

CEL 774 CONSTRUCTION PRACTISES

*Concrete: Production
(Form work)
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General Outline

- ” **Definitions**
- ” **Mass Concrete**
- ” **Cold weather problem**
- ” **Concreting in cold weather**



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Definitions: Form work

Complete system of temporary structure built to contain fresh concrete so as to form it to the required shape and dimensions and to support it until it hardens sufficiently to become self-supporting. Formwork includes the surface in contact with the concrete and all necessary supporting structure.



Definitions

Mould A frame for casting, precast concrete units

Scaffold (Scaffolding)

A temporary structure for gaining access to higher levels of the permanent structure during construction

Centering (Centering)



Definitions

Centering (Centering)

It is a temporary supporting structure to a soffit. It is the specialized formwork used in the construction of arches, shells space structure where the entire false-work is (struck or de-centred) as a unit to avoid introducing injurious stress in any part of structure.



Definitions

Falsework

(a) Falsework is the temporary structure erected to support work in the process of construction. It is composed of shores, formwork for beams or slabs (or both) and lateral bracing.

(b) That part of formwork, which supports the forms usually for a long structure, such as a bridge.



Definitions

Form (Shutter)

(a) That part of formwork, which consists of the sheeting and its immediate supporting or stiffening members.

(b) A temporary structure or mould for the support of concrete while it is setting and gaining sufficient strength to be self-supporting.



GOOD FORMWORK

- *HOW FORMWORK CAN BE ERECTED AND DE-SHUTTERED FAST.*
- *HOW GOOD CONCRETE QUALITY AND SURFACE FINISH CAN BE ACHIEVED.*
- *WHAT IS THE OPTIMUM STOCK OF FORMWORK REQUIRED FOR THE SIZE OF WORK FORCE, THE SPECIFIED TIME SCHEDULE AND FLOW OF MATERIALS.*
- *HOW SAFETY CAN BE IMPROVED FOR THE SITE PERSONNEL.*



GOOD FORMWORK

- *WHAT IS THE OVERALL COST SAVINGS THAT CAN BE ACHIEVED USING THE RIGHT TYPE OF FORMWORK*



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Safety

- . ENSURED IF,***
 - " COMPONENTS ARE LIGHT IN WEIGHT FOR HANDLING AND PLACING***
 - " LOOSE OR HANGING COMPONENTS ARE MINIMAL***
 - " MINIMUM OPERATIONS ARE INVOLVED DURING EACH REPETITION***
 - " INDIVIDUAL COMPONENTS ARE SELF STANDING***
 - " LESS MAKING IS INVOLVED AT SITE***



Safety

***" SYSTEMS FACILITATES FIXING AND
REMOVAL AT EACH LOCATION
. WITHOUT THE USE OF ANY
SOPHISTICATED TOOLS AND TACKLES
" SYSTEM HAS PROVISION FOR FIXING
WORKING / CONTROL
. PLATFORMS.***



Wall form

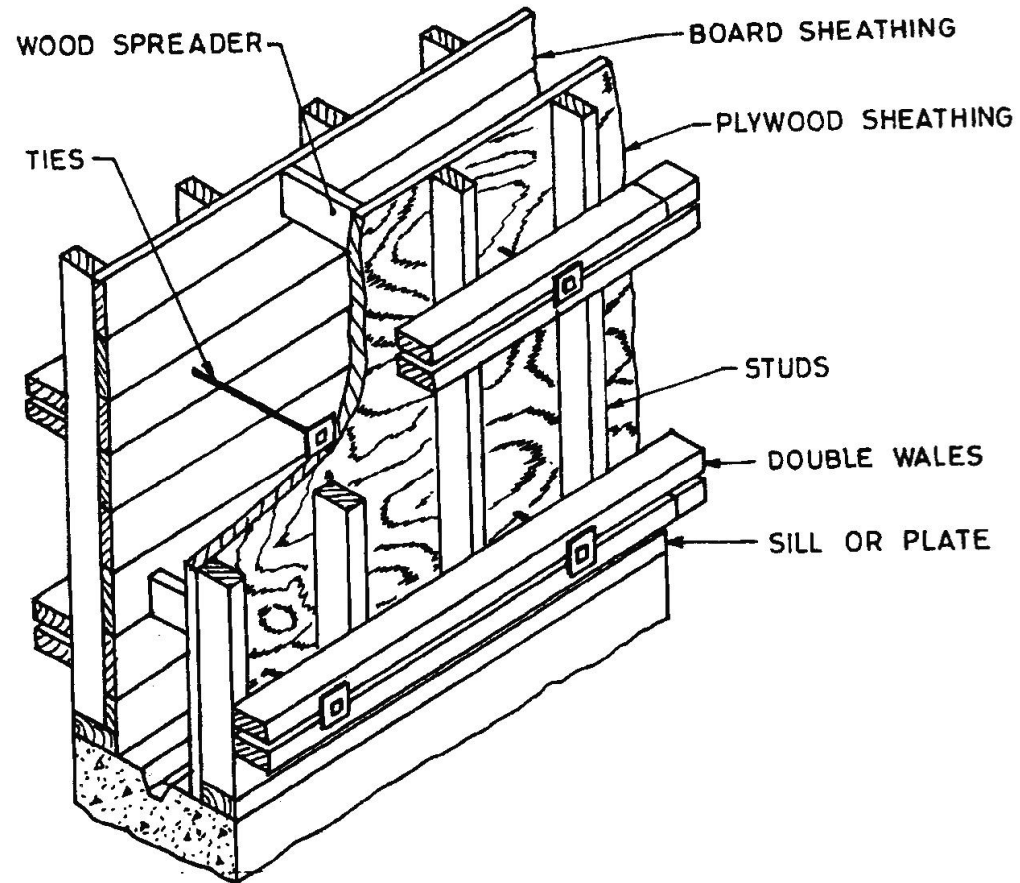


FIG. 1 TYPICAL WALL FORM SHOWING WALL TIES



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BEAM

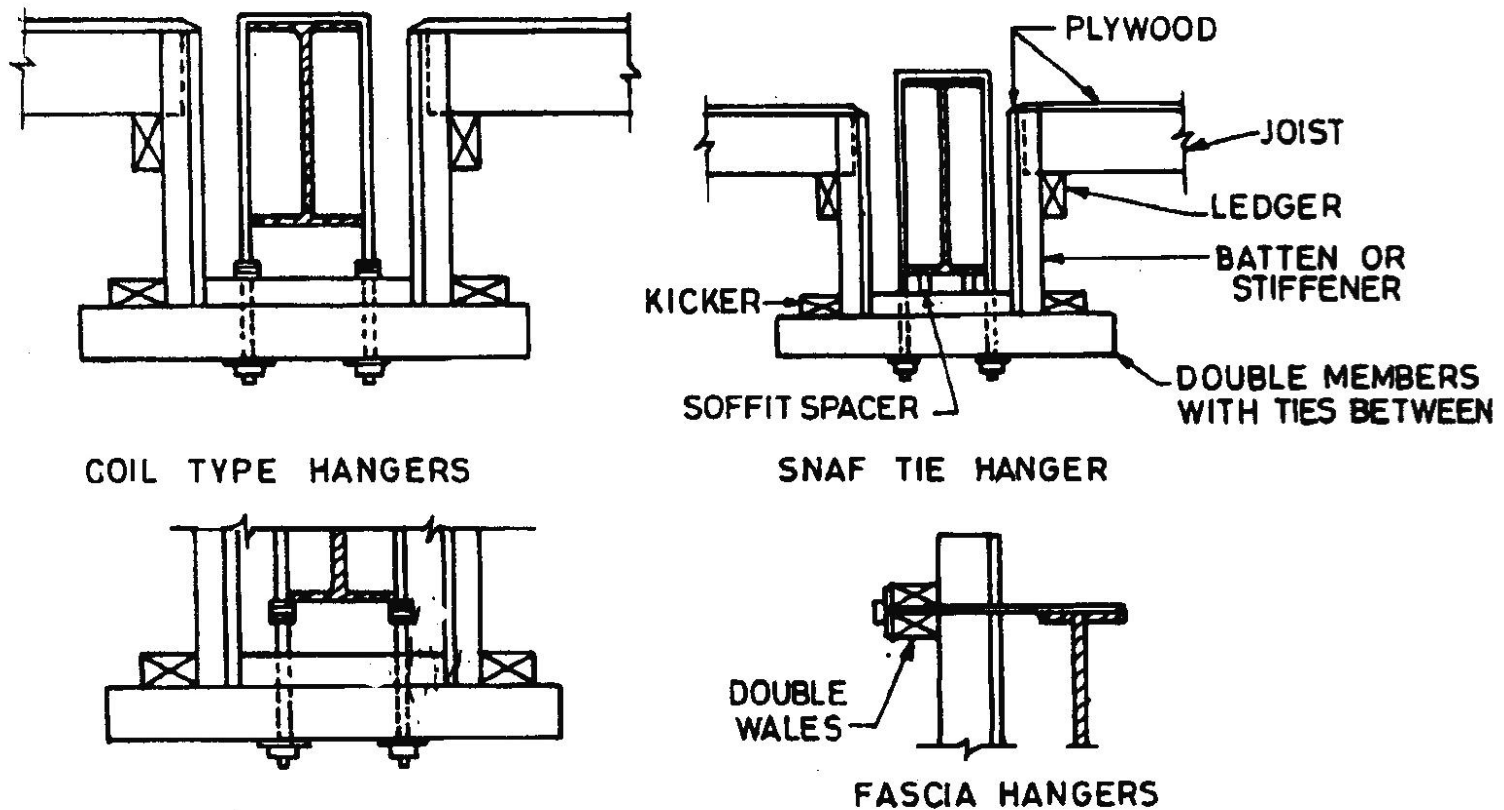


FIG. 2 TYPICAL BEAM ENCASEMENT FORMS, SHOWING BOTH COIL AND SNAP TYPE HANGERS



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Columns

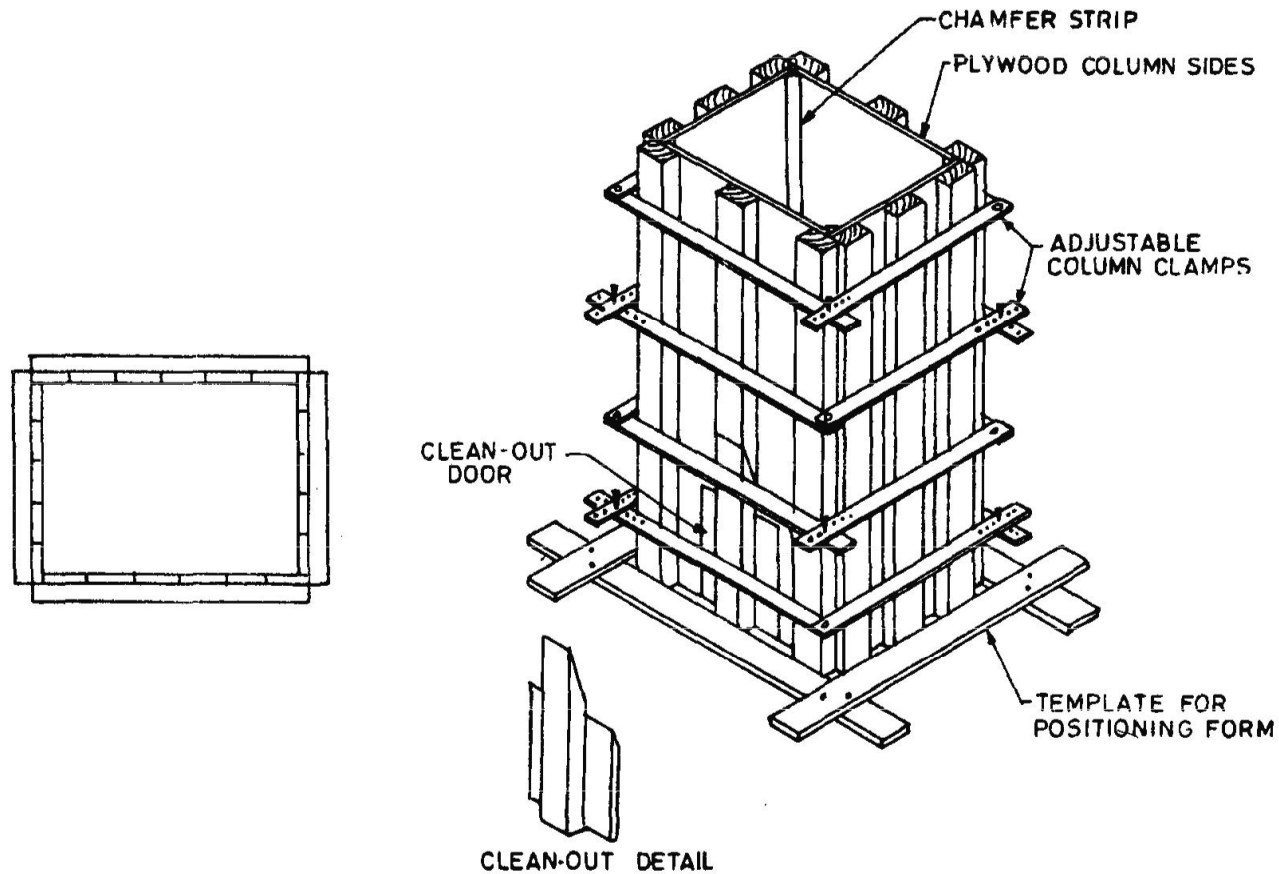


FIG. 6 TYPICAL CONSTRUCTION OF HEAVIER COLUMN



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Stud walls

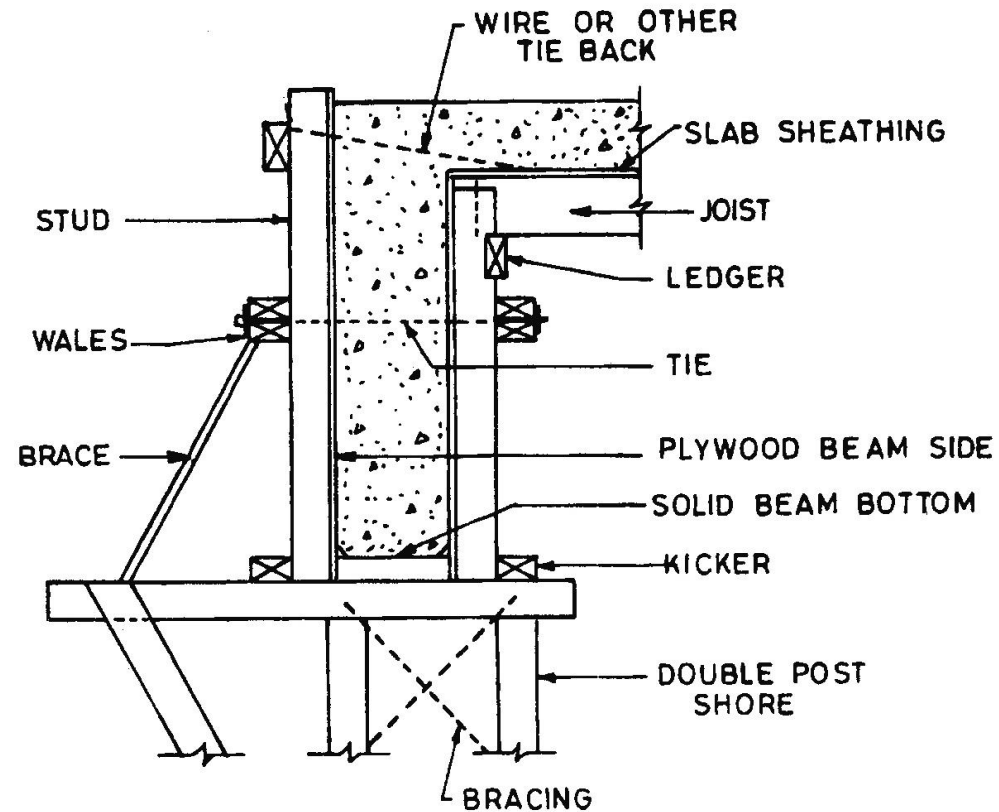


FIG. 4 TYPICAL STUD AND WALE FORMING FOR A SPANDREL BEAM WITH BRACING



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Slabs

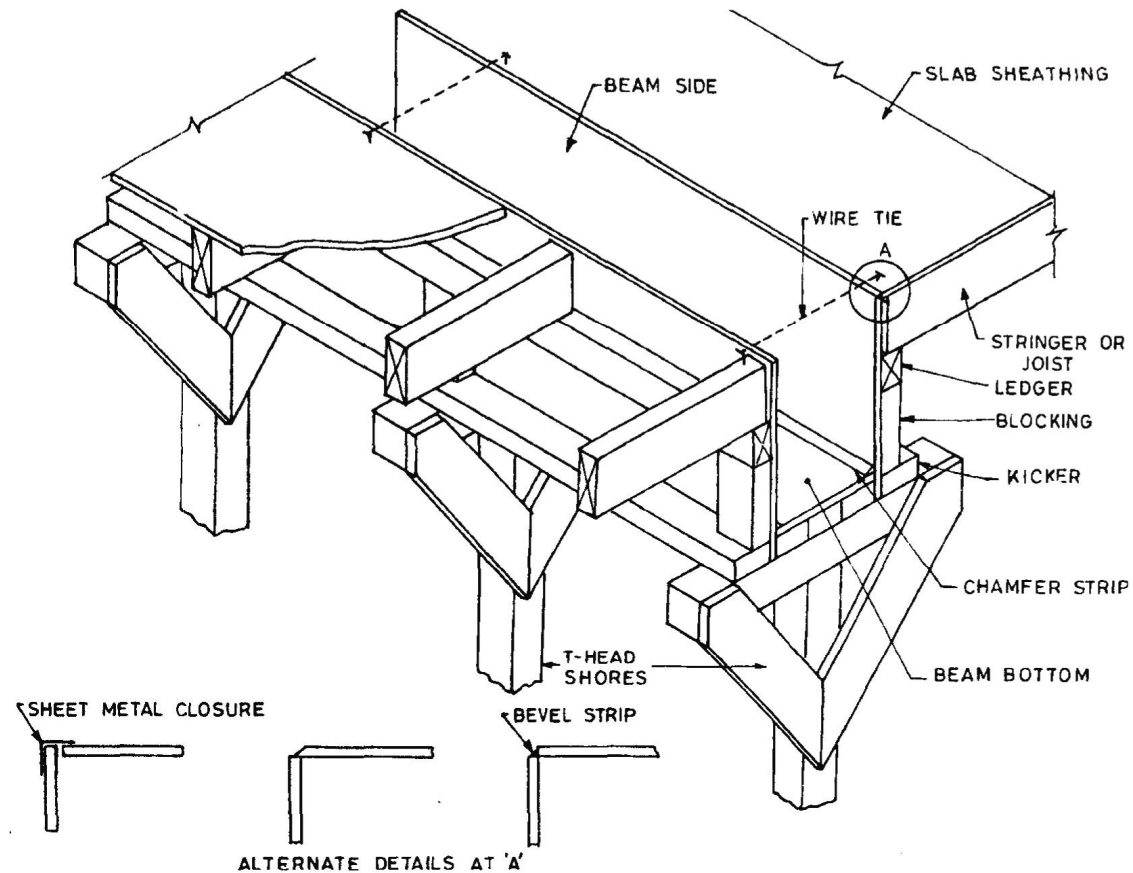


FIG. 7 TYPICAL COMPONENTS OF BEAM FORM WORK WITH SLAB FRAMING IN



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Slabs

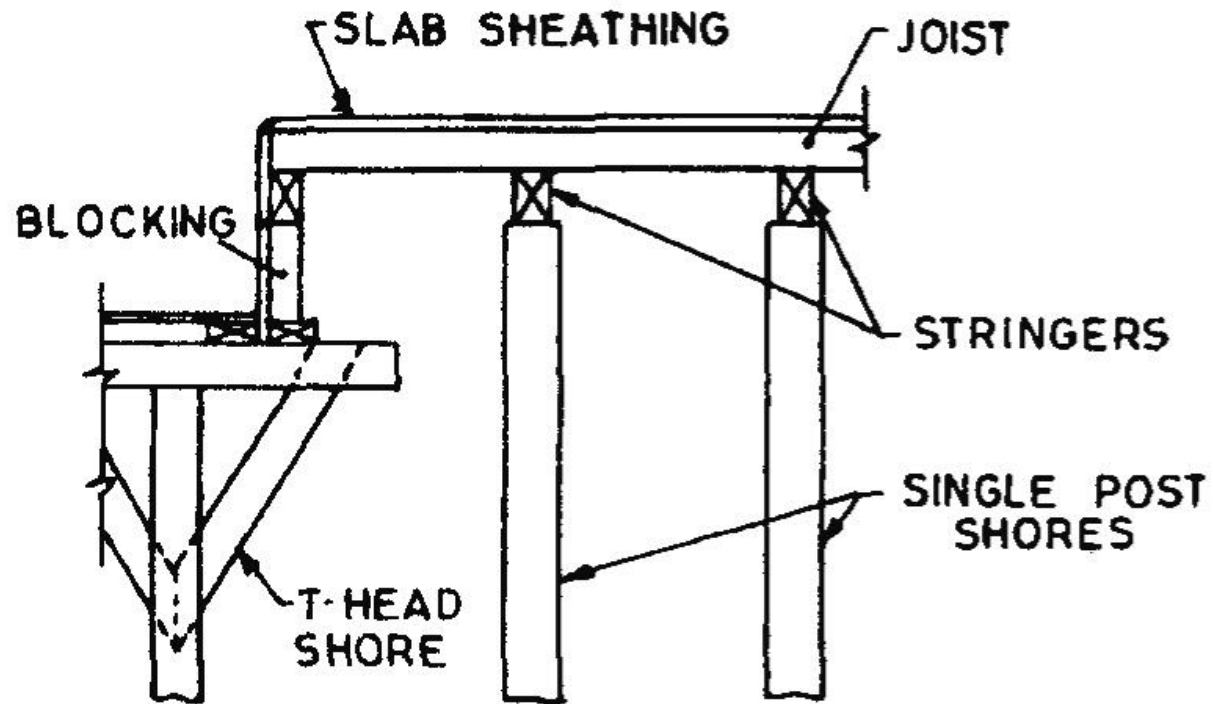


FIG. 8 TYPICAL SLAB FORM RESTING ON BEAM LEDGER AND STRINGERS



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ECONOMY

- . During design and sizing of members***
 - . Economy is all about achieving number of repetition***
 - . Choose the size that gives maximum repetition***
 - . Preferable to have same size of column and beam throughout***
 - . Symmetric and standardization***
- . Economy in making, erecting, and stripping forms***
- . Economy in formwork and overall economy***



***THANK YOU FOR
HEARING***



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