



West County Connectors

Glossary of Terms

Below is a list of terms and phrases that may be helpful in deciphering “constructions speak.”

Abutment – An abutment is, generally, the point where two structures or objects meet. An abutment is an engineering term that describes a structure located at the ends of a bridge, where the bridge slab adjoins the approaching roadway. This structure is basically a retaining wall designed to carry the loading conditions present in bridge structures.

Annual Average Daily Traffic (AADT) – the average 24 hour volume, being the total number during a stated period divided by the number of days in that period. Unless otherwise stated, the period is equivalent to a year.

Hot Mix Asphalt Pave (HMA Pave) – Place Asphalt Concrete on the roadways finished grade. The surface where the tires touch the road

Auxiliary Lane – The portion of the roadway for weaving, truck climbing, speed change, or for other purposes supplementary to through traffic movement.

Backhoe - A backhoe, also called a rear actor or back actor, is a piece of excavating equipment or digger consisting of a digging bucket on the end of a two-part articulated arm. They are typically mounted on the back of a tractor or front loader. The section of the arm closest to the vehicle is known as the boom, and the section which carries the bucket is known as the dipper or dipperstick (the terms "boom" and "dipper" having been used previously on steam shovels). The boom is attached to the vehicle through a pivot known as the kingpost, which allows the arm to slew left and right, usually through a total of around 200 degrees. Modern backhoes are powered by hydraulics.

CIDH piles – Cast in Drilled Hole Pile. After a hole is drilled to the specified length and diameter, reinforcing steel is placed and concrete is then poured into the hole.

CISS pile - A CISS pile is characterized by an open-ended steel cylinder shell that is driven into the soil. The soil is then removed and is filled with concrete after reinforcement is placed.

Columns - A column or pillar in architecture and structural engineering is a vertical structural element that transmits, through compression, the weight of the structure above to other structural elements below. For the purpose of wind or earthquake engineering, columns may be designed to resist lateral forces. Columns are frequently used to support beams or arches on which the upper parts of walls or ceilings rest.



Concrete piles - concrete piles are typically made with steel reinforcing and prestressing tendons to obtain the tensile strength required, to survive handling and driving, and to provide sufficient bending resistance.

COZEEP – The Construction Zone Enhancement Program is a statewide interagency agreement between Caltrans and the California Highway Patrol (CHP). It enables Caltrans to hire CHP officers and vehicles to patrol project construction zones. COZEEP is used to increase traffic enforcement above normal levels in situations where traffic problems are anticipated, to reduce the potential for traffic accidents within a construction zone, and to reduce speeds to the posted speed limits. CHP officers may be used to slow down or assist in stopping or directing traffic to enable necessary breaks in traffic for critical movements of the Contractor's equipment and operations. During the erection or removal of bridge falsework over traffic lanes, or when traffic will be switched onto a detoured route are examples of when CHP officers may be used to control traffic.

Crane - A crane, can also be known as a bridge crane, overhead crane is a type of machine used for lifting, generally equipped with a hoist (device) or winder (also called a wire rope drum), wire ropes or chains and sheaves, that can be used both to lift and lower materials and to move them horizontally. It uses one or more simple machines like a hoist to create mechanical advantage and thus move loads beyond the normal capability of a human. Cranes are commonly employed in the transport industry for the loading and unloading of freight, in the construction industry for the movement of materials and in the manufacturing industry for the assembling of heavy equipment.

Traffic lane numbers- The California Department of Transportation (Caltrans) assigns the numbers from left to right (excluding carpool lane, begin numbering at first lane after). The far left passing lane is the number 1 lane. The number of the slow lane (closest to freeway on- and off-ramps) depends on the total number of lanes, and could be anywhere from 2 to 6 (e.g. #1 lane is the inside lane, excluding the carpool lane). Lanes on the road read like a book, start from the center divider and count out toward the on- and off-ramps.

EIR / EIS (Environmental Impact Report / Environmental Impact Statement) - these reports are required of government agencies to identify the significant environmental impacts of their actions and to avoid, minimize or mitigate any adverse effects; and EIR / EIS explores the proposed project's environmental impacts on a broad range of topics including air quality, public health, communities, noise, visual disruption, soil, water pollution, cultural resources and biological resources; finally EIR / EIS reports also discuss how to avoid, minimize or mitigate any adverse impacts that might be discovered in the analysis process.



Excavator- excavators are heavy construction equipment consisting of a boom, bucket and cab on a rotating platform (known as the "house"). The house sits atop an undercarriage with tracks or wheels. All movement and functions of the excavator are accomplished through the use of hydraulic fluid, be it with rams or motors. Excavators are used to:

- Driving piles, in conjunction with a Pile Driver
- Digging of trenches, holes, foundations
- Material handling
- Brush cutting with hydraulic attachments
- Forestry work
- Demolition
- General grading/landscaping
- Heavy lift, e.g. lifting and placing of pipes
- Mining, especially, but not only open-pit mining
- River dredging

Falsework - Falsework consists of temporary structures used in construction to support spanning or arched structures in order to hold the component in place until its construction is sufficiently advanced to support itself. Falsework also includes temporary support structures for formwork used to mould concrete to form a desired shape and scaffolding to give workers access to the structure being constructed.

Footing – In architecture, footing is the supporting base or groundwork of a structure. It could also be known as the footer of a wall or a monument.

Force account- Force account is the payment method used for extra work if the contractor and the owner cannot agree on a unit price or lump sum amount, or if those methods are impracticable. Force account payments cover labor, materials, and equipment. They may also cover other miscellaneous expenses.

Form liner - Form liners are the liners used in the preparation of designs on concrete walls. The use of form liners oftentimes results in more attractive walls for highways, neighborhoods, beaches and parks. Form liners come in many different shapes and designs, and can produce a variety of different results on concrete.

Breaker – also known as a hammers or a hoe ram; a breaker is a powerful percussion hammer fitted to an excavator for demolishing concrete structures or rocks. It is powered by an auxiliary hydraulic system from the excavator, which is fitted with a foot-operated valve for this purpose. Additionally, demolition crews employ the hoe ram for jobs too large for jack hammering or areas where blasting is not possible due to safety or environmental issues.



Hot mix asphalt (HMA) – formerly known as asphalt concrete (AC). HMA is a graded asphalt concrete mixture (aggregate and asphalt binder) containing a small percentage of voids which is used primarily as a surface course to provide the structural strength needed to distribute loads to underlying layers of the pavement structure.

Roadway Joint Seal – a joint seal is where joints are sealed into concrete pavement. Joint sealing is usually done to prevent water from below the concrete from entering to the sub structure of the pavement. If water does reach the base of the pavement, the pavement will soften and become unstable.

K-rail – also known as Jersey barrier; K-rail is a modular concrete barrier employed to separate lanes of traffic. It is designed to both minimize vehicle damage in cases of incidental contact while still preventing crossover in the case of head-on accidents.

Liquidated Damages - Liquidated damages are damages that are paid by one party to the opposite party because the party failed to fulfill the requirements made in the contract that both parties agreed on. The damages must be paid for unless there was a misunderstanding or a fraud.

Lost deck – Forms which are used to support the bridge deck during the bridge deck concrete pour. Once the deck is poured, these forms are not recoverable hence “lost deck”

Median – the median is the portion of a divided highway separating the traveled ways for traffic in opposite directions.

MBGR - metal beam guard rail

MSE wall / panel – The MSE wall system consists of the original ground, concrete leveling pad, wall facing panels, coping, soil reinforcement, select backfill and loads and surcharges. All of these items have an effect on the performance of the MSE wall and are taken into account in the stability analysis. A change in any of these items could have a detrimental effect on the wall.

NADAR – Noise Abatement Decision Report

Overhead sign structures – Permanent signs that are either in the median, span the width of the Freeway or on the shoulder.

PCC joint – Where Portland cement concrete joins a previously poured Concrete Pavement.



Pile Driving - A pile driver is a machine used to drive piles that are concrete or steel that can be more than 100 feet long, to provide support for buildings and other structures such as bridges and other transportation related infrastructure.

Production piles – Once pile testing is completed, production piles are piles based upon any revised changes to the original test pile characteristic (i.e. length)

Ramp metering – A traffic management strategy which utilizes a system of traffic signal on freeway entrance and connector ramps to regulate the volume of traffic entering a freeway corridor in order to maximize the efficiency of the freeway and thereby minimize the total delay in the transportation corridor.

Reaction piles – During pile load testing, reaction piles are piles which support the pile load test equipment and act as anchors for the equipment to push against during the actual pile load test.

Request for Information (RFI) - A request for information (RFI) is a standard business process whose purpose is to collect written information about the capabilities of various suppliers. Normally it follows a format that can be used for comparative purposes.

An RFI is primarily used to gather information to help make a decision on what steps to take next. In addition to gathering basic information, an RFI is often used as a solicitation sent to a broad base of potential suppliers for the purpose of conditioning supplier's minds, developing strategy, building a database, and preparing for an RFP, RFT, or RFQ.

The RFI procedure is used in the construction industry in cases where it is necessary to confirm the interpretation of a detail, specification or note on the construction drawings or to secure a documented directive or clarification from the architect or client that is needed to continue work. An RFI raised by the general contractor that has been answered by the client or architect and distributed to all stakeholders is generally accepted as a change to the scope of work unless further approval is required for costs associated with the change.

Sawcutting - Sawcutting involves the formation of joints or breaks in a PCC mass (slab) by the use of mechanical cutting tools.

Settlement period - The settlement period is the number of days between the trade date and the settlement date. The trade date is the day that the investors all agree on to do the security transaction. The settlement date is the day that the payment is made. Different transactions have different settlement periods.

Shoring - Shoring is a general term used in construction to describe the process of supporting a structure in order to prevent collapse so that construction can proceed. During excavation, shoring systems provide safety for workers in a trench and speed excavation. Concrete structures shoring, in this case also referred to as falsework, provides temporary support until the concrete becomes hard and achieves the desired strength to support loads.



Shoulder - A shoulder is a reserved area by the verge of a road or motorway. Generally it is kept clear of all traffic. In the event of an emergency or breakdown, a motorist can pull into the shoulder to get out of the flow of traffic and obtain an element of safety. A hard shoulder also allows some extra flexibility should a motorist need to take evasive action, as it is a buffer area between the main thoroughfare and the edge of the road.

Skip loader - A skid loader is a small loader utilizing four wheels with hydraulic drive that directs power to either, or both, sides of the vehicle. Very similar in appearance and design is the track loader, which utilizes a continuous track on either side of the vehicle instead of the wheels.

Steel pile - Pipe piles are a type of steel driven pile foundation and are a good candidate for battered piles.

Pipe piles can be driven either open end or closed end. When driven open end, soil is allowed to enter the bottom of the pipe or tube. If an empty pipe is required, a jet of water or an auger can be used to remove the soil inside following driving. Closed end pipe piles are constructed by covering the bottom of the pile with a steel plate or cast steel shoe.

Subgrade – In transport engineering, subgrade is the native material underneath a constructed road, pavement or railway (US: railroad) track. It is also called formation level. The term can also refer to imported material that has been used to build an embankment.

Storm Water Pollution Prevention Plan (SWPPP) -

- identifies all potential source of pollution which may reasonably expected to affect the quality of storm water discharges from the construction site
- Describes practices to be used to reduce pollutants in storm water discharges from the construction site, and
- Helps assure compliance with the terms and conditions of the permit (when the plan is designed for the individual site and is fully implemented)

Test piles – Test piles are used to test a load of piles to establish an allowable load of piles without settling. A pile can usually support twice the working load.

TMP - traffic management plan

Vibration Monitoring - Vibration monitoring is the science of observing and measuring vibrations using carefully calibrated machines and precise measurements to carefully detect small movements across far distances. Vibration monitoring is used for a wide variety of applications, including freeway construction.