



*Week 5*  
**Project Work Plan**

**457.307 Construction Planning and Management**  
Department of Civil and Environmental Engineering  
Seoul National University

**Prof. Seokho Chi**

[shchi@snu.ac.kr](mailto:shchi@snu.ac.kr)

건설환경공학부 35동 304호

# Project Work Plan

---

- **Identifies the work to be done**
  - Who will do it, When
  - Costs
- **Basic components**
  - Overview/Directory
    - Project title, objective scope, organization chart
  - Tasks
    - List of tasks, groupings
  - Schedule
    - Sequencing and interdependencies, durations, start/finish
  - Budget
    - Labor hours and staff costs, billing approach
  - Measurement/Control
    - Accomplishment of tasks, completion of work package

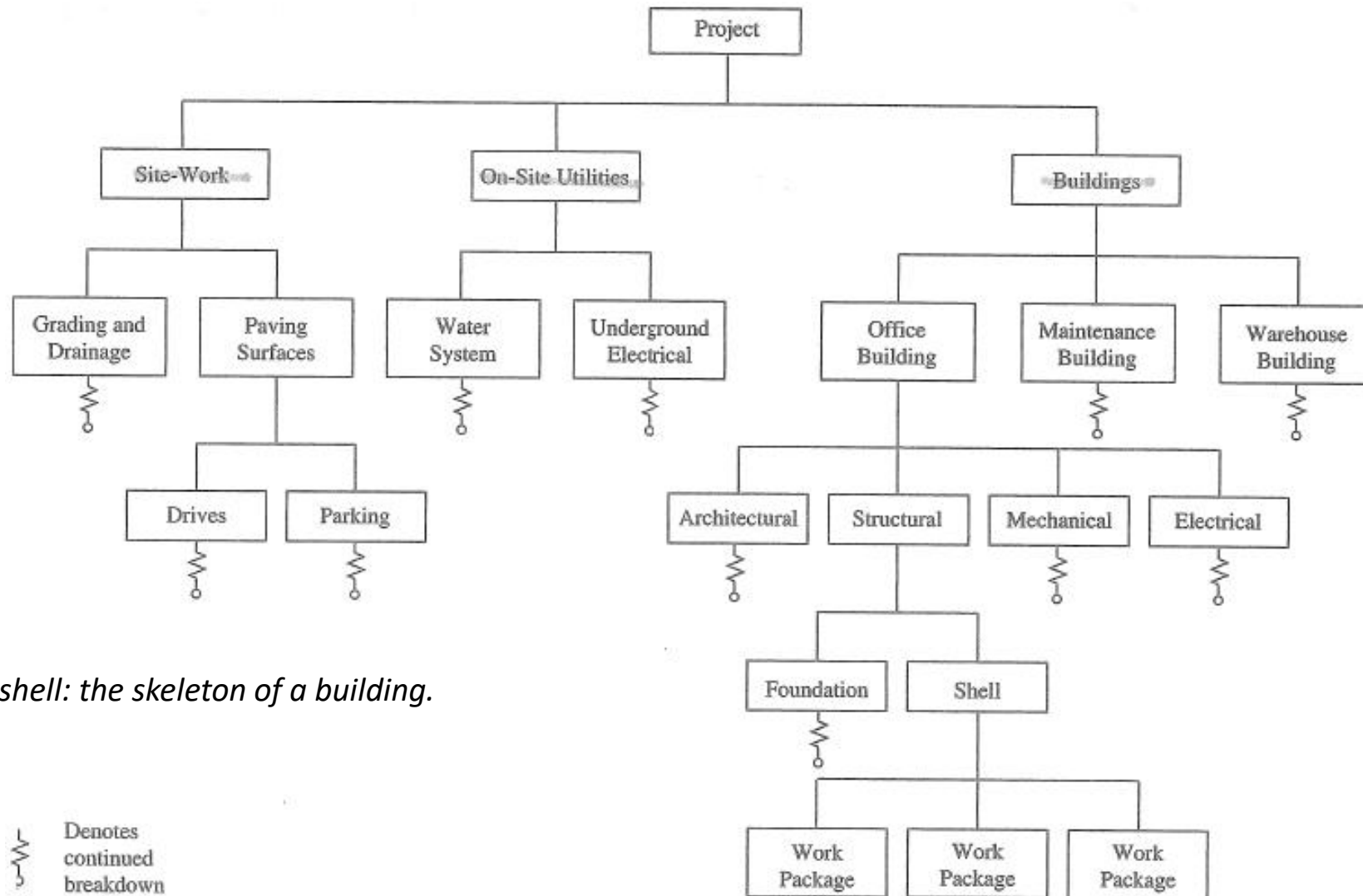
# Work Plan Development

---

- 1. PM initial duty is to review sponsoring organization material regarding**
  - Project scope
  - Budget
  - Schedule
- 2. Meet with sponsor to determine requirements and priorities for**
  - Quality
  - Scope
  - Time
  - Cost
  - Determine owner's level of involvement
- 3. Develop work breakdown structure (WBS)**
  - Define work to be performed
  - Identify needed expertise
  - Select project team
  - Establish project schedule and controls

# Work Breakdown Structure (WBS)

- Divides the project into identifiable part that can be managed



# Work Breakdown Structure (WBS)

---

- Divides the project into identifiable part that can be managed
- Concept of WBS is simple: to manage the whole project must control each of the parts
- All the work contained within the WBS is to be identified, estimated, scheduled, budgeted, and controlled
  - Identifying work, compiling the budget, and developing an integrated schedule
- Shown in graphical display to organize and subdivide the total scope of work

# Work Breakdown Structure (WBS)

---

- **Project work structured into WBS elements must be:**
  - Definable: easily described and understood
  - Manageable: meaningful unit of work where specific responsibility can be assigned
  - Estimateable: duration and costs can be estimated
  - Independent: minimum interface with or dependence on other ongoing elements
  - Integratable: integrates with other project work elements
  - Measureable: has start and completion dates and interim milestones
  - Adaptable: flexible so the addition/elimination of work scope can be accommodated

# Work Breakdown Structure (WBS)

---

- **Characteristics of WBS**
  - Most commonly produced in the form of a table or chart
  - Procedure in the associated work flow is used to produce this work product
  - Progresses downward from the general to the specific
  - Provides a framework for turning project objectives into specific deliverables

# Work Breakdown Structure (WBS)

---

- **Typical levels of WBS**

- Level 1: Total program
  - Level 2: Project
  - Level 3: Task
  - Level 4: Subtask
  - Level 5: Work package
  - Level 6: Level of effort
- Managerial Levels**
- Technical Levels**
- 

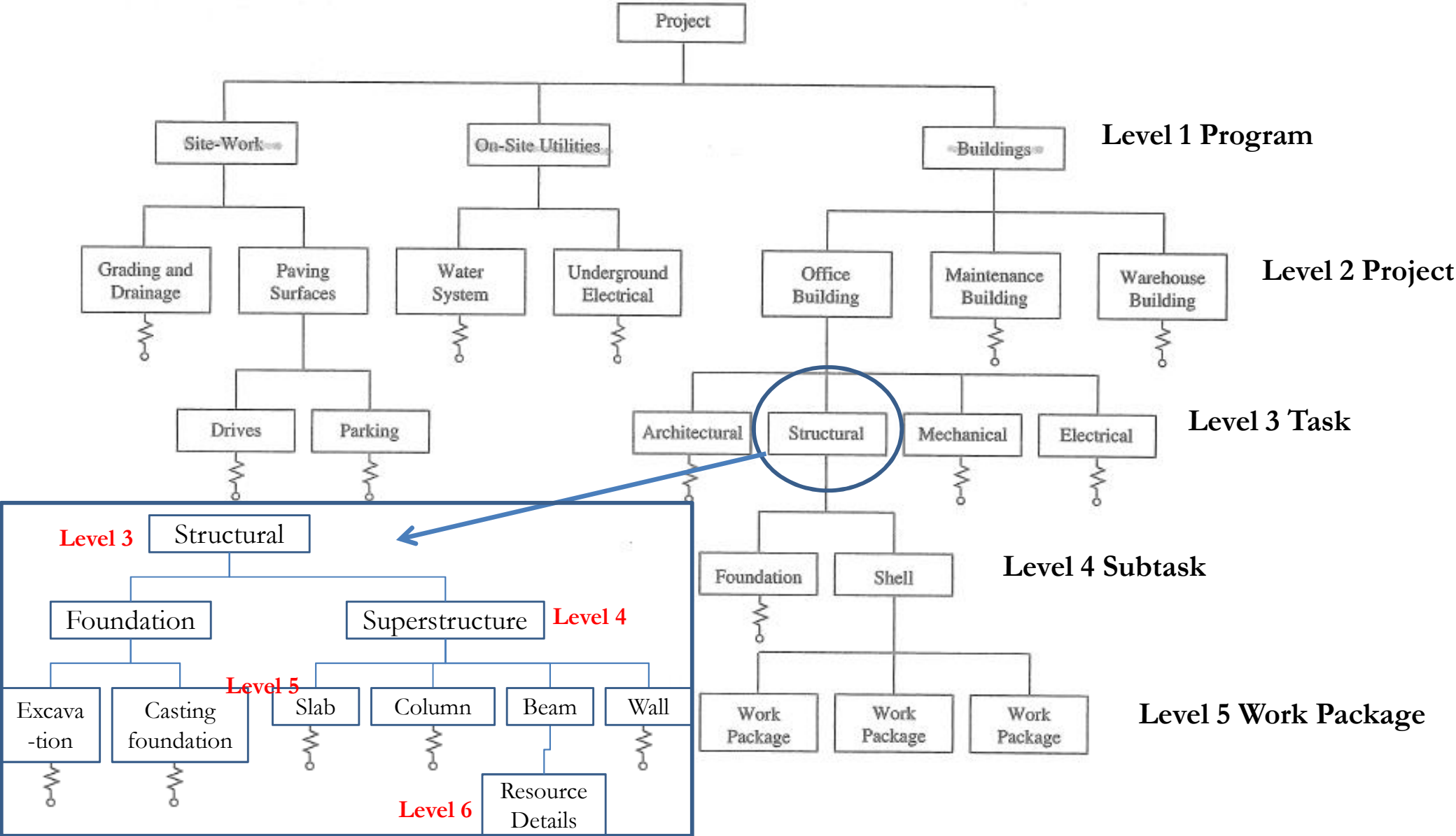
- **Upper 3 levels normally specified by the owner**

- Level 1: authorization and release of work
- Level 2: budgets prepared
- Level 3: schedules prepared

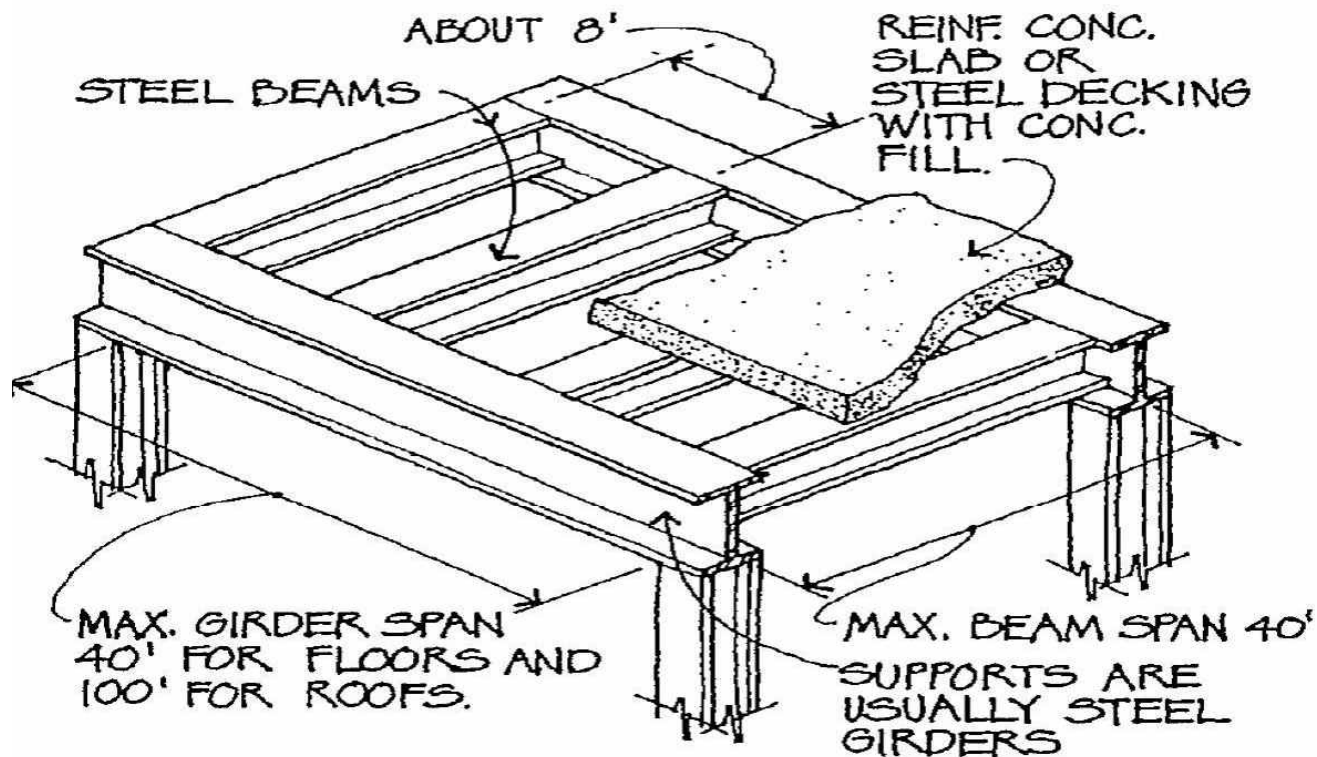
- **Lower 3 levels are generated by the contractor**



# Work Breakdown Structure (WBS)



# Superstructure



## STEEL BEAM AND GIRDER SYSTEM

- BEAMS AND GIRDERS MAY BE PART OF MAIN SKELETON FRAME
- COMPOSITE ACTION BETWEEN BEAM AND SLAB POSSIBLE
- ECONOMICAL FOR MOST BUILDING LOADS.

A girder is the primary horizontal member carrying loads from other beams and slabs connected to it. That is a girder has other beams connecting to it on its sides. Typically beams do not have other beams connecting to it but generally have only slabs transferring the loads to it.

# WBS

- **Work Package**
  - Lowest level in the WBS
  - Baseline for scheduling, tracking, cost control

**Work Package**

Title: \_\_\_\_\_

WBS Code: \_\_\_\_\_

**1. Scope**

Required Scope of Work: \_\_\_\_\_

\_\_\_\_\_

Services to Be Provided: \_\_\_\_\_

\_\_\_\_\_

Services not included in this Work Package, but included in another work package: \_\_\_\_\_

\_\_\_\_\_

Services not included in this Work Package, but will be performed by: \_\_\_\_\_

\_\_\_\_\_

**2. Budget**

Personnel Assigned to Job	Work-Hours	-\$-Cost	CBS Code Acct.	Computer Services		
				Type	Hours	-\$-Cost
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
Total Work-Hours = _____			Personnel Costs = \$ _____			
Computer Hours = _____			Computer Costs = \$ _____			
		Travel Expenses	Reproduction Expenses	Other Expenses		
		_____	_____	_____		= \$ _____
		Total Budget = \$-Labor + \$-Computer + \$-Other = \$ _____				

**3. Schedule**

OBS Code	Work Task	Responsible Person	Start Date	End Date
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Work Package: Start Date: \_\_\_\_\_ End Date: \_\_\_\_\_

Additional Comments: \_\_\_\_\_

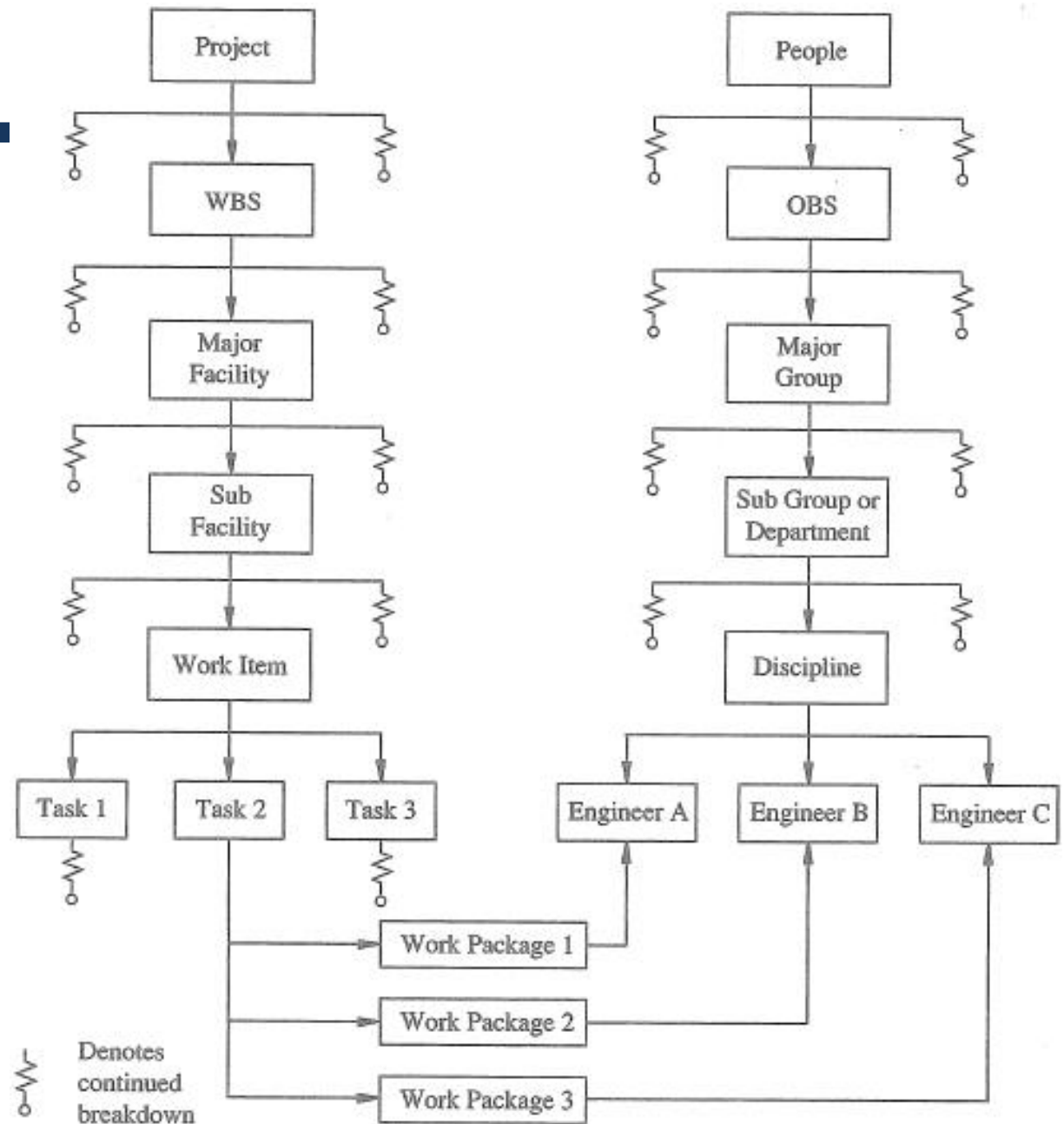
\_\_\_\_\_

Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

# WBS vs OBS

- WBS: define the work to be accomplished
- OBS (Organizational Breakdown Structure)
  - Define who is responsible for performing the work



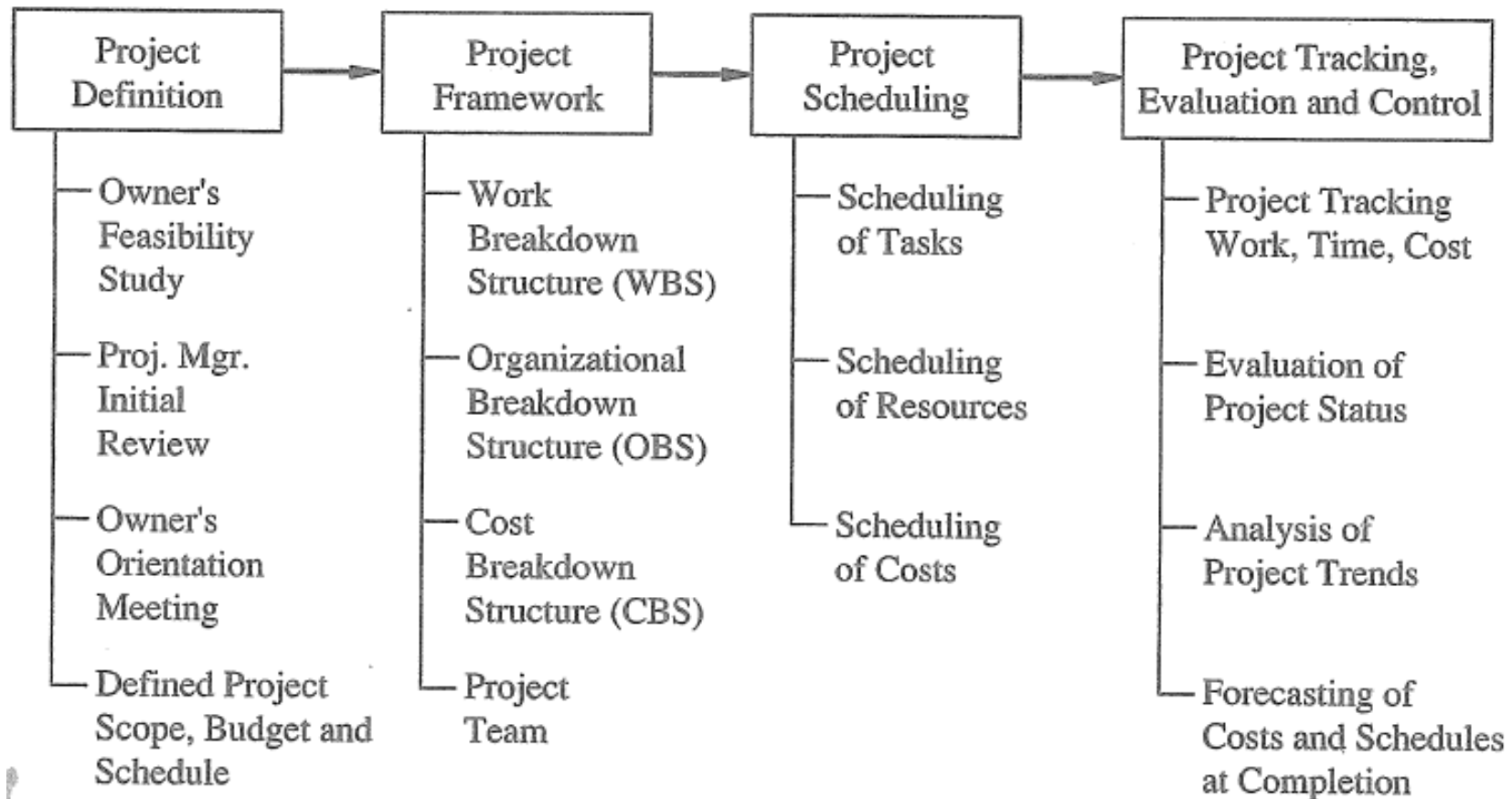
# Good work packages

---

- **Connects the abstract (schedules, production analysis) with the physical**
- **To link schedules into production, consider**
  - A complete design
  - A list of materials to be installed
  - A specific area to be worked on
  - A start and end date (handover dates)
  - A materials handling plan

# Phases of Development of Work Plan

---



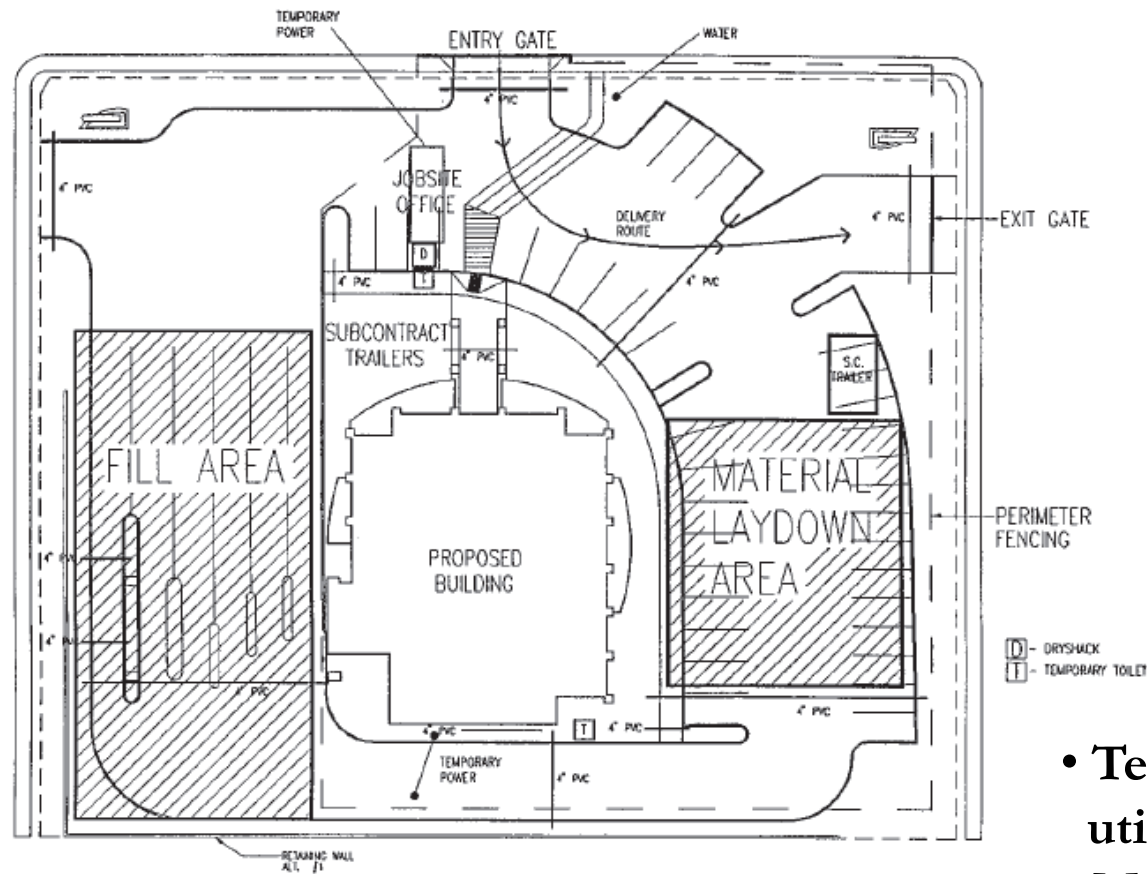


# Site Layout

---

- **Definition:**
  - Assigning areas to staging, materials storage, and shared resources (e.g., cranes)
- **Site layout is:**
  - Dynamic; can cause access conflicts
  - Should be considered with work packaging when developing construction plan
  - Site layout (big picture) constraints, then
    - Work packaging <--> Site layout (micro analysis)

# Jobsite Layout



SITE LAYOUT PLAN

SCALE: 1" = 50'-0"

- Temporary facilities, power and utilities
- Material storage and handling
- Equipment location
- Vehicle and personnel routes, access and exit



# Jobsite Layout Overview

---

- **Jobsite layout plan**
  - Plan for temporary facilities, material movement, storage, and handling
- **Areas of consideration**
  - Labor productivity
  - Material handling
  - Equipment constraints
  - Site constraints
- **Jobsite layout plan aspects**
  - Jobsite space allocation
  - Jobsite access
  - Material handling
  - Worker transportation
  - Temporary facilities
  - Jobsite security
  - Signage and barricades

# Labor Productivity

---

- **Travel time: non-productive time elements**
  - From gate to worksite
  - To sanitary facilities (for toilet, gas, water, etc.)
  - Coffee breaks and lunch
  - Moving material and asking questions
  - *Need to be minimum!*

# Group Assignment

---

Create schematic diagrams (plan and elevation) of your project.

This can be a real design if you desire.

Have team members **“Red-line”** the diagrams with areas of concern.