******THIS IS A NEW APPENDIX. – PLEASE READ CAREFULLY.******

GLOSSARY OF TERMS

Abutment: A stationary anchorage system that is independent of the bed or casting mold, used to withstand tensioning loads. The structure against which the tendons are stressed and anchored.

Admixture: A material used as an ingredient in concrete to enhance special characteristics.

Abient Temperature: The temperature of the air surrounding the form into which concrete is to be cast.

Anchorage: In pretensioned concrete, a device used to anchor the tendon to the abutment during hardening of the concrete.

Bleeding: the migration of mix water to the surface of freshly placed concrete.

Blocking (Dunnage): Supports on which a precast member is stored. Usually wood, but can be concrete, steel or other material.

Bug Holes (Voids or Air Pockets): Small holes on formed concrete surfaces caused by air or water bubbles. (In some cases may be caused by improper vibration during concrete placement.)

Bulkheads (Headers): The end form of a prestressed member.

Camber: The vertical arch in a concrete unit caused by the force generated when the stress from the tensioned tendons is transferred into the concrete. Positive camber is vertical deviation above the longitudinal axis of the product and negative camber is below the axis.

Confining Reinforcement: Reinforcement, which surrounds areas of potential stress concentrations to distribute the forces and control cracking.

Crack: A visible separation of the concrete at the surface (see hairline crack).

Creep: Time-dependent length change caused by stress. In prestressed concrete, the shortening of a member over time caused by the compressive stresses.

Curing: The control of humidity and temperature of freshly placed concrete until the concrete attains the strength specified before stress transfer. 'Accelerated' curing indicates the use of an artificial means, usually steam, to hasten the process by including higher temperatures during the curing period than would normally be achieved by natural cure.

Curing Membrane: Materials applied to concrete surface to prevent the moisture in concrete from evaporating too rapidly.

Debond (Masking): Any method used to prevent the concrete from bonding to the reinforcement (usually strand). Placing a sheath around the strand to prevent bond.

Degradation: In aggregates, the breakdown of the particles caused by abrasive or weathering forces.

Efflorescence: A white crystalline or powdery deposit on the surface of the concrete. Results from leaching of lime or calcium hydroxide out of a permeable concrete mass over time by water followed by a reaction with carbon dioxide or acidic pollutants.

Elongation: Extension of strand under given load based on its physical characteristics.

Form Release Agent: A substance applied to the forms for preventing bond between the forms and the concrete cast in it.

Gross Theoretical Elongation: The calculated elongation from chuck to chuck which includes all necessary corrections for operational losses (seating, thermal, slippage, etc.)

Hairline Crack: Very fine cracks visible to the naked eye. Causes due to drying shrinkage and thermal expansion.

Laitance: A thin, weak, brittle layer of cement and aggregate fines that float on a concrete surface4 caused by excess water used in the mix. Laitance can create an eggshell surface over hidden voids.

Load Cell: Sensitive electrically operated strain gauges attached to a calibrated Load Cell to provide direct readings of compressive loads applied to the Load Cell.

Net Theoretical Elongation: The calculated elongation from chuck to chuck after seating including all appropriate and necessary corrections (slippage, thermal, seating, etc.)(which is elongation minus live end seating).

Release Strength (Transfer Strength): The compressive strength of the concrete when detensioning occurs.

Segregation: The tendency of the coarse particles to separate from the finer particles, in concrete, the coarse aggregate and drier material remains behind, while the mortar and wetter material flows ahead; this also occurs in a vertical direction when wet concrete is over vibrated or dropped vertically into the forms, the mortar and wetter materials rising to the top.

Shrinkage: The shortening of concrete units due to drying.

Spall: A fragment of concrete broken away from the concrete unit.

Strain: Deformation (elongation) of the strand due to the applied force, usually measured in inches/inch.

Strand: A seven-wire stress-relieved or low-relaxation tendon (cable) produced in accordance with specified standards for pretensioning operations.

Strand Chuck: A device for holding a strand under tension, generally comprised of a barrel, grooved jaws, with an “O” ring pulling them together and a spring equipped cap.
Strand Relaxation: The loss of stress in the prestressed steel strand occurring over a period of time while the strand is under stress due to the realignment of the steel properties.

Stress: The applied force (pressure) that tends to cause deformation (elongation in the strand).

Superplasticizer: A high range water-reducing admixture (HRWR) used to produce a higher concrete slump with out additional water, or maintaining slump while reducing the amount of water.

Surface Defects: Defects that appear on the surface of concrete during concrete pours or shortly after completion and are usually caused by poor quality materials, improper mix design, lack of placing and curing procedures, or poor workmanship (honeycomb, air voids, laitance, stains, cracks, small holes, large holes, etc.)

Sweep: Deviation from a straight line parallel to the centerline of the beam (horizontal alignment).

Web: The narrow portion of the cross section of a beam.