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CAL Green

The 2010 California Green Building Code; "CalGreen" effective January 1st, 2011

Existing Culver City Building Safety Division Green Programs:

The Culver City Mandatory Photovoltaic Requirement, effective May 2008:

http://www.culvercity.org/Government/CommunityDevelopment/~/_media/Files/BuildingSafety/AlternateEnergy/MandatorySolarPhotovoltaicRequirement_Spring2008%20pdf.aspx

The Culver City Mandatory Green Building Requirement, effective June 2009:

http://www.culvercity.org/Government/CommunityDevelopment/~/_media/Files/BuildingSafety/GreenBuilding/CulverCityGreenBuildingProgram_June2009.aspx

The 2010 California Green building Code "CalGreen" goes into effect January 1st, 2011

Applies to all new construction with a construction permit application after January 1st, 2011:

Applies to all newly constructed residential and commercial buildings, does not apply to additions or renovations.

Culver City Green Requirements Application Chart:

	Culver City Mandatory Solar Requirement May 2008	Culver City Mandatory Green Building program June 2009	California Green Building Code January 2011 CalGreen
New 1 & 2 Family Dwellings	n/a	n/a	CalGreen Chapter 4 Mandatory Measures for Residential
Major Renovations up to 10,000 s.f.	n/a	Category 1: comply with 80% of a list of 25 items	n/a
Major Renovations from 10,000 s.f. to 50,000 s.f.	1 kw solar photovoltaic power per 10,000 s.f.	Category 1: comply with 80% of a list of 25 items	n/a
New Construction up to 10,000 s.f.	n/a	Category 1: comply with 80% of a list of 25 items	CalGreen Chapter 4 Mandatory Measures for Residential, CalGreen Chapter 5 Mandatory Measures for Commercial
New Construction from 10,000 s.f. to 50,000 s.f.	1 kw solar photovoltaic power per 10,000 s.f.	Category 1: comply with 80% of a list of 25 items	CalGreen Chapter 4 Mandatory Measures for Residential, CalGreen Chapter 5 Mandatory Measures for Commercial
Major Renovations over 50,000 s.f.	1 kw solar photovoltaic power per 10,000 s.f.	Category 2: Leed Certified Performance Level	n/a
New Construction over 50,000 s.f.	1 kw solar photovoltaic power per 10,000 s.f.	Category 2: Leed Certified Performance Level	CalGreen Chapter 4 Mandatory Measures for Residential, CalGreen Chapter 5 Mandatory Measures for Commercial

Notes:

- The Culver City Mandatory Solar Photovoltaic Requirement does not apply to parking structure square footages.
- "Major" renovations are defined as 50% or greater of the value of the existing building, not including the land.

2010 California Green Building Code "CalGreen" effective January 1st, 2011

5 General Categories:

1. Planning and Design
2. Energy Efficiency
3. Water Efficiency and Conservation
4. Material Conservation and Resource Efficiency
5. Environmental Quality

Entire 2010 CalGreen Code:

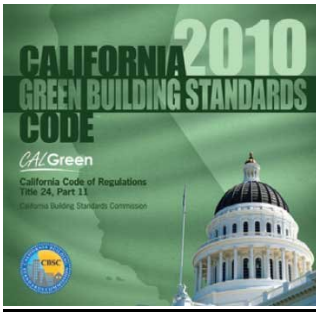
http://www.documents.dgs.ca.gov/bsc/CALGreen/2010_CA_Green_Bldg.pdf

A Guide to the CalGreen Residential Mandatory Measures:

http://www.hcd.ca.gov/codes/shl/CALGreenGuide_COMPLETE_6-10.pdf

A Guide to the CalGreen Commercial Mandatory Measures:

<http://www.documents.dgs.ca.gov/bsc/CALGreen/CALGreenGuideFirstEdition8-2010.pdf>



Summary of the 2010 California Green Building Code

Effective January 1st, 2011

Residential Mandatory Measures:

4.303.1 Indoor Water Use - 20% savings over baseline

Water use baseline is set by Section 4.303.1. Compliance may be demonstrated by either a prescriptive or a performance approach

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

4.304.1 Irrigation Controllers - "automatic" irrigation system controllers

Irrigation controller shall be either soil or weather moisture based.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

4.406.1 Joints and Openings - enhanced durability and reduced maintenance

Construction drawings shall indicate joints are to be sealed in compliance with T-24 Energy code; an emphasis on the weatherproofing requirements already in the California Building Code.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

4.408.1 Construction Waste Reduction, Disposal and Recycling - Construction waste reduction of at least 50%

Submit a construction waste management plan indicating recycling or salvaging a min. of 50% of the non-hazardous construction and demolition debris, not including excavated soil or land clearing debris.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

4.503.1 Environmental Quality; Fireplaces - any gas fireplace to be a direct vent sealed combustion type. Any wood stove to be US EPA Phase II compliant.
Self explanatory.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

4.504.1 Covering of Duct Openings and Protection of Mechanical Equipment During Construction - from rough installation or storage on site to final start-up of the mechanical system; all ducts and HVAC components shall be covered.

Use supply boots, plastic wrap, cardboard, or other materials to cover all HVAC ducts and equipment until final startup.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

4.504.2.1 Finish Material Pollutant Control - Adhesives, sealants, caulks, etc. - comply with SCAQMD Rule 1168 VOC limits.

See also CalGreen Table 4.504.1 and Table 4.504.2 for VOC limits; provide manufacturers information on site of all such materials for field verification.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

4.504.2.2 Finish Material Pollutant Control - Paints and Coatings - comply with California Air Resources Board (CARB) limits.

See also <http://www.arb.ca.gov/coatings/arch/rules/VOClimits.pdf> ,provide manufacturers information on site of all such materials for field verification.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

4.504.2.3 Finish Material Pollutant Control - Aerosol Paints and Coatings - comply with California Air Resources Board (CARB) limits.

See also <http://www.arb.ca.gov/coatings/arch/rules/VOClimits.pdf> ,provide manufacturers information on site of all such materials for field verification.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

4.504.3 Carpet Systems - all new carpet shall comply with one of the following:

1. Carpet and Rug Institutes Green Label Plus Program <http://www.carpet-rug.org/commercial-customers/green-building-and-the-environment/green-label-plus/>
 2. California Department of Public Health Standard Practice for the Testing of VOC's (Specification 01350) <http://www.calrecycle.ca.gov/GreenBuilding/Specs/Section01350/>
 3. NSF/ ANSI 140 at the Gold Level <http://www.carpet-rug.org/carpet-and-rug-industry/sustainability/sustainable-carpet/index.cfm>
 4. Scientific Certifications Systems Indoor Advantage Gold <http://www.scscertified.com/gbc/indooradvantage.php>
- Provide manufacturers information on site of all such materials for field verification.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

4.504.4 Resilient Flooring Systems - at least 50% of all resilient flooring shall comply with one of the following:

1. The VOC limits defined in the Collaborative for High Performance Schools (CHPS) Low Emitting Materials List
 2. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program.
- Provide manufacturers information on site of all such materials for field verification.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

4.504.5 Composite Wood Products

Hardwood, plywood, particleboard, and medium density fiberboard composite wood products used interior or exterior shall meet the requirements for formaldehyde per the California Air Resources Board (CARB) Air Toxic Control Measure for Composite Wood (17 CCR 93120)

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

4.505.2 Concrete Slab Foundations - shall have a vapor retarder underneath per:

2010 California Building Code 1910A: provide a min. 6 mil vapor barrier, joints lapped min. 6" (exceptions: garages, utility buildings, unheated storage rooms less than 70 s.f., other buildings where water migration will not be an issue, driveways, walks, and patios).

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

4.505.2.1 Capillary Break - provide a capillary break (at concrete slabs) per one of the following:

1. Provide a 4" thick base of 1/2" or larger aggregate directly below the required vapor barrier.
2. Other equivalent measures determined on a case by case basis by Culver City Building Safety.
3. A slab designed by a California licensed design professional.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

4.505.3 Moisture Content of Building Materials - building materials with visible signs of water damage shall not be installed, wood wall and floor framing shall not exceed 19% moisture content shall be verified per the following (by CCBS staff):

1. A probe-type or contact-type moisture meter.
2. Readings shall be taken from 2' to 4' from the grade stamped end.
3. At least 3 random moisture readings shall be performed on wood framing. prior to enclosure of the wood framing.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

4.506.1 Bathroom Exhaust Fans - required bathroom exhaust fans shall comply with:

1. Fans shall be Energy Star and shall be ducted to the exterior of the building.
2. Fans shall be controlled by a humidistat unless used as a component of a whole house ventilation system.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

4.507.1 Openings - Whole house fans shall have an insulated louver cover

Minimum R value of the louvered cover shall be 4.2.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

4.507.2 Heating and Air conditioning System Design - HVAC systems shall be designed per:

1. Heat loss and heat gain shall be established per ACCA Manual J or ASHRAE handbooks.
2. Duct systems shall be sized per ACCA 29-D Manual D or ASHRAE handbooks.
3. Heating and cooling equipment shall be selected per ACCA 36-S Manual S or other equivalent methods.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

Commercial Mandatory Measures:

5.106.1 Planning and Design - Storm Water Pollution Prevention Plan

Provide a Storm Water Pollution Prevention Plan (SWPPP) prepared by a qualified professional per California NPDES and California State Water Control Board Standards.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.106.5.2 Designated Parking - provide designated parking for low-emitting, fuel efficient, and carpool/ van vehicles.

Provide designated parking per CalGreen Table 5.106.5.2

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.106.8 Light Pollution Reduction

1. Shield all exterior luminaries or provide cut-off luminaries per Cal. Energy Code 132 (b).
2. Contain interior lighting within each source.
3. Allow no more than .01 horizontal lumen foot candles 15' beyond site boundaries.
4. Provide automatic controls for exterior lighting to turn off during inactive periods.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.106.10 Grading and Paving - Grade site to keep surface water from entering buildings.

Self explanatory; similar to Cal. Building Code Section 1805.3.4.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.201.1 Energy Efficiency - Comply with California Energy Code

Self explanatory; comply with the California Title 24 Energy Code requirements.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.303.1 Water Meters

For new buildings greater than 50,000 s.f.:

1. Provide individual water meters for tenant spaces expected to consume more than 100 gallons per day.
2. Provide individual water meters for laundry, cleaner, restaurant, food service, medical, dental, laboratory, beauty salon, or barber shops expected to consume more than 1-- gallons per day.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.303.2 Twenty Percent Water Savings

Demonstrate 20% water savings by one of two methods:

1. Each plumbing fixture or fitting shall meet the 20% reduced flow rate per CalGreen Table 5.303.2.3.
2. Provide calculations demonstrating a 20% reduction over the "water use baseline" per CalGreen Table 5.303.2.2.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.303.2.1 Multiple Showerheads Serving One Shower

The combined flow rates of all showerheads in one shower shall not exceed the maximum flow rates specified in the 20% reduction column per CalGreen Table 5.303.2.3.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.303.4 Wastewater Reduction - 20% wastewater reduction.

Demonstrate a 20% wastewater reduction by one of the following methods:

1. Comply with the 20% water use reduction per CalGreen 5.303.2.
2. Utilize non-potable water systems; captured rainwater, graywater, or recycled water.
3. Use waterless urinals.
4. Irrigate landscaping with graywater.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.303.6 Plumbing Fixtures and Fittings.

Plumbing fixtures address in CalGreen Table 5.303.6 shall comply with the referenced standards.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.304.1 Water Budget - Landscape irrigation

Develop a water budget for landscape irrigation per the Culver City Water Efficiency Ordinance. http://www.culvercity.org/Government/PublicWorks/EnvironmentalPrograms/~/_media/Files/PW/EnvironmentalOps/Ord2009WaterConservation.ashx

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.304.2 Outdoor Potable Water Use

For new landscaped areas of greater and 1,000 s.f. and less than 5,000 s.f.; provide separate water meters or submeters for indoor and outdoor potable water use.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.304.3 Irrigation Design

For new landscaped areas greater than 1,000 s.f. and less than 2,500 s.f. indicate irrigation controllers per the following:

1. Provide weather or soil moisture irrigation controllers.
2. Weather based irrigation controllers without integral rain sensors shall have a separate rain connected to the controller.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.407.1 Weather Protection

Provide weather-resistant exterior wall and foundation envelope per California Building Code Section 1403.2 and California energy Code Section 150.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.407.2 Moisture control

Limit moisture entry into buildings:

CalGreen 5.407.2.1 Irrigation Sprinklers: prevent spray onto structures.

CalGreen 5.407.2.2 Entries and Openings: design to prevent water intrusion into buildings.

1. Use features such as overhangs and recesses, flashings, etc. integrated with a drainage plain.
2. Use non-absorbent floor and wall finishes within 2' of building entries.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.408.1 Construction Waste Diversion

Establish a construction Waste Management Plan that:

1. Identifies the materials to be diverted from disposal by efficient usage, recycling, reuse, or salvage.
2. Determines whether materials will be sorted on-site or mixed.
3. Identifies diversion facilities where collected material will be taken.
4. Specifies the amounts of materials diverted by weight or volume.

Sample Waste Management Plans may be found at:

<http://www.calrecycle.ca.gov/ConDemo/>

A C&D Debris Recyclers Database may be found at:

<http://www.calrecycle.ca.gov/ConDemo/Recyclers/RecyclerSearch.aspx>

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.408.3 Construction Waste Reduction of a least 50 Percent

Provide a Construction Waste Management Plan that indicates recycling or reusing a minimum of 50% of construction waste, excluding:

1. Excavated soil and land clearing debris.
2. Alternate waste reduction methods if diversion or recycle facilities don't exist. (Not applicable to Culver City.)

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.408.4 Excavated Soil and Land Clearing Debris

100% of trees, stumps, rocks, and associated vegetation and soils resulting from land clearing shall be reused or recycled. Provide a complying Waste Management Plan.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.410.1 Recycling by Occupants

Indicate on the construction plans readily accessible areas serving the entire building for the storage and collection of (1) paper, (2) corrugated cardboard, (3) glass, (4) plastics, and (5) metals.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.410.4 Testing and Adjusting (Building Commissioning)

Testing and adjusting of systems is required of new buildings less than 10,000 s.f. Provide a written plan of procedures for testing and adjusting of systems including:

1. HVAC systems and controls.
2. Indoor and outdoor lighting and controls.
3. Water heating systems.
4. Renewable energy systems
5. Landscape irrigation systems.
6. Water reuse systems.

Additionally; all new HVAC systems shall be tested and balanced in accordance with the Testing, Adjusting, and Balancing Bureau National Standards, the National Environmental Bureau Procedural Standards, or the Associated Air Balance council National Standards.

A final report of the testing signed by the responsible individual shall be provided to Culver City Building Safety prior to final inspection.

Provide the building owner with a detailed Operation and Maintenance (O&M) Manual and copies of guaranties & warranties for each system, including copies of all Culver City Building Safety Inspection reports.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.503.1 Fireplaces

Install only direct-vent sealed combustion gas or sealed-wood-burning fireplace, or sealed woodstove or pellet stove. Any woodstove or pellet stove shall comply with U.S. EPA Phase II emission limits.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.504.3 Covering of Duct Openings and Protection of Mechanical Equipment During Construction - from rough installation or storage on site to final start-up of the mechanical system; all ducts and HVAC components shall be covered.

Use supply boots, plastic wrap, cardboard, or other materials to cover all HVAC ducts and equipment until final startup.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.504.4.1 Finish Material Pollutant Control - Adhesives, sealants, caulks, etc. - comply with SCAQMD Rule 1168 VOC limits.

See also CalGreen Table 4.504.1 and Table 4.504.2 for VOC limits; provide manufacturers information on site of all such materials for field verification.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.504.4.3 Finish Material Pollutant Control - Paints and Coatings - comply with California Air Resources Board (CARB) limits.

See also <http://www.arb.ca.gov/coatings/arch/rules/VOClimits.pdf> ,provide manufacturers information on site of all such materials for field verification.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.504.4.3.1 Finish Material Pollutant Control - Aerosol Paints and Coatings - comply with California Air Resources Board (CARB) limits.

See also <http://www.arb.ca.gov/coatings/arch/rules/VOClimits.pdf> ,provide manufacturers information on site of all such materials for field verification.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.504.4.4 Carpet Systems - all new carpet shall comply with one of the following:

1. Carpet and Rug Institutes Green Label Plus Program <http://www.carpet-rug.org/commercial-customers/green-building-and-the-environment/green-label-plus/>
2. California Department of Public Health Standard Practice for the Testing of VOC's (Specification 01350) <http://www.calrecycle.ca.gov/GreenBuilding/Specs/Section01350/>
3. NSF/ ANSI 140 at the Gold Level <http://www.carpet-rug.org/carpet-and-rug-industry/sustainability/sustainable-carpet/index.cfm>
4. Scientific Certifications Systems Indoor Advantage Gold <http://www.scscertified.com/gbc/indooradvantage.php>

Provide manufacturers information on site of all such materials for field verification.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.504.4.5 Composite Wood Products

Hardwood, plywood, particleboard, and medium density fiberboard composite wood products used interior or exterior shall meet the requirements for formaldehyde per the California Air Resources Board (CARB) Air Toxic Control Measure for Composite Wood (17 CCR 93120)

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.504.5 Resilient Flooring Systems - at least 50% of all resilient flooring shall comply with one of the following:

1. The VOC limits defined in the Collaborative for High Performance Schools (CHPS) Low Emitting Materials List
 2. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program.
- Provide manufacturers information on site of all such materials for field verification.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.504.5.3 Filters

In mechanically ventilated buildings; provide regularly occupied areas of the building with air filtration media that provides a minimum Efficiency Reporting Value (MERV) of 8.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.504.7 Environmental Tobacco Smoke (ETS) Control

Any outdoor areas provided for smoking shall be a minimum of 25' from any building entries, outdoor air intakes, or operable windows.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.505.1 Indoor Moisture Control

Buildings shall meet or exceed the California Building Code, CCR, Title 24, Part 2, Sections 1203 (Ventilation) and Chapter 14 (Exterior Walls).

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.506.1 Outside Air Delivery

Mechanically or naturally ventilated buildings shall meet the minimum requirements of the California Energy Code Section 121 (Requirements for Ventilation), CCR, Title 24, Part 6, and Chapter 4 of CCR, title 8.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.506.2 Carbon Dioxide Monitoring

Building with demand control ventilation; CO2 sensors and controls shall be installed per the California Energy Code, CCR, Title 24, Part 6, Section 121 (C).

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.507.4 Acoustical Control

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.507.4.1 Exterior Noise Transmission

Any new building;

1. Within 1,000 of the right of way of freeways
2. Within 5 miles of airports serving more than 10,000 commercial jets per year.
3. Where sound levels at the property line regularly exceed 65 db, other than due to occasional sounds.

Shall have wall and roof assemblies with a minimum Sound Transmission Coefficient (STC) of 50, and exterior windows shall have a minimum STC of 30.

Exception: buildings with few or no occupants or where occupants are unlikely to be affected by sound.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.507.4.2 Interior Sound

Wall and floor assemblies separating tenant spaces and tenant spaces to public spaces shall have a minimum STC of 40.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	

5.508.1 Ozone Depletion and Greenhouse Gas Reduction

HVAC, refrigeration, and fire suppression systems shall not contain any chlorofluorocarbons (CFCs) or Halons.

Reference Sheets (Sheet #'s or N/A)	
Comments (e.g. Note # or Detail #)	