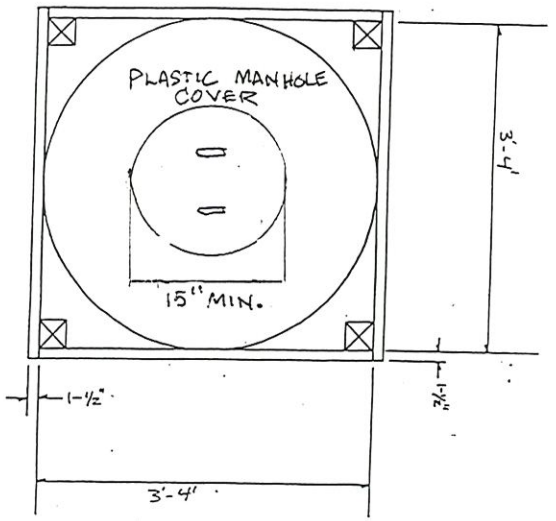
SIDE VIEW

NOT TO SCALE



FRONT VIEW





SECTION
S1
NOT TO SCALE

BILL of MATERIALS				
DESCRIPTION	NO	UNIT	UNIT COST	TOTAL
2"x4"x10'	4	EA	3.12	13.00
4"x4"x10' (TREATED)	2	EA	10.50	21.00
2"x6"x10' (TREATED)	2	EA	7.95	16.00
PLYWOOD 4'x8'x 3/4"	2	EA	15.00	30.00
ASPHALT SHINGLES	50	FT^2	0.32	16.00
TAR PAPER	50	FT^2	0.06	3.00
			TOTAL	100.00

THE LUMBER IS 2"x4"s'
S OTHER WISE NOTED

OF MATERIALS ONLY
DES LUMBER · CONCRETE
CULVERT ARE PRICED
DESIGN PROFILE

DRAFTING BASIN
TYPICAL
DESIGN

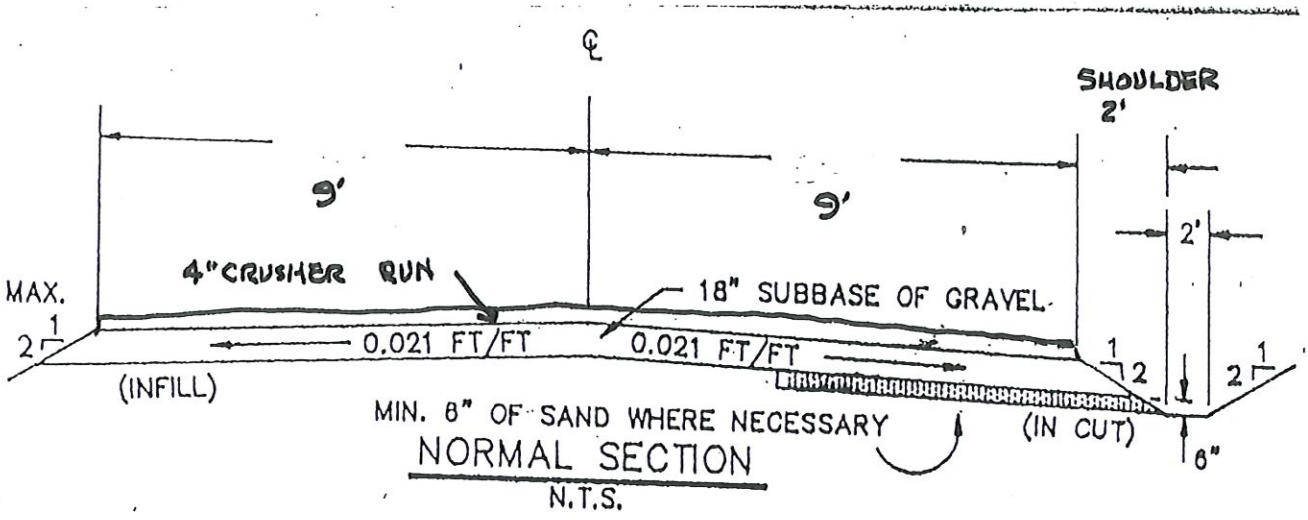
USDA NATURAL RESOUCE CONSERVATION SERVICE
AMERICORPS VT. FIRE TECH. SUPPORT TEAM

DRAWN BY: M. CALCAGNI

REVIEWED BY:

DATE: 5-11-05 SHEET

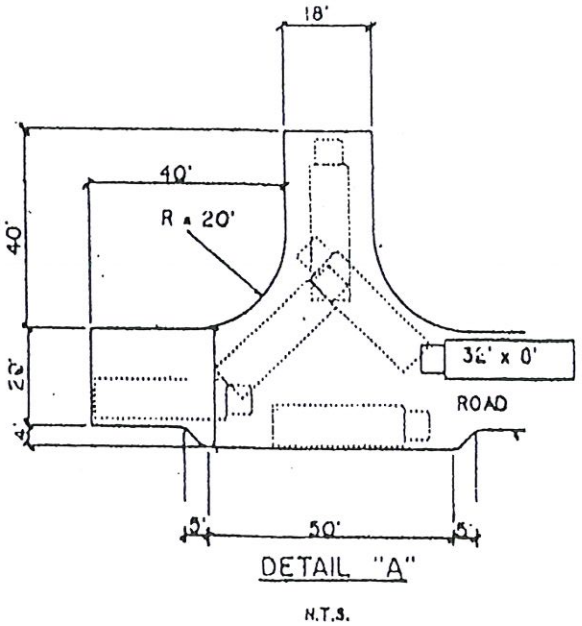
7-97



NORMAL SECTION

N.T.S.

NOTE: DRIVEWAYS TO BE 14' WIDE, WITH 18' WIDE ENTRANCES.



DETAIL "A"

N.T.S.

ACCESS ROAD SECTION

LEGEND

7-97