

# Element D Services

Plumbing

## D204001 Storm Water Drainage for Open Parking Garages

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### PART 1 - GENERAL

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#### 1.01 OVERVIEW

- A. This section addresses storm water drainage systems within and to five feet beyond parking garage building perimeter.

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### PART 2 - DESIGN CRITERIA

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#### 2.01 GENERAL

- A. Storm water drainage systems shall be provided to convey rainwater from garage structure to the site municipal storm sewer system. Secondary emergency overflow systems shall be installed to protect parapet roof structures in the event of primary system blockage. The overflow system shall utilize parapet scuppers.
- B. Primary and secondary roof drain systems shall be designed using 8 inch per hour rainfall intensity in conjunction with code established area-to-pipe sizes allowed.
- C. The design of storm drainage systems shall prevent the entrance of sanitary waste and/or sanitary vent gas.
- D. No roof or area drain shall have an outlet connection smaller than 3 inches.
- E. Do not locate drain piping within stairways, elevator equipment rooms, electrical or telecommunications rooms.
- F. Appropriate subsoil and foundation drainage shall be provided as required by the geotechnical report. Due to elevations of foundations and city utilities, all subsoil drainage shall be discharged from the building through a lift station with duplex pumps. Each pump shall be sized for 100 percent of design capacity. Sumps and pumps handling sub-soil/foundation drainage shall not receive any sewage or building storm drainage.

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### PART 3 - SPECIAL CONTRACT DOCUMENT REQUIREMENTS

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#### 3.01 GENERAL

- A. Develop plans, schedules, isometric or flat riser diagrams and details indicating all information required to clearly illustrate the intent of system design. All piping shall be located and sized on the Contract Drawings.

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- B. Floor plans and riser diagrams shall include, but not be limited to identification of all roof drains, area drains and piping.
- C. Area square footages used for system design shall be noted at each roof drain, area drain, house drains exiting the building, base of downspouts, branch connections at downspouts, and sump pump system.
- D. Invert elevations shall be noted at all piping exiting the building perimeter, connections to exterior sewers, uppermost point of each main and branch line located below ground level, and all other points where required to clearly establish proper slope and coordination with other piping systems and building components.
- E. Bottom of pipe elevations shall be noted for unburied piping at locations where close coordination is required to prevent conflicts with other systems, structural components, pedestrian traffic and/or vehicular traffic.
- F. Graphically identify each roof drain, area drain and downspout on plans and riser diagrams. Identification on riser diagrams shall correspond to identification on plans. Graphically indicate floor levels and floor elevations on riser diagrams.
- G. Details shall be provided for, cleanouts, roof drains, area drains, sump pump systems, roof penetrations, floor and wall penetrations, and all other components that require installation explanation beyond the information included within plans and riser diagrams.
- H. Schedules shall clearly identify: Capacity, size, model, options and other requirements for all roof drains, area drains and sump pump equipment.

### PART 4 - PRODUCTS

#### 4.01 GENERAL

- A. Refer to Master Construction Specifications.
- B. Schedule 40 PVC DWV piping complying with the International Plumbing Code may be specified as an alternate to piping specified within Owner's Master Construction Specifications when determined appropriate by the Engineer of Record.

### PART 5 - DOCUMENT REVISION HISTORY

Issue	Date	Revision Description	Reviser
	20190301	Original Issuance	

