



# Building Statistics

---

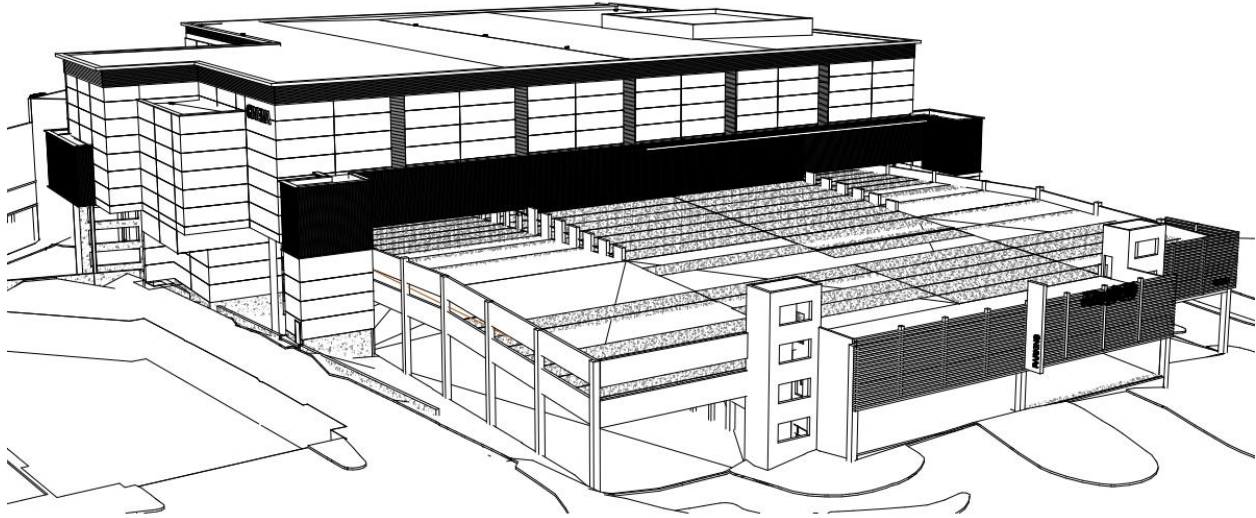


Image from Architectural Drawings Provided by The Whiting-Turner Contracting Company

## Part 1

### General Building Data

|                                       |   |
|---------------------------------------|---|
| <b><i>Building Name:</i></b>          | <b><i>Project Delivery Method:</i></b><br>Cinema-Dining Terrace Expansion                             |
| <b><i>Location and Site:</i></b>      | Suburbia, USA   |
| <b><i>Building Occupant Name:</i></b> | ArchLight Cinema  |
| <b><i>Building Functions:</i></b>     | Covered Mall Building Assembly, Business,<br>Mercantile, Storage                                      |
| <b><i>Size:</i></b>                   | <u>91,500 GSF</u><br>70,000 sqft Cinema<br>12,000 sqft Food Court Expansion<br>9,500 sqft Restaurants |
| <b><i>Number of Stories:</i></b>      | 3 Stories Above Grade   |
| <b><i>Dates of Construction:</i></b>  | June 2012 – August 2014   |
| <b><i>Cost:</i></b>                   | \$50,223,763.00   |



Design-Bid-Build with a Negotiated GMP

**Primary Project Team**

- Owner:** Anonymous Owner
- GC:** The Whiting-Turner Contracting Company
- Architect:** Gensler
- Structural Engineer:** Robert Silman Associates
- Lighting Consultant:** Horton Lees Brogden Lighting Design
- Code Consultant:** Code Consultants, Inc.
- Acoustical Engineer:** Sonics ESD
- MEP Engineer:** B&R Construction Services
- Civil Engineer:** Dewberry
- Landscape Architect:** Mahan Rykiel Associates



Image from Architectural Drawings Provided by The Whiting-Turner Contracting Company

**Architecture:**

**Design and Functional Components:**

The project consists of a 16 screen cinema at the mall’s level 3 sitting on top of an existing parking structure, an expansion to the food court, and the addition of restaurant space at the concourse level. The new ArcLight Cinema will sit above the parking garage located on the west side of the property, adjacent to the existing food court. Once complete, the redevelopment will also include a fully renovated and expanded dining terrace, offering a casual yet upscale experience, including new dining choices, all new finishes, flooring and furnishings, additional seating and new restrooms. There will be significant modifications to the existing parking and mall where the cinema connects, including demolition, new foundations, structural upgrades and reconfigured retail.

**Applicable Building Codes:**

**Statewide Codes/ Editions:**

- Accessibility:** COMAR 05.02.02 ADA AG & FFHAG
- Commercial Building:** ICC IBC 2012 / MBRC 2010
- Commercial Fuel Gas:** ICC IFGC 2012
- Commercial Mechanical:** ICC IMC 2012

|                                     |  |
|-------------------------------------|--|
| <b><i>Electrical:</i></b>           | NFPA NATIONAL ELECTRICAL CODE 2008                                   |
| <b><i>Energy Conservation:</i></b>  | ICC IECC 2012  |
| <b><i>Fire Alarm:</i></b>           | NFPA 72 2007 / COMAR NFPA 72 2007                                    |
| <b><i>Life Safety:</i></b>          | NFPA 101 2009 / COMAR NFPA 101 2009                                  |
| <b><i>Plumbing Gas:</i></b>         | WSSC PLUMBING CODE   |
| <b><i>Commercial Sprinkler:</i></b> | NFPA 13R 2007, NFPA 13 2007, COMAR NFPA 13R 2007, COMAR NFPA 13 2007 |

**Montgomery County Executive Regulations:**

|                                      |                |
|--------------------------------------|----------------|
| <b><i>Accessibility:</i></b>         | STATE ADOPTION |
| <b><i>Commercial Building:</i></b>   | ER 8-12        |
| <b><i>Commercial Fuel Gas:</i></b>   | ER 8-12        |
| <b><i>Commercial Mechanical:</i></b> | ER 8-12        |
| <b><i>Electrical:</i></b>            | ER15-09        |
| <b><i>Energy Conservation:</i></b>   | ER 8-12        |
| <b><i>Fire Alarm:</i></b>            | ER9-12AM       |
| <b><i>Life Safety:</i></b>           | ER10-12AM      |
| <b><i>Plumbing Gas:</i></b>          | N/A            |
| <b><i>Commercial Sprinkler</i></b>   | ER9-12AM       |

**Zoning:**

C-2 Commercial

**Historical Requirements:**

There are no historical of requirements or features for this Cinema- Dining Terrace Expansion

**Building Envelope:**

The new building façade will primarily consist of metal paneling, glass, and EIFS. The Storefront along the mall has a decorative formed metal trim around composite metal panels and insulated, tempered storefront glazing. The majority of the Cinema is covered by vertical corrugated metal wall panels and an EIFS surface assembly that is surrounded by white sheet metal flashing and trim. The Main entrance to the Cinema and Dining area uses a combination of Storefront Glazing, Viracon Glazing, and EIFS Surface Assemblies to create an attractive and elegant gateway. Along the existing concrete parking garage, a system of Decorative Aluminum Louvers was added to create a more aesthetic appeal. The metal panels are primarily made of glazed aluminum with cold-rolled channels, CMU, or structural steel backing. The EIFS is typically backed by thermal or semi-rigid insulation on either cold-formed channels, furring channels, or structural steel framing.

### Roofing:

The roof system consists primarily of a TPO membrane with insulation, protection board, and sheet metal flashing and trim. This typically sits on a metal decking with wood blocking near the edges.

## Part 2

### Construction

The Cinema-Dining Terrace Expansion has a unique construction process due to the fact that the project was being built around an existing and active building. The new Cinema is being built on top of an existing parking garage with an active road running through on the ground floor causing extreme safety issues. Fencing and signage are particularly important around this road and around the active mall driveways and entrances surrounding the site.

The construction phasing is unique in that the project has work going on outside in and on the parking garage while simultaneously work going on inside the food court.

The garage work will include extensive foundation additions including micro-piles with pile caps, sandwich footings, strip footing, and mat foundations. The garage will also have two hydro cranes demolish the mall side half of precast concrete in order to make room for the Cinema. A tower crane will also be placed in the center of the parking garage to erect the steel structure for the cinema and expansion. In order for that, the hydro cranes must remove the 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> level precast concrete pieces in that location and then place the tower crane.

In the food court area, extensive tenant work will be done at night in order to keep the food court open during the day. Barriers will be placed around the tenant areas being worked on at that time. Along with the tenant work, demolition will be going on at the existing entrance to make room for the new lobby and restaurant expansion.

A few of the critical construction items include the foundations and the steel. The mill orders for the steel needed to be placed as early as possible and since the steel needs to be supported by the foundations, those needed to be complete on time for the steel to be erected on time. With the mall owner placing a strict deadline on opening back up the garage and on the project completion, dealing with the critical items and accelerating the schedule when possible were essential.

### Electrical

Selective demolition of the existing electrical equipment/systems will occur in both the parking garage and mall. A new 4000A multi-meter service switchboard will be used to service the theater and new restaurants. This switchboard, multiple existing switchboards for the food court tenants, a 750 kVA transformer for the existing mall and a 150 kVA transformer for the fire pump will supply power to the new HVAC, plumbing equipment, new elevators, escalators, renovated and new spaces, and the fire alarm.

## Lighting

The lighting plan for the Cinema-Dining Terrace Expansion incorporates a combination of LED's, linear fluorescent fixtures, and metal halides. The mall concourse and dining areas contain many of the LED fixtures including 33W & 24W LED downlights, LED Ribbons, and Linear LED Slots but also including many 39W Ceramic Metal Halides. The exterior and garage areas mostly use the Linear LED fixtures. The lounge and recreation space contains the majority of the Linear Fluorescent fixtures that are primarily 48" T8 32W (Super T8).

## Mechanical

The existing food court uses a Variable Air Volume system while the concourse uses a constant Volume system. The new system will contain 7 Roof Top Units and 4 Air Handling Units that will be interfaced with the Malls existing mechanical system. The AHU's have an average CFM range of 388-738 with an average BTUH range of 8,200-25,200. The theater will also compose of a split pipe system running to individual Unit Heaters.

## Structural

The structural system for the Cinema-Dining Terrace Expansion is composed primarily of steel with concrete shear walls and that all required extensive foundation work as stated in the construction section.

The foundation work used a combination of micro-piles with pile caps, sandwich footings, spread footings, and mat foundations. The exposed pile caps and footing extensions (sandwich footings) required 6000 psi concrete. The footing extensions had a post-tensioned threadbar that ran through the extensions and the existing footing to tie it all together like a sandwich. The spread footings, other pile caps, retaining walls, shear walls, wall footings, piers, slab on grade, and framed slabs all required 4500 psi concrete. Exposed pile caps averaged to be about 6'x6' in size and the footing extensions averaged about 5' length from the existing footing and about a 6' width, each with extensive reinforcing. Column base plates were placed on pile caps and piers in order for the steel columns to rest on them.

The steel columns varied on size depending on the location but the main two column sizes used are W14x90 and W14x120. Other sizes would include W14x257, W14x211, and W14x159. The beam sizes varied greatly but many used for the theater framing were W36x130, W36x170, W18x50, W24x68, and W36x210. The unique shape and design of the building didn't allow for many sections of repeated structure so the steel differed in many places.

## Fire Protection

The majority of the sprinkler system is hydraulically designed and the existing automatic dry pipe system will be extended to provide complete coverage in the level 1 garage in the area beneath the new food court. An automatic wet-type sprinkler system will be provided throughout the entire area affected by work. There will be new fire pump valved sprinkler connections and stairwell standpipe systems for the Cinema.



### **Transportation**

New egress stairs and service elevators are being added for the Cinema while also including new escalators in the main lobby area.

### **Telecommunications**

Telecommunications are not included in this contract.