# ADDENDUM #2

## GADSDEN CITY HALL

Gadsden, AL

WBA #23-083.00

OWNER:
City of Gadsden
90 Broad Street
Gadsden, AL 35901
ph. (256)549-4500

#### DATE: 9 December 2024

TO: All Bidders

Acknowledge receipt of this Addendum by inserting its number in the Bid Form. Failure to do so may subject Bidder to disqualification. This serves as an addendum to the construction documents and modifies and/or supplements them as follows:

ARCHITECT:

Williams Blackstock Architects 2204 1<sup>st</sup> Avenue South, Suite 200

Birmingham, AL 35233 ph. 205-252-9811

## **GENERAL:**

- 1. Various questions received from Bidders have been compiled into a "Bidding Questions and Clarifications" spreadsheet which is attached for inclusion into the Bid Documents. Questions that were answered in previous addenda have been greyed-out for clarity and ease of reference.
- 2. The Table of Contents for the project manual and the Sheet Index for the drawings will be updated to include all new drawings and spec sections that are included as part of this addendum.

## PROJECT MANUAL:

## 1. Section 00 0110 – TABLE OF CONTENTS:

- a. Table of Contents has been updated to add section 07 1400 BSD Fluid-Applied Roof and WP
- b. Table of Contents has been updated to strike section 07 5200 Modified Bituminous Membrane Roofing.
- c. Table of Contents has been updated to add Section 27 0526 GROUNDING AND BONDING FOR COMMUNICATIONS SYSTEMS.
- d. Table of Contents has been updated to add Section 27 0529 HANGERS AND SUPPORTS FOR COMMUNICATIONS SYSTEMS.
- e. Table of Contents has been updated to add Section 27 0536 CABLE TRAYS FOR COMMUNICATIONS SYSTEMS.
- f. Table of Contents has been updated to add Section 27 0553 IDENTIFICATION FOR COMMUNICATIONS SYSTEMS.
- g. Table of Contents has been updated to add Section 27 1100 COMMUNICATIONS EQUIPMENT ROOM FITTINGS.
- h. Table of Contents has been updated to add section 27 1116 COMMUNICATIONS RACKS, FRAMES, AND ENCLOSURES.
- i. Table of Contents has been updated to add section 27 1500 STRUCTURED CABLING.
- j. Table of Contents has been updated to add section 27 4100 COMMON WORK RESULTS FOR AUDIOVISUAL SYSTEMS.
- k. Table of Contents has been updated to add section 27 4130 AUDIOVISUAL SYSTEMS.
- I. Table of Contents has been updated to add section 28 1000 ACCESS CONTROL.

m. Table of Contents has been updated to add section 28 2000 - VIDEO SURVEILLANCE.

#### 2. Section 01 1000 - SUMMARY:

a. Specification section has been updated to remove reference to Mobile County Sportsplex.

#### 3. Section 07 1400 – BSD-FLUID-APPLIED ROOF AND WP:

a. Specification Section 07 1400 – BSD-Fluid-Applied Roof and WP has been added to the Project Manual.

#### 4. Section 07 7600 – USER-PEDESTAL PAVER SYSTEM:

a. Specificaiton Section 07 7600 – User-Pedestal Paver System has been added to the Project Manual.

#### 5. Section 08 7100 – DOOR HARDWARE:

a. Specification Section 08 7100 – DOOR HARDWARE has been added to the Project Manual.

#### 6. Section 27 0526 – GROUNDING AND BONDING FOR COMMUNICATIONS SYSTEMS:

a. Specification Section 27 0526 – GROUNDING AND BONDING FOR COMMUNICATIONS SYSTEMS has been added to the Project Manual.

#### 7. Section 27 0529 – HANGERS AND SUPPORTS FOR COMMUNICATIONS SYSTEMS:

a. Specification Section 27 0529 – HANGERS AND SUPPORTS FOR COMMUNICATIONS SYSTEMS has been added to the Project Manual.

### 8. Section 27 0536 – CABLE TRAYS FOR COMMUNCAITONS SYSTEMS:

a. Specification Section 27 0536 – CABLE TRAYS FOR COMMUNICATIONS SYSTEMS has been added to the Project Manual.

#### 9. Section 27 0553 – IDENTIFICATION FOR COMMUNICATIONS SYSTEMS:

a. Specification Section 27 0553 – IDENTIFICATION FOR COMMUNICATIONS SYSTEMS has been added to the Project Manual.

### 10. Section 27 1100 – COMMUNICATIONS EQUIPMENT ROOM FITTINGS:

a. Specification Section 27 1100 – COMMUNICATIONS EQUIPMENT ROOM FITTINGS has been added to the Project Manual.

#### 11. Section 27 1116 – COMMUNICATIONS RACKS, FRAMES AND ENCLOSURES:

a. Specification Section 27 1116 – COMMUNICATIONS RACKS, FRAMES AND ENCLOSURES has been added to the Project Manual.

#### 12. Section 27 1500 – STRUCTURED CABLING:

a. Specification Section 27 1500 – STRUCTURED CABLING has been added to the Project Manual.

### 13. Section 27 4100 – COMMON WORK RESULTS FOR AUDIOVISUAL SYSTEMS:

 Specification Section 27 4100 – COMMON WORK RESULTS FOR AUDIOVISUAL SYSTEMS has been added to the Project Manual.

### 14. Section 27 4130 – AUDIOVISUAL SYSTEMS:

a. Specification Section 27 4130 – AUDIOVISUAL SYSTEMS has been added to the Project Manual.

### 15. Section 28 1000 – ACCESS CONTROL:

a. Specification Section 28 1000 – ACCESS CONTROL has been added to the Project Manual.

#### 16. Section 28 2000 - VIDEO SURVEILLANCE:

a. Specification Section 28 2000 – Video Surveillance has been added to the Project Manual.

## **DRAWINGS:**

### 1. Sheet G-000 – COVER:

- a. The sheet index has been updated to include missing sheets.
- b. Technology drawings have been added to the sheet index.

### 2. Sheet LS-001 – CODE SUMMARY:

a. Code Summary Chapter 6 has been updated to correctly show floor and roof construction as requiring 0 hours of fire resistance.

### 3. Sheet A-100 – SITE SURVEY:

a. Sheet A-100 – SITE SURVEY has been added to the Drawing Set.

### 4. Sheet A-101 – ARCHITECTURAL SITE PLAN:

a. Sheet A-101 – ARCHITECTURAL SITE PLAN has been added to the Drawing Set.

### 5. Sheet A-102 – OVERALL FLOOR PLAN – LEVEL 1 & 2:

a. Sheet A-102 – OVERALL FLOOR PLAN – LEVEL 1 & 2 has been added to the Drawing Set.

### 6. Sheet A-103 – OVERALL FLOOR PLAN – LEVEL 3 & ROOF:

a. Sheet A-103 – OVERALL FLOOR PLAN – LEVEL 3 & ROOF has been added to the Drawing Set.

## 7. Sheet A-104 – 1<sup>st</sup> FLOOR PLAN – CITY HALL:

- a. Replace this sheet in its entirety. See attachments
- b. All enlarged Plan Callouts have been renumbered.
- c. Updated door tags to reflect door schedule.

## 8. Sheet A-105 – 2<sup>nd</sup> FLOOR PLAN – CITY HALL:

- a. Replace this sheet in its entirety. See attachments
- b. All enlarged Plan Callouts have been renumbered.
- c. Notes added for clarification.

## 9. Sheet A-106 – 3<sup>rd</sup> FLOOR PLAN – CITY HALL:

- a. Replace this sheet in its entirety. See attachments
- b. All enlarged Plan Callouts have been renumbered.
- c. Notes added for clarification.

## 10. Sheet A-109 – 1<sup>st</sup> FLOOR PLAN – CITY COUNCIL:

- a. Replace this sheet in its entirety. See attachments
- b. All enlarged Plan Callouts have been renumbered.
- c. Notes added for clarification.

## 11. Sheet A-110 – 2<sup>nd</sup> FLOOR PLAN – CITY COUNCIL:

- a. Replace this sheet in its entirety. See attachments
- b. All enlarged Plan Callouts have been renumbered.
- c. Notes added for clarification.

## 12. Sheet A-601 – CH – 1<sup>st</sup> FLOOR ENLARGED ELEVATIONS:

- a. Replace this sheet in its entirety. See attachments
- b. All details/callouts have been renumbered to reflect floor plan changes.
- c. Added FLOOR BASE detail tags as needed.
- d. Added missing dimensions as needed.

e. Added missing detail/callout tags.

### 13. Sheet A-602 – CH – 1<sup>st</sup> FLOOR ENLARGED ELEVATIONS:

- a. Replace this sheet in its entirety. See attachments
- b. All details/callouts have been renumbered to reflect floor plan changes.
- c. Added FLOOR BASE detail tags as needed.
- d. Added missing dimensions as needed.
- e. Added missing detail/callout tags.

## 14. Sheet A-603 – CH – 2<sup>nd</sup> FLOOR ENLARGED ELEVATIONS:

- a. Replace this sheet in its entirety. See attachments
- b. All details/callouts have been renumbered to reflect floor plan changes.
- c. Added FLOOR BASE detail tags as needed.
- d. Added missing dimensions as needed.
- e. Added missing detail/callout tags.

### 15. Sheet A-604 – CH 2<sup>nd</sup> FLOOR ENLARGED ELEVATIONS:

- a. Replace this sheet in its entirety. See attachments
- b. All details/callouts have been renumbered to reflect floor plan changes.
- c. Added FLOOR BASE detail tags as needed.
- d. Added missing dimensions as needed.
- e. Added missing detail/callout tags.
- f. Added drawings 6, 7, and 8 elevations and plans of Mayor's office.

### 16. Sheet A-605 – CH – 3<sup>rd</sup> FLOOR ENLARGED PLANS & ELEVATIONS:

- a. Replace this sheet in its entirety. See attachments
- b. All details/callouts have been renumbered to reflect floor plan changes.
- c. Added FLOOR BASE detail tags as needed.
- d. Added missing dimensions as needed.
- e. Added missing detail/callout tags.

### 17. Sheet A-606 – CH – 3<sup>rd</sup> FLOOR ENLARGED PLANS & ELEVATIONS:

- a. Replace this sheet in its entirety. See attachments
- b. All details/callouts have been renumbered to reflect floor plan changes.
- c. Added FLOOR BASE detail tags as needed.
- d. Added missing dimensions as needed.
- e. Added missing detail/callout tags.

#### 18. Sheet A-607 – CC – 1<sup>st</sup> FLOOR ENLARGED ELEVATIONS:

- a. Replace this sheet in its entirety. See attachments
- b. All details/callouts have been renumbered to reflect floor plan changes.
- c. Added FLOOR BASE detail tags as needed.
- d. Added missing dimensions as needed.
- e. Added missing detail/callout tags.

### 19. Sheet A-608 – CC – 1<sup>st</sup> FLOOR ENLARGED ELEVATIONS:

- a. Replace this sheet in its entirety. See attachments
- b. All details/callouts have been renumbered to reflect floor plan changes.
- c. Added FLOOR BASE detail tags as needed.
- d. Added missing dimensions as needed.
- e. Added missing detail/callout tags.

### 20. Sheet A-609 – CC – 1<sup>st</sup> FLOOR ENLARGED PLANS & ELEVATIONS:

- a. Replace this sheet in its entirety. See attachments
- b. All details/callouts have been renumbered to reflect floor plan changes.
- c. Added FLOOR BASE detail tags as needed.
- d. Added missing dimensions as needed.
- e. Added missing detail/callout tags.

## 21. Sheet A-610 – CC – 1<sup>st</sup> FLOOR ENLARGED PLANS & ELEVATIONS:

- a. Replace this sheet in its entirety. See attachments
- b. All details/callouts have been renumbered to reflect floor plan changes.
- c. Added FLOOR BASE detail tags as needed.
- d. Added missing dimensions as needed.
- e. Added missing detail/callout tags.

## 22. Sheet A-611 – CC – 2<sup>nd</sup> FLOOR ENLARGED PLANS & ELEVATIONS:

- a. Replace this sheet in its entirety. See attachments
- b. All details/callouts have been renumbered to reflect floor plan changes.
- c. Added FLOOR BASE detail tags as needed.
- d. Added missing dimensions as needed.
- e. Added missing detail/callout tags.

### 23. Sheet A-612 – CC – 2<sup>nd</sup> FLOOR ENLARGED PLANS & ELEVATIONS:

- a. Replace this sheet in its entirety. See attachments
- b. All details/callouts have been renumbered to reflect floor plan changes.
- c. Added FLOOR BASE detail tags as needed.
- d. Added missing dimensions as needed.
- e. Added missing detail/callout tags.

### 24. Sheet A-613 – RESTROOM PLANS AND ELEVATIONS:

- a. Replace this sheet in its entirety. See attachments
- b. All details and callouts have been renumbered.
- c. Added Floor Base detail tags as needed.
- d. Added missing detail and callout tags.
- e. Added missing dimensions as needed.
- f. Updated height of hand dryers.
- g. Updated Toilet Accessory Legend MR-1, 2, & 3 UPDATED, TP-1 added.
- h. Updated Plumbing Legend FC-1 and added SD-1.

#### 25. Sheet A-614 – RESTROOM PLANS AND ELEVATIONS:

- a. Replace this sheet in its entirety. See attachments
- b. All details and callouts have been renumbered.
- c. Added Floor Base detail tags as needed.
- d. Added missing detail and callout tags.
- e. Added missing dimensions as needed.
- f. Updated height of hand dryers.
- g. Updated Toilet Accessory Legend MR-1, 2, & 3 UPDATED, TP-1 added.
- h. Updated Plumbing Legend FC-1 and added SD-1.

## 26. Sheet A-615 – RESTROOM PLANS AND ELEVATIONS:

- a. Replace this sheet in its entirety. See attachments
- b. All details and callouts have been renumbered.
- c. Added Floor Base detail tags as needed.
- d. Added missing detail and callout tags.

- e. Added missing dimensions as needed.
- f. Updated height of hand dryers.
- g. Updated Toilet Accessory Legend MR-1, 2, & 3 UPDATED, TP-1 added.
- h. Updated Plumbing Legend FC-1 and added SD-1.

### 27. Sheet A-616 – RESTROOM PLANS AND ELEVATIONS:

- a. Replace this sheet in its entirety. See attachments
- b. All details and callouts have been renumbered.
- c. Added Floor Base detail tags as needed.
- d. Added missing detail and callout tags.
- e. Added missing dimensions as needed.
- f. Updated height of hand dryers.
- g. Updated Toilet Accessory Legend MR-1, 2, & 3 UPDATED, TP-1 added.
- h. Updated Plumbing Legend FC-1 and added SD-1.

#### 28. Sheet A-617 – RESTROOM PLANS AND ELEVATIONS:

- a. Replace this sheet in its entirety. See attachments
- b. All details and callouts have been renumbered.
- c. Added Floor Base detail tags as needed.
- d. Added missing detail and callout tags.
- e. Added missing dimensions as needed.
- f. Updated height of hand dryers.
- g. Updated Toilet Accessory Legend MR-1, 2, & 3 UPDATED, TP-1 added.
- h. Updated Plumbing Legend FC-1 and added SD-1.

#### 29. Sheet A-631 – CEILING DETAILS:

- a. Replace this sheet in its entirety. See attachments
- b. Update Wood Soffit details to include "MITER ALL CORNERS NOTE".

#### 30. Sheet A-700 - FINISH SCHEDULE:

- a. Replace this sheet in its entirety. See attachments
- b. Updated "PNT-1" on finish legend.
- c. Updated "PWT-2 & PWT-3" tile sizes.
- d. Updated toilet accessory legend to include manufacturers for all toilet accessories.
- e. Updated Toilet Accessory Legend MR-1, 2, & 3 UPDATED, TP-1 added.
- f. Updated Plumbing Legend FC-1 and added SD-1.

#### 31. Sheet A-701 – 1st FLOOR FINISH PLANS – CITY HALL:

- a. Replace this sheet in its entirety. See attachments
- b. All details and callouts have been renumbered.
- c. Added Floor Base detail tags as needed.
- d. Added missing detail and callout tags.

### 32. Sheet A-702 – 2<sup>nd</sup> & 3<sup>rd</sup> FLOOR FINISH PLANS – CITY HALL:

- a. Replace this sheet in its entirety. See attachments
- b. All details and callouts have been renumbered.
- c. Added Floor Base detail tags as needed.
- d. Added missing detail and callout tags.

## 33. Sheet A-703 – 1<sup>st</sup> FLOOR FINISH PLANS – CITY COUNCIL:

- a. Replace this sheet in its entirety. See attachments
- b. All details and callouts have been renumbered.
- c. Added Floor Base detail tags as needed.

d. Added missing detail and callout tags.

### 34. Sheet A-704 – 2<sup>nd</sup> FLOOR FINISH PLANS – CITY COUNCIL:

- a. Replace this sheet in its entirety. See attachments
- b. All details and callouts have been renumbered.
- c. Added Floor Base detail tags as needed.
- d. Added missing detail and callout tags.

### 35. Sheet A-711 – TRANSITION / JOINT / TILE DETAILS:

- a. Replace this sheet in its entirety. See attachments
- b. Added rubber base detail
- c. Added wood base detail.

### 36. Sheet A-721 – MILLWORK DETAILS:

- a. Replace this sheet in its entirety. See attachments
- b. Details have been renumbered.
- c. Duplicate details deleted.

### 37. Sheet A-722 – MILLWORK DETAILS:

- a. Replace this sheet in its entirety. See attachments
- b. Details have been renumbered.
- c. Duplicate details deleted.

### 38. Sheet A-723 – MILLWORK DETAILS:

- a. Replace this sheet in its entirety. See attachments
- b. Details have been renumbered.
- c. Duplicate details deleted.

#### 39. Sheet A-724 – MILLWORK DETAILS:

- a. Replace this sheet in its entirety. See attachments
- b. Details have been renumbered.
- c. Duplicate details deleted.

### 40. Sheet A-802 – DOOR SCHEDULE:

- a. Dimensions of door type D10 were adjusted.
- b. Head/Jamb detail callouts were added to frame types F1, F2 and F3.
- c. Details were relocated to sheet A-804 DOOR DETAILS.
- d. Hardware sets have been added to the door schedule.
- e. Head/Jamb detail callouts have been added to the door schedule.

#### 41. Sheet A-804 – DOOR DETAILS:

a. Sheet A-804 – DOOR DETAILS has been added to the Drawing Set.

#### 42. Sheet T-001 – TECHNOLOGY – LEGEND AND NOTES:

a. Sheet T-001 – LEGEND AND NOTES has been added to the Drawing Set. The sheet index has been updated to include this sheet.

## 43. Sheet T-002 – TECHNOLOGY - DETAILS:

a. Sheet T-002 – TECHNOLOGY – DETAILS has been added to the Drawing Set. The sheet index has been updated to include this sheet.

#### 44. Sheet T-003 – TECHNOLOGY - DETAILS:

a. Sheet T-003 – TECHNOLOGY - DETAILS has been added to the Drawing Set. The sheet index has been updated to include this sheet.

#### 45. Sheet T-004 – TECHNOLOGY - DETAILS:

a. Sheet T-004 – TECHNOLOGY - DETAILS has been added to the Drawing Set. The sheet index has been updated to include this sheet.

#### 46. Sheet T-005 – TECHNOLOGY – ACCESS CONTROL DETAILS:

a. Sheet T-005 – ACCESS CONTROL DETAILS has been added to the Drawing Set. The sheet index has been updated to include this sheet.

### 47. Sheet T-006 – TECHNOLOGY – CAMERA SCHEDULE:

a. Sheet T-006 – TECHNOLOGY – CAMERA SCHEDULE has been added to the Drawing Set. The sheet index has been updated to include this sheet.

#### 48. Sheet T-007 – TECHNOLOGY – ACS SCHEDULE:

a. Sheet T-007 – TECHNOLOGY – ACS SCHEDULE has been added to the Drawing Set. The sheet index has been updated to include this sheet.

### 49. Sheet T-100 – TECHNOLOGY – SITE PLAN:

a. Sheet T-100 – TECHNOLOGY – SITE PLAN has been added to the Drawing Set. The sheet index has been updated to include this sheet.

## 50. Sheet T-200 – TECHNOLOGY – 1<sup>ST</sup> FLOOR DEMOLITION PLAN – CITY HALL:

a. Sheet T-200 – TECHNOLOGY – 1<sup>ST</sup> FLOOR DEMOLITION PLAN – CITY HALL has been added to the Drawing Set. The sheet index has been updated to include this sheet.

### 51. Sheet T-201 – TECHNOLOGY – 3<sup>RD</sup> FLOOR DEMOLITION PLAN – CITY HALL:

a. Sheet T-201 – TECHNOLOGY – 3<sup>RD</sup> FLOOR DEMOLITION PLAN – CITY HALL has been added to the Drawing Set. The sheet index has been updated to include this sheet.

### 52. Sheet T-300 – TECHNOLOGY – TELECOM – 1<sup>ST</sup> & 2<sup>ND</sup> FLOOR PLANS – CITY HALL:

a. Sheet T-300 – TECHNOLOGY – TELECOM – 1<sup>ST</sup> & 2<sup>ND</sup> FLOOR PLANS – CITY HALL has been added to the Drawing Set. The sheet index has been updated to include this sheet.

#### 53. Sheet T-301 – TECHNOLOGY – TELECOM – 3<sup>RD</sup> FLOOR PLAN – CITY HALL:

a. Sheet T-301 – TECHNOLOGY – TELECOM – 3<sup>RD</sup> FLOOR PLAN – CITY HALL has been added to the Drawing Set. The sheet index has been updated to include this sheet.

### 54. Sheet T-302 – TECHNOLOGY – TELECOM – 1<sup>ST</sup> FLOOR PLAN – CITY COUNCIL:

a. Sheet T-302 – TECHNOLOGY – TELECOM – 1<sup>ST</sup> FLOOR PLAN – CITY COUNCIL has been added to the Drawing Set. The sheet index has been updated to include this sheet.

## 55. Sheet T-303 – TECHNOLOGY – TELECOM 2<sup>ND</sup> FLOOR PLAN – CITY COUNCIL:

a. Sheet T-303 – TECHNOLOGY – TELECOM 2<sup>ND</sup> FLOOR PLAN – CITY COUNCIL has been added to the Drawing Set. The sheet index has been updated to include this sheet.

### 56. Sheet T-400 – TECHNOLOGY – COMM – 1<sup>ST</sup> & 2<sup>ND</sup> FLOOR PLAN – CITY HALL:

a. Sheet T-400 − TECHNOLOGY − COMM − 1<sup>ST</sup> & 2<sup>ND</sup> FLOOR PLAN − CITY HALL has been added to the Drawing Set. The sheet index has been updated to include this sheet.

## 57. Sheet T-401 – TECHNOLOGY – COMM – 3<sup>RD</sup> FLOOR PLAN – CITY HALL.:

a. Sheet T-401 – TECHNOLOGY – COMM – 3<sup>RD</sup> FLOOR PLAN – CITY HALL has been added to the Drawing Set. The sheet index has been updated to include this sheet.

## 58. Sheet T-402 – TECHNOLOGY – COMM – 1<sup>ST</sup> FLOOR PLAN – CITY COUNCIL:

a. Sheet T-402 – TECHNOLOGY – COMM – 1<sup>ST</sup> FLOOR PLAN – CITY COUNCIL has been added to the Drawing Set. The sheet index has been updated to include this sheet.

## 59. Sheet T-403 – TECHNOLOGY – COMM – 2<sup>ND</sup> FLOOR PLAN – CITY COUNCIL:

a. Sheet T-403 – TECHNOLOGY – COMM – 2<sup>ND</sup> FLOOR PLAN – CITY COUNCIL has been added to the Drawing Set. The sheet index has been updated to include this sheet.

### 60. Sheet T-500 – TECHNOLOGY – PATHWAYS – 1<sup>ST</sup> & 2<sup>ND</sup> FLOOR CITY HALL:

a. Sheet T-500 – TECHNOLOGY – PATHWAYS – 1<sup>ST</sup> & 2<sup>ND</sup> FLOOR CITY HALL has been added to the Drawing Set. The sheet index has been updated to include this sheet.

### 61. Sheet T-501 – TECHNOLOGY – PATHWAYS – 3<sup>RD</sup> FLOOR CITY HALL:

a. Sheet T-501 – TECHNOLOGY – PATHWAYS – 3<sup>RD</sup> FLOOR CITY HALL has been added to the Drawing Set. The sheet index has been updated to include this sheet.

### 62. Sheet T-502 – TECHNOLOGY – PATHWAYS – 1<sup>ST</sup> FLOOR PLAN CITY COUNCIL:

a. Sheet T-502 – TECHNOLOGY – PATHWAYS – 1<sup>ST</sup> FLOOR PLAN CITY COUNCIL has been added to the Drawing Set. The sheet index has been updated to include this sheet.

### 63. Sheet T-503 – TECHNOLOGY – PATHWAYS – 2<sup>ND</sup> FLOOR PLAN CITY COUNCIL:

a. Sheet T-503 has been added to the Drawing Set. The sheet index has been updated to include this sheet.

### 64. Sheet T-900 – TECHNOLOGY – TELECOM ENLARGEMENTS:

a. Sheet T-900 – TECHNOLOGY – TELECOM ENLARGEMENTS has been added to the Drawing Set. The sheet index has been updated to include this sheet.

## 65. Sheet T-901 – TECHNOLOGY – AV ENLARGEMENTS:

a. Sheet T-901 – TECHNOLOGY – AV ENLARGEMENTS has been added to the Drawing Set. The sheet index has been updated to include this sheet.

#### 66. Sheet T-902 – TECHNOLOGY – AV ELEVATIONS & LINE DIAGRAM:

a. Sheet T-902 – TECHNOLOGY – AV ELEVATIONS & LINE DIAGRAM has been added to the Drawing Set. The sheet index has been updated to include this sheet.

### 67. Sheet T-903 – TECHNOLOGY – AV LINE DIAGRAM:

a. Sheet T-903 – TECHNOLOGY – AV LINE DIAGRAM has been added to the Drawing Set. The sheet index has been updated to include this sheet.

### ATTACHMENTS:

1.	Bidders Questions & Clarifications Spread Sheet	8 1/2X11 – 2 sheets	
2.	00 0110 – TABLE OF CONTENTS	8 1/2X11 – 6 sheets	Rev. 1 – 12.09.24
3.	01 1000 – SUMMARY	8 1/2X11 – 3 sheets	Rev. 1 – 12.09.24
4.	07 1400 – FLUID-APPLIED ROOFING AND WATERPROOFING	8 1/2X11 – 5 sheets	Rev. 1 – 12.09.24
5.	07 7600 – PEDESTAL SUPPORTED DECK PAVER SYSTEM	8 1/2X11 – 4 sheets	Rev. 1 – 12.09.24
6.	08 7100 – DOOR HARDWARE	8 1/2x11 – 30 sheet	Rev. 1 – 12.09.24
7.	27 0526 – GROUNDING AND BONDING FOR COMMUNICATIONS SYSTEMS	8 1/2x11 – 6 sheets	Rev. 1 – 12.09.24
8.	27 0529 – HANGERS AND SUPPORTS FOR COMMUNICATIONS SYSTEMS	8 1/2x11 – 6 sheets	Rev. 1 – 12.09.24

9.	27 0536 – CABLE TRAYS FOR COMMUNICATIONS SYSTEMS	8 1/2x11 – 8 sheets	Rev. 1 – 12.09.24
10.	27 0553 – IDENTIFICATION FOR COMMUNICATIONS SYSTEMS	8 1/2x11 – 8 sheets	Rev. 1 – 12.09.24
11.	27 1100 – COMMUNICATIONS FOR EQUIPMENT ROOM FITTINGS	8 1/2x11 – 6 sheets	Rev. 1 – 12.09.24
12.	27 1116 – COMMUNICATIONS RACKS, FRAMES, AND ENCLOSURES	8 1/2x11 – 6 sheets	Rev. 1 – 12.09.24
13.	27 1500 – STRUCTURED CABLING	8 1/2x11 – 12 sheets	Rev. 1 – 12.09.24
14.	27 4100 – COMMON WORK RESULTS FOR AUDIOVISUAL SYSTEMS	8 1/2x11 – 20 sheets	Rev. 1 – 12.09.24
15.	27 4130 – AUDIOVISUAL SYSTEMS	8 1/2x11 – 12 sheets	Rev. 1 – 12.09.24
16.	28 1000 – ACCESS CONTROL	8 1/2x11 – 10 sheets	Rev. 1 – 12.09.24
17.	28 2000 – VIDEO SURVEILLANCE	8 1/2x11 – 10 sheets	Rev. 1 – 12.09.24
18.	G-000 – COVER	30x42 – 1 sheet	Rev. 1 – 12.09.24
19.	LS001 – CODE SUMMARY	30x42 – 1 sheet	Rev. 1 – 12.09.24
20.	A-100 – SITE SURVEY	30x42 – 1 sheet	Rev. 1 – 12.09.24
21.	A-101 – ARCHITECTURAL SITE PLAN	30x42 – 1 sheet	Rev. 1 – 12.09.24
22.	A-102 – OVERALL FLOOR PLAN – LEVEL 1 & 2	30x42 – 1 sheet	Rev. 1 – 12.09.24
23.	A-103 – OVERALL FLOOR PLAN – LEVEL 3 & ROOF	30x42 – 1 sheet	Rev. 1 – 12.09.24
24.	A-104 1ST FLOOR PLAN - CITY HALL	30x42 – 1 sheet	Rev. 1 – 12.09.24
25.	A-105 2ND FLOOR PLAN - CITY HALL	30x42 – 1 sheet	Rev. 1 – 12.09.24
26.	A-106 3RD FLOOR PLAN - CITY HALL	30x42 – 1 sheet	Rev. 1 – 12.09.24
27.	A-109 1ST FLOOR PLAN - CITY COUNCIL	30x42 – 1 sheet	Rev. 1 – 12.09.24
28.	A-110 2ND FLOOR PLAN - CITY COUNCIL	30x42 – 1 sheet	Rev. 1 – 12.09.24
29.	A-121 1ST FLOOR RCP - CITY HALL	30x42 – 1 sheet	Rev. 1 – 12.09.24
30.	A-122 2ND FLOOR RCP - CITY HALL	30x42 – 1 sheet	Rev. 1 – 12.09.24
31.	A-123 3RD FLOOR RCP - CITY HALL	30x42 – 1 sheet	Rev. 1 – 12.09.24
32.	A-124 1ST FLOOR RCP - CITY COUNCIL	30x42 – 1 sheet	Rev. 1 – 12.09.24
33.	A-125 2ND FLOOR RCP - CITY COUNCIL	30x42 – 1 sheet	Rev. 1 – 12.09.24
34.	A-601 CH - 1ST FLOOR ENLARGED ELEVATIONS	30x42 – 1 sheet	Rev. 1 – 12.09.24
35.	A-602 CH - 1ST FLOOR ENLARGED ELEVATIONS	30x42 – 1 sheet	Rev. 1 – 12.09.24
36.	A-603 CH - 2ND FLOOR ENLARGED PLANS & ELEVATIONS	30x42 – 1 sheet	Rev. 1 – 12.09.24
37.	A-604 CH - 2ND FLOOR ENLARGED ELEVATIONS	30x42 – 1 sheet	Rev. 1 – 12.09.24
38.	A-605 CH – 3RD FLOOR ENLARGED PLANS & ELEVATIONS	30x42 – 1 sheet	Rev. 1 – 12.09.24
39.	A-606 CH – 3RD FLOOR ENLARGED PLANS & ELEVATIONS	30x42 – 1 sheet	Rev. 1 – 12.09.24
40.	A-607 CC - 1ST FLOOR ENLARGED ELEVATIONS	30x42 – 1 sheet	Rev. 1 – 12.09.24
41.	A-608 CC - 1ST FLOOR ENLARGED ELEVATIONS	30x42 – 1 sheet	Rev. 1 – 12.09.24
42.	A-609 CC - 1ST FLOOR ENLARGED PLANS & ELEVATIONS	30x42 – 1 sheet	Rev. 1 – 12.09.24
43.	A-610 CC - 1ST FLOOR ENLARGED PLANS & ELEVATIONS	30x42 – 1 sheet	Rev. 1 – 12.09.24
44.	A-611 CC - 2ND FLOOR ENLARGED ELEVATIONS	30x42 – 1 sheet	Rev. 1 – 12.09.24
45.	A-612 CC - 2ND FLOOR ENLARGED PLANS & ELEVATIONS	30x42 – 1 sheet	Rev. 1 – 12.09.24
46.	A-613 RESTROOM PLANS AND ELEVATIONS	30x42 – 1 sheet	Rev. 1 – 12.09.24
47.	A-614 RESTROOM PLANS AND ELEVATIONS	30x42 – 1 sheet	Rev. 1 – 12.09.24
48.	A-615 RESTROOM PLANS AND ELEVATIONS	30x42 – 1 sheet	Rev. 1 – 12.09.24
49.	A-616 RESTROOM PLANS AND ELEVATIONS	30x42 – 1 sheet	Rev. 1 – 12.09.24
50.	A-617 RESTROOM PLANS AND ELEVATIONS	30x42 – 1 sheet	Rev. 1 – 12.09.24
51.	A-631 CEILING DETAILS	30x42 – 1 sheet	Rev. 1 – 12.09.24
52.	A-700 FINISH SCHEDULE	30x42 – 1 sheet	Rev. 1 – 12.09.24
53.	A-701 1ST FLOOR FINISH PLANS - CITY HALL	30x42 – 1 sheet	Rev. 1 – 12.09.24
54.	A-702 2ND & 3RD FLOOR FINISH PLANS - CITY HALL	30x42 – 1 sheet	Rev. 1 – 12.09.24
55.	A-703 1ST FLOOR FINISH PLANS - CITY COUNCIL	30x42 – 1 sheet	Rev. 1 – 12.09.24
56.	A-704 2ND FLOOR FINISH PLANS - CITY COUNCIL	30x42 – 1 sheet	Rev. 1 – 12.09.24
57.	A-711 TRANSITION / JOINT / TILE DETAILS	30x42 – 1 sheet	Rev. 1 – 12.09.24
58	A-721 MILLWORK DETAILS	30x42 – 1 sheet	Rev. 1 – 12 09 24
59	A-722 MILLWORK DETAILS	30x42 – 1 sheet	Rev. 1 – 12.09.24
60 60	A-723 MILLWORK DETAILS	30x42 = 1 sheet	Rev 1 – 12.09.24
61	A-724 MILLWORK DETAILS	30x42 = 1 sheet	Rev 1 – 12.09.24
		2000 1 100000	

62.	A-802 – DOOR SCHEDULE	30x42 – 1 sheet	Rev. 1 – 12.09.24
63.	A-804 – DOOR DETAILS	30x42 – 1 sheet	Rev. 1 – 12.09.24
64.	T-001 – TECHNOLOGY – LEGEND AND NOTES	30x42 – 1 sheet	Rev. 1 – 12.09.24
65.	T-002 – TECHNOLOGY – DETAILS	30x42 – 1 sheet	Rev. 1 – 12.09.24
66.	T-003 – TECHNOLOGY – DETAILS	30x42 – 1 sheet	Rev. 1 – 12.09.24
67.	T-004 – TECHNOLOGY – DETAILS	30x42 – 1 sheet	Rev. 1 – 12.09.24
68.	T-005 – TECHNOLOGY – DETAILS	30x42 – 1 sheet	Rev. 1 – 12.09.24
69.	T-006 – TECHNOLOGY – CAMERA SCHEDULE	30x42 – 1 sheet	Rev. 1 – 12.09.24
70.	T-007 – TECHNOLOGY – ACS SCHEDULE	30x42 – 1 sheet	Rev. 1 – 12.09.24
71.	T-100 – TECHNOLOGY – SITE PLAN	30x42 – 1 sheet	Rev. 1 – 12.09.24
72.	T-200 – TECHNOLOGY – 1 <sup>ST</sup> FLOOR DEMOLITION PLAN – CITY HALL	30x42 – 1 sheet	Rev. 1 – 12.09.24
73.	T-201 – TECHNOLOGY – 3 <sup>RD</sup> FLOOR DEMOLITION PLAN – CITY HALL	30x42 – 1 sheet	Rev. 1 – 12.09.24
74.	T-300 – TECHNOLOGY – TELECOM – 1 <sup>ST</sup> & 2 <sup>ND</sup> FLOOR PLAN – CITY HALL	30x42 – 1 sheet	Rev. 1 – 12.09.24
75.	T-301 – TECHNOLOGY – TELECOM – 3 <sup>RD</sup> FLOOR PLAN – CITY HALL	30x42 – 1 sheet	Rev. 1 – 12.09.24
76.	T-302 – TECHNOLOGY – TELECOM – 1 <sup>ST</sup> FLOOR PLAN – CITY COUNCIL	30x42 – 1 sheet	Rev. 1 – 12.09.24
77.	T-303 – TECHNOLOGY – TELECOM – 2 <sup>ND</sup> FLOOR PLAN – CITY COUNCIL	30x42 – 1 sheet	Rev. 1 – 12.09.24
78.	T-400 – TECHNOLOGY – COMM – 1 <sup>ST</sup> & 2 <sup>ND</sup> FLOOR PLAN – CITY HALL	30x42 – 1 sheet	Rev. 1 – 12.09.24
79.	T-401 – TECHNOLOGY – COMM – 3 <sup>RD</sup> FLOOR PLAN – CITY HALL	30x42 – 1 sheet	Rev. 1 – 12.09.24
80.	T-402 – TECHNOLOGY – COMM – 1 <sup>ST</sup> FLOOR PLAN – CITY COUNCIL	30x42 – 1 sheet	Rev. 1 – 12.09.24
81.	T-403 – TECHNOLOGY – COMM – 2 <sup>ND</sup> FLOOR PLAN – CITY COUNCIL	30x42 – 1 sheet	Rev. 1 – 12.09.24
82.	T-500 – TECHNOLOGY – PATHWAYS – 1 <sup>ST</sup> & 2 <sup>ND</sup> FLOOR CITY HALL	30x42 – 1 sheet	Rev. 1 – 12.09.24
83.	T-501 – TECHNOLOGY – PATHWAYS – 3 <sup>RD</sup> FLOOR CITY HALL	30x42 – 1 sheet	Rev. 1 – 12.09.24
84.	T-502 – TECHNOLOGY – PATHWAYS – 1 <sup>ST</sup> FLOOR PLAN CITY COUNCIL	30x42 – 1 sheet	Rev. 1 – 12.09.24
85.	T-503 – TECHNOLOGY – PATHWAYS – 2 <sup>ND</sup> FLOOR PLAN CITY COUNCIL	30x42 – 1 sheet	Rev. 1 – 12.09.24
86.	T-900 – TECHNOLOGY – TELECOM ENLARGEMENTS	30x42 – 1 sheet	Rev. 1 – 12.09.24
87.	T-901 – TECHNOLOGY – AV ENLARGEMENTS	30x42 – 1 sheet	Rev. 1 – 12.09.24
88.	T-902 – TECHNOLOGY – AV ELEVATIONS & LINE DIAGRAM	30x42 – 1 sheet	Rev. 1 – 12.09.24
89.	T-903 – TECHNOLOGY – AV LINE DIAGRAM	30x42 – 1 sheet	Rev. 1 – 12.09.24

END OF ADDENDUM #2

	Gadsden City Hall Gadsden, AL								
	WBA: 23-083								
Master #	DATE	FROM	DWG./ SPEC	QUESTION	CLARIFICATION	Dwg./ Spec. Change?	Add. #	Date Add. Issued	TRADE
1	11/26/24	P&C Construction	08 7100 - Door Hardware	Specifications Table of Contents lists Section 08 7100 - Door Hardware. However, this Section is missing from the specifications. Please provide specification section	Specification Section 08 7100 - Door Hardware has been issued in it's entirety in Addendum #2.	Yes	2	12/9/2024	Architecture
2	11/26/24	Dominguez Persons	LS-001	Please clarify if sprayed freproofing is required, and if required-where is it required. Sheet LS001-Chapter 6 calls for Type IIB - which requires 0 hourly rating for structural frame. (Nor construction and ceiling construction, but shows 1 hour rating for floor construction and roof construction. Please clarify how the 1 hour rated roof and floor construction is be provided and where it is to be provided.	LS-001 code summary has been updated to correctly show floor and roof construction as requiring 0-hours of fire resistance	Yes	2	12/9/2024	Architecture
3	11/27/24	P&C Construction	Missing Specification	The following specification sections are listed in the specification table of contents, but there are no specification for the sections: 07 5200 - Modified Bluminous Membrane Roofing, 07 7600 - Pedestal Supported Deck Paver System, 08 7100 - Door Hardware. Please provide missing specification sections.	Specification Sections 07 1400 BSD Fluid Applied Roof and WP has been issued as part of addendum 2. Previous section 07 5200 - Modified Bituminous Membrane Roofing has been removed from the project. Specification Section 07 7600 - User Pedestal Paver System has been issued as part of addendum 2. Specification Section 08 7100 - Door Hardware System has been issued as part of addendum 2.	Yes	2	12/9/2024	Architecture
5	11/27/24	P&C Construction	Drawing Index	The following drawings are not listed on the Drawing Index on Drawing G 000: AD-104, AD-105, A-609, A-610, A-621, A-801	Sheet index has been updated to include sheets AD-104, AD-105, A-609, A-610, A- 621, A-801	Yes	2	12/9/2024	Architecture
e	11/27/24	P&C Construction	Drawing Index	The following drawings are listed on the Drawing Index on Drawing G-000, but are missing from the downloaded drawings: A-100, A-101, A-102, A-103, P-101	Sheets A-100, A-101, A-102, A-103 have been issued as part of Addendum #2. Sheet P-101 has been removed from the sheet index.	Yes	2	12/9/2024	Architecture
7	11/27/24	P&C Construction	Specification Section 01 1000	Specification Section 01 1000, Part 1.06 references Mobile County Sportsplex. Please delete all references to the Mobile County Sportsplex	All references to Mobile County Sportsplex have been removed from the specification. Section 01 1000 summary has been reissued in addendum 2.	Yes	2	12/9/2024	Architecture
8	11/27/24	P&C Construction	Specification Section 01 3100	Specification Section 01 3100, Part 3.01 states Newforma Project Cloud is the required submittal service for this project. Is Procore an acceptable alternate	Procore is an acceptable alternate.	No		12/9/2024	Architecture
11	12/03/24	Dominguez Persons	08 7100 - Door Hardware	Please provide the door hardware schedule.	Specification Section 08 7100 - Door Hardware has been issued in it's entirety in Addendum #2. Sheet A-802 - DOOR SCHEDULE has been updated to include hardware sets as part of the door schedule	Yes	2	12/9/2024	Architecture
13	12/03/24	Dominguez Persons		Is this project Davis Bacon Wage Rate and Buy American Act Requirement	No. This project will not require Davis Bacon Wage Rate or Buy American Act.	No	2	12/9/2024	Architecture
18	12/04/24	P&C Construction	Specification Section 10 2800	Provide model number for toilet paper holder and soap dispenser.	Toilet paper holder and soap dispenser model numbers have been added to the toilet accessory legend on all finish plan sheets.	Yes	2	12/9/2024	Interiors
29	12/04/24	P&C Construction	Drawing A-802	Reviewing the Door Schedule on Drawing A/802, we find the following doors are not shown on the Door Schedule: •CH101 •CH102 •CH111 is listed twice, but different doors. Which CH112 is correct? •CH112 is listed twice, but different doors. Which CH112 is correct? •CC1228-City Council Corridor to Exterior •138-City Hall 2nd Floor at Closet 128 •CH211-Mayor's Office to Balcony	All doors and hardware sets have been added to sheet A-802. Sheet has been reissued as part of addendum 2.	Yes	2	12/9/2024	Architecure
35	12/04/24	Dominguez Persons	Drawing A-802	I don't see CH101, CH102, CH211, CC122B on the door schedule. Please Advise Door CC264 is single door on a balcony, but the door schedule shows it as a pair of wood doors. Door CC253 on the door schedule is labeled "GL" as an all glass door, but the door type says D5 which is a wood door.	All doors and hardware sets have been added to sheet A-802. Sheet has been reissued as part of addendum 2.	Yes	2	12/09/24	Architecture
37	12/05/24	Dominguez Persons		Are the Card Readers part of the project? Security company noticed they were called out on the door schedule as well as automatic openers. If Card Readers are part of this project please provide spec section or will these be provided by the owner and GC is to be responsible for pulling electrical wires.	All technology drawings have been issued as part of addenedum 2. As well as an updated door schedule and hardware sets.	Yes	2	12/09/24	Technology
42	12/06/24	Dominguez Persons		In reviewing the spec documents, I came across Page 4 of contract documents which states that the notary must be located in the County of Etowah. Please confirm if any Alabama State Notary will be acceptable.	Any Alabama State notary will be acceptable.	No	2	12/9/2024	Architecture
43	12/06/24	Dominguez Persons	Specification Division 27	Please confirm the TVs are not part of the project, the plan page A-611 calls for AV sheets for the TV spec. Table of contents in spec book says Division 27 is not used. Please advise.	All technology drawings have been issued as part of addenedum 2. As well as an updated door schedule and hardware sets.	Yes	2	12/09/24	Technology
4	11/27/24	P&C Construction	Missing Specification	Specificaitons sections for the following items are not included in the project specifications: specifications for aluminum rolling door shown on drawing A-802 as door type D10. Specifications for elevators shown on the state at the state data data and the state of the state					Architecture
10	11/27/24	P&C Construction	Specification Section 06 4100	souccurs and and antimecruital utawings Specification Section 06 4100, Part 1.06, A1 states the fabricator must be an "accredited participant in the specified certification program prior to commencement of fabrication and throughout the duration of the project." There is no specified certification program listed, and Part 1.06 A only requires the fabricator to have 5 years of documented experience. Please delete the requirement to be an accredited participant in the unnamed specified certification program. Beause for Section 05.2000 Acciliance utamatical certification					Architecture
	12/02/04	Construction	Section 05 7000	of HDI Railings.				<u> </u>	Arabitactura
12	12/03/24	Persons	A-200	the font and size TBD. Will we be told the size for the building and it says know what to quote or will we be provided an allowance for this item? Please confirm the back it letters in Lobby 102 and I obby 200 are not					An on mediure
14	12/03/24	Dominguez Persons	C-301	On the civil pages, on the legend, should item "D" on C-301 is meant to be labeled as item "E". Please advise.	Yes you are correct. Item "D* shown in locations of "Medium Duty Bituminous Pavement" should be labeled as Item "E". This will be corrected in the next addendum.				Civil
15	12/03/24	Dominguez Persons		the spec book. Would this be considered being removed to allow for					Architecture
16	12/03/24	Dominguez Persons	Substitution Request: Section 05 7000	Request for Section 05 7000 Architectural Railings submitted on behalf on VIVA Railings					Architecture
17	12/03/24	Dominguez	Substitution Request:	Request for Substitution of Section 28 4600 - Part 4 to include Edwards					Architecture
L	1	rersons	Section 28 4600	LO 14 as an authorized dealer of listed fire alarm systems	1	1		1	

Gadsden City Hall			Gadsden City H	lall	Gadsden, AL				
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Master	DATE	FROM	DWG./ SPEC	QUESTION	CLARIFICATION	Dwg./ Spec. Change?	Add. #	Date Add. Issued	TRADE
20	12/04/24	P&C Construction	Specification Section 10 2800	Provide model number for mirrors. Part 2.04, B. 4 describes a tilt mirror, but ilt mirror not available in 24% 48 <sup>2</sup> and 36 <sup>4</sup> and 84 <sup>a</sup> sizes shown on the drawings. Do you want a standard framed mirror?					Interiors
23	12/04/24	P&C Construction	Specification Section 10 2800	Mirrors are specified in Section 10 2800 and also in Section 08 8300. We assume the mirrors in Section 10 2800 are shown on the Toilet Accessory Legend shown on Drawings A-605, A-613 thru A-617. Which mirrors are specified in Section 08 8300?					Interiors
25	12/04/24	P&C Construction	Drawings A-122 & A-125	Please provide specifications for the window treatments shown on					Interiors
28	12/04/24	P&C Construction	Specification Section 07 4213	Specification Section 074213 23 covers the ACM on the project. The mechanical screen wall is a profiled single skin metal panel, not an insulated panel which is typically in Specification Section 07421323, Part two completely different materials. However in Section 07421323, Part 202 C they are specifying the "Perforated" panels which are the mechanical screen panels on this project, however, those panels are not drawn as ACM panels they are drawn and referenced as single skin panels. So we will need a Basis of Design to be able to price these panels on the same level as our competitors. Based upon the profile shown on Detail 6/A-521, I would assume that the Pac-Clad HWP-12 or HWP-16 panels would be the best match. Those Pac-Clad panels have been used for these screens many times and they usually ask for 24 GA and Pac-Clad is one of the few manufacturers that can and will perforate as outlined here.					Architecture
30	12/04/24	Dominguez Persons		Most roofing contractors will not install the hot rubberized asphalt roofing underneath the roof pavers. Can this be changed to TPO so that the roof					Architecture
31	12/04/24	Clements Dean	Drawings AD-104, A-124	is all under one warranty? The architectural demo plans (AD-104) shade the Merrill I yoch building					Architecture
01	1210 112 1		& A-125	and say no work in scope other than the lie-in. However, the RCP plans (A-124, A-125) for the new City Council building appear to show new ceilings in the Merrill Lynch building as well. Please clarify the extent of demollion/new work for the Merrill Lynch building.					
32	12/04/24	Clements Dean		Is there asbestos in the project? If encountered, will it be handled by a change order or by the owner?					Architecture
33	12/04/24	Clements Dean	Drawing 3&4/A-514	At precast panel conditions similar to details 334/4514 at storefront windows, our manufacturers are telling us 15/8° precast panels are too thin to produce. They will require a minimum of 35/8° thick panels. Can this detail be worked out so that the panels can be made in 35/8° thicknesses?					Architecture
34	12/04/24	Clements Dean	Signage	There is a spec section for signage, but the drawings or specs do not indicate quantities or locations for the different lypes of signs. Please provide a schedule with quantities for the types of signage, or show on the drawings. Or, provide an allowance to be figured out at a later date.					Architecture
36	12/05/24	Dominguez Persons	Drawing A-524	There is currently no spec section for the single skin metal panels on the Perforated Roof Screen (Ref. Detail 6/45.21). We need a basis of design for this metal panel? ACM Manufacture suggests Pac-Clad HWP-12 or HWP-16 because the profiles match what is drawn and Pac-Clad will allow there materials to be perforted. The typical Specification Section for these single skin panels is 074213.13.					Architecture
38	12/05/24	Dominguez Persons		Please provide the elevator spec section. Will there be a machine room next to the elevator in the closet electric room 0124? Will the other building elevators be upgraded or modernized?					Architecture
39	12/06/24	Dominguez Persons	Substitution Request: Section 07 4213.23 ACM Panels	Request to add CCS Image Group to list of fabricators.					Architecture
40	12/06/24	Dominguez Persons	ACT Ceiling	ACT ceiling company wanted to bring to attention that interfude grid systems with inter recessed lights is going to be difficult to achieve. I do not believe that they will be compatible. Dimensional grid must lock logether in factory-to-factory connections. We would have to have cross tees that are made specifically to do so.					Interiors
41	12/06/24	Clements Dean	Specification 06 4100	Specification section 064100 for Architectural Wood Casework is requiring labels or certificates as required by the AWSINAAWS certification program. This is limiting a tot of companies from bidding because of these requirements. Will you guys stand firm on these requirements or can there be some wiggle room to promote competition?					Architecture

## SECTION 00 0110

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- 00 3100 Information Available to Bidders

00 3100.1 - Geotechnical Report

#### **DIVISION 00 – PROJECT FORMS AND DOCUMENTS**

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- 00 6103 Bid Specifications
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  - Bid Bond
  - Statement of Bidder Qualifications
  - Non-collusion Affidavit of Prime Bidder
  - Equal Opportunity Report Statement
  - Contractor's Certification of Non-segregated Facilities
- 00 6104 Contract
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  - Labor & Material Bond
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- 00 6110 Supplemental General Conditions
- 00 6230 AIA Document G702 2009 Application and Certificate for Payment
- 00 6240 AIA Document G703 Continuation Sheet 1992 (Schedule of Values)
- 00 6280 AIA Document G701 2017 Change Order
- 00 6300 AIA Document G704 Certificate of Substantial Completion 2017
- 00 6301 AIA Document G705 List of Subcontractors 2001
- 00 6305 AIA Document G706 1992 Contractor's Affidavit of Payment of Debts and Claims
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- 00 6320 AIA Document G707 1994 Consent of Surety to Final Payment
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- 00 7100 AIA Document G714 2017 Construction Change Directive

00 8000 - AIA Document G716 Request for Information (RFI)

#### SPECIFICATIONS

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- 01 2100 Allowances
- 01 2500 Substitution Procedures
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- 01 4216 Definitions
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For Pavements and Site Improvements, see Division 32

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- 26 2726 Wiring Devices
- 26 2813 Fuses
- 26 2816.16 Enclosed Switches
- 26 4300 Surge Protective Devices
- 26 5100 Interior Lighting
- 26 5600 Exterior Lighting

#### **DIVISION 27 – COMMUNICATIONS**

- 27 0526 Grounding and Bonding for Communications Systems
- 27 0529 Hangers and Supports for Communications Systems
- 27 0536 Cable Trays for Communications Systems
- 27 0553 Identification for Communications Systems
- 27 1100 Communications Equipment Room Fittings
- 27 1116 Communications Racks, Frames, and Enclosures
- 27 1500 Structured Cabling
- 27 4100 Common Work Results for Audiovisual Systems
- 27 4130 Audiovisual Systems

#### **DIVISION 28 – ELECTRONIC SAFETY AND SECURITY**

- 28 1000 Access Control
- 28 2000 Video Surveillance
- 28 4600 Fire Detection and Alarm

#### **Division 31 – Earthwork**

- 31 0000 Earthwork
- 31 0516 Aggregate
- 31 1000 Site Clearing
- 31 2316 Utility Trenching
- 31 2500 Erosion Control Devices
- 31 3116 Termite Control

#### **Division 32 – Exterior Improvements**

- 32 0505 Minor Demolition
- 32 1123 Aggregate Base
- 32 1216 Flexible Pavement
- 32 1600 Concrete

- 32 1610 Concrete Reinforcement
- 32 8400 Landscape Irrigation
- 32 9113 Topsoil
- 32 9300 Landscape

### **Division 33 – Utilities**

- 33 0110 Disinfection of Potable Water System
- 33 0505 Sewer and Manhole Testing
- 33 0507 Casing Pipe and Tunnel Liner
- 33 0531 Precast Manholes
- 33 0563 Precast Concrete Utility Structures
- 33 1412 High Density Polyethylene Pipe and Fittings
- 33 1416 Water Distribution Systems
- 33 1417 Water Service Connections
- 33 1419-1 Valves for Water and Sewer Systems
- 33 1419-2 Fire Hydrants
- 33 3100 Sewer Pipe Joint Sealing
- 33 3113 Site Sanitary Sewer
- 33 3123 Force Mains
- 33 4000 Site Storm Drainage
- Division 34 Transportation (NOT USED)
- Division 35 Waterway and Marine Construction (NOT USED)
- Division 36 RESERVED (NOT USED)
- Division 37 RESERVED (NOT USED)
- Division 38 RESERVED (NOT USED)
- Division 39 RESERVED (NOT USED)
- Division 40 Process Integration (NOT USED)
- Division 41 Material Processing and Handling Equipment (NOT USED)
- Division 42 Process Heating, Cooling, and Drying Equipment (NOT USED)
- Division 43 Process Gas and Liquid Handling, Purification and Storage Equipment (NOT USED)
- Division 44 Pollution Control Equipment (NOT USED)
- Division 45 Industry-Specific Manufacturing Equipment (NOT USED)
- Division 46 Water And Wastewater Equipment (NOT USED)
- Division 47 RESERVED (NOT USED)
- Division 48 Electrical Power Generation (NOT USED)
- Division 49 RESERVED (NOT USED)

#### END OF SECTION 00 0110

## **SECTION 01 1000**

### SUMMARY

### PROJECT

#### 1.01 PROJECT NAME: GADSDEN CITY HALL

- A. Project Location: Broad Street Gadsden, AL
- B. Owner: City of Gadsden
- C. Architect: Williams Blackstock Architects
- D. WBA Project No: 23-083.00
- E. Time of Completion: Per milestones listed below:
  - 1. Notice to Proceed (NTP): On or around January 8, 2025
  - 2. Construction Duration: 460 calendar days from actual NTP
  - 3. Final Completion: 30 days from actual Substantial Completion.
- F. Liquidated Damages: See Supplemental General Conditions.
- G. Weather Days:
  - 1. A delay beyond the Contractor's control at any time in the commencement or progress of Work by an act or omission of the Owner, Architect, or any separate contractor or by labor disputes, unusual delay in deliveries, unavoidable casualties, fires, abnormal floods, tornadoes, or other cataclysmic events of nature, may entitle the Contractor to an extension of the Contract Time provided, however, that the Contractor shall, within Ten (10) calendar days after the delay first occurs, give written notice to the Architect of the cause of the delay and its probable effect on progress of the entire Work.
  - 2. Adverse weather conditions that are more severe than anticipated for the locality of the Work during any given month may entitle the Contractor to an extension of Contract Time provided, however;
    - a. the weather conditions had an adverse effect on construction scheduled to be performed during the period in which the adverse weather occurred, which in reasonable sequence would have an effect on completion of the entire Work,
    - b. the Contractor shall, within Twenty-one (21) calendar days after the end of the month in which the delay occurs, give the Architect written notice of the delay that occurred during that month and its probable effect on progress of the Work, and
    - c. within a reasonable time after giving notice of the delay, the Contractor provides the Architect with sufficient data to document that the weather conditions experienced were unusually severe for the locality of the Work during the month in question. Unless otherwise provided in the Contract Documents, data documenting unusually severe weather conditions shall compare actual weather conditions to the average weather conditions for the month in question during the previous five years as recorded by the National Oceanic and Atmospheric Administration (NOAA) or similar record-keeping entities.

### 1.02 THE WORK:

A. This project includes the renovation of two existing buildings and the construction of an addition between those to create a new City Hall for the City of Gadsden. Approximately 23,400 SF of the existing 3-story Regions building will be renovated, which is the entire building minus the recently renovated Region's tenant space on the first floor. A garage with an area of approximately 850 SF is being added to the east side of the building. The existing 2-story Merrill Lynch building, which has a total area of approximately 14,000 SF, will have limited scope. With the construction of a new 15,500 SF Council Chamber addition, the entire combined building area, including renovated and new space, will be approximately 64,000 SF.

C. The site is located off Broad Street in the city block between 2<sup>nd</sup> and 3<sup>rd</sup> Streets. Selective demolition will be required to complete the renovations. The project includes, but is not limited to, site demolition, grading, utility fit-up, erosion and sediment control as well as miscellaneous sitework such landscaping/irrigation, hardscape, and parking lot improvements.

### 1.03 AREA SUMMARY

D.	TOTAL	64,000 SF approx.
D.	New Garage Addition	850 SF approx.
C.	New 2-story Infill Addition (Council Chambers)	15,500 SF approx.
В.	Exist. 2-story Merrill Lynch Building (Limited Work)	14,000 SF approx.
В.	Exist. Regions 1st Floor Tenant Space (No Work)	9,200 SF approx.
Α.	Exist. 3-story Regions Building (City Hall)	24,500 SF approx.

### 1.04 CONTRACT DESCRIPTION

A. Contract Type: See Section 00 6104.

## 1.05 OWNER OCCUPANCY

- A. Construction activities cannot disturb business operations of existing tenants including Regions Bank, Merrill Lynch and CDG.
- B. Cooperate with Owner, tenants and adjacent property Owner's to minimize conflict and to facilitate public use of designated areas identified on the phasing plan during construction.

### 1.06 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on Drawings.
- B. Provide Access to and from the site as required by Law and by Owner:
  - 1. Emergency Building Exits During Construction: Keep all exits required by code open during the construction period; provided temporary exit signs if exit routes are temporarily altered.
  - 2. Do not obstruct roadways, sidewalks, or other public ways without a permit from Authorities Having Jurisdiction and Owner approval.
  - 3. Areas of the site not included in the Limits of the Work cannot be used for any purpose by the Contractor.
  - 4. Time restrictions: As outlined by the Owner, and as outlined specifically in the Contract Documents.
  - 5. Utility Outages and Shutdown:
    - a. Do not disrupt or shut down any utilities or life safety systems of buildings or facilities not identified to be demolished on the Drawings.
    - b. Prevent accidental disruption of utility services to other facilities.
    - c. Limit disruption of utility services to hours the building and impacted facilities are unoccupied.
    - d. Do not disrupt or shut down any utility or building system, without Fourteen (14) calendar days written notice to Owner and authorities having jurisdiction.
    - e. Shutdown of utility services must be arranged with approval of the Owner, identifying an agreed shutdown duration, and arranged at least Fourteen (14) calendar days in advance with Owner, with a confirming notification 24 hours in advance of the shutdown.
    - f. Prevent accidental disruption of utility services to other facilities.
  - 6. Cooperate with Owner to minimize conflicts with traffic, deliveries and maintenance to facilitate Owner's operations.
  - 7. Schedule the Work to minimize conflicts with traffic, deliveries and maintenance to facilitate Owner's operations.
  - 8. Notify and coordinate with the Owner any potential disruptions to Complex's operations required to complete the Work at least Fourteen (14) calendar days in advance.

#### 1.08 CONTRACTOR PROJECT MANAGEMENT AND ON-SITE PERSONNEL

- A. Project Superintendent: The contractor shall have a full-time, on-site Project Superintendent for the duration of the contract work.
- B. Project Manager: The contractor shall have a Project Manager assigned to the project fulfilling the duties and requirements for the contract work. However, this person is not required to be on-site and is not required to be full-time. Their time may be allocated to other projects as long as their duties and responsibilities for this project are being fulfilled.
- C. Other On-Site and Administrative Personnel: As outlined in the Contract.

### 1.09 ALL DIVISION 00 AND 01 SPECIFICATION SECTIONS ARE APPLICABLE TO ALL CONTRACTS.

A. All provisions of the sections (Divisions 00 and 01) apply to any and all contracts and subcontracts. Specific items of work listed under individual contract descriptions may constitute exceptions, or additional inclusion.

PART 2 PRODUCTS- NOT USED PART 3 EXECUTION-NOT USED END OF SECTION 01 1000

## SECTION 07 1400

## FLUID-APPLIED ROOFING AND WATERPROOFING

## PART 1 GENERAL

## 1.01 SECTION INCLUDES

- A. Hot-applied rubberized asphalt waterproofing for installation in split slab, over slab, below grade and structural applications requiring protection course and drainage materials for waterproofing plaza and roof terrace decks over occupied space.
- B. Protection Course and Drainage panels and Protection boards.

## 1.02 RELATED REQUIREMENTS

- A. Section 03 3000 (03300) Cast in Place Concrete: Concrete substrate.
- B. Section 07 2100 Thermal Insulation: Insulation installed as protection course.
- C. Section 07 1300 Sheet Waterproofing: Coordination and interface with sheet waterproofiing materials and accessories.
- D. Section 07 6200 Sheet Metal Fabrications, Flashing and Trim: Metal parapet covers, copings, and counterflashings.
- E. Section 07 7600 Pedestal Supported Deck Paver System.
- F. Section 07 9200 Joint Sealants: Sealing moving joints in waterproofed surfaces that are not part of work in this section.

## 1.03 ABBREVIATIONS

- A. CSPE Chlorosulfonated Polyethylene.
- B. HDPE High-Density Polyethylene.
- C. NRCA National Roofing Contractors Association.

## 1.04 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
- B. AATCC Test Method 30 Antifungal Activity, Assessment on Textile Materials: Mildew and Rot Resistance of Textile Materials; 2004.
- C. ASTM C836/C836M Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course; 2012.
- D. ASTM C1306 Standard Test Method for Hydrostatic Pressure Resistance of a Liquid-Applied Waterproofing Membrane; 2008.
- E. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension; 2006a (Reapproved 2013).
- F. ASTM D429 Standard Test Methods for Rubber Property--Adhesion to Rigid Substrates; 2008.
- G. ASTM D471 Standard Test Method for Rubber Property--Effect of Liquids; 2012.
- H. ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers; 2000 (Reapproved 2012).
- I. ASTM D746 Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact; 2014.
- J. ASTM D2240 Standard Test Method for Rubber Property--Durometer Hardness; 2005 (Reapproved 2010).
- K. ASTM D3468 Standard Specification for Liquid-Applied Neoprene and Chlorosulfonated Polyethylene Used in Roofing and Waterproofing; 1999 (Reapproved 2013).
- L. ASTM D4541 Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers; 2009.

- M. ASTM D5385/D5385M Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes; 1993 (Reapproved 2014).
- N. ASTM D6506 Standard Specification for Asphalt Based Protection for Below-Grade Waterproofing; 2001 (Reapproved 2009).
- 0. ASTM E96/E96M Standard Test Methods for Water Vapor Transmission of Materials; 2014.
- P. ASTM E154/E154M Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover; 2008a (Reapproved 2013).
- Q. CGSB 37.50-M89:Durability- >5.5 Joules
- R. CGSB 37.50-M89:Adhesion-Pass
- S. CGSB 37.50-M89Low temperature crack bridging capacity: No cracking/no adhesion/no splitting.
- T. ICC-ES AC29 Acceptance Criteria for Cold, Liquid-Applied, Below-Grade, Exterior Damproofing and Waterproofing Materials; 2011.

## 1.05 SUBMITTALS

- A. See Section 01 3100 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data for membrane, surface conditioner, flexible flashings, joint cover sheet, and joint and crack sealants.
- C. Shop Drawings: Provide project specific details keyed to reference plan indicating extent of waterproofing. Indicate special joint or termination conditions, penetrations and conditions of interface with other materials.
- D. Certificate: Certify that products meet or exceed specified requirements.
- E. Manufacturer's Installation Instructions: Indicate special procedures.
- F. Warranty:
  - 1. Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
  - 2. Submit installer's certification that installation complies with warranty conditions for the waterproofing membrane.
- G. Warranty: Submit manufacturer intent to Warranty Letter, Certification of Compatibility of all System Components with a sample warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

## 1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.
- C. Pre-installation Meeting: Convene at least one week prior to beginning the work of this section, but not before all submittal requirements are met and mock up is approved.
- D. Attendance required for Representatives of:
  - 1. General Contractor
  - 2. Waterprofing Subcontractor.
  - 3. Waterproofing System Manufacturer Technical Field Representative.
  - 4. Plumbing Contractor
  - 5. Masonry subcontractor
  - 6. Sitework subcontractor.
  - 7. Plumbing subcontractor.
  - 8. Owner / Architect.

## 1.07 MOCK-UP

- A. Construct mock-up consisting of 100 sq ft of horizontal waterproofed panel; to represent finished work including internal and external corners, drainage panel, base flashings, control joints, expansion joints, counter-flashings, and protective cover.
- B. Locate where directed.
- C. Mock-up may remain as part of the finished Work pending approval by the architect.

## 1.08 FIELD CONDITIONS

A. Maintain ambient temperatures above 40 degrees F for 24 hours before and during application and until cured.

## 1.09 WARRANTY

- A. See Section 01 7800 Closeout Submittals, for additional warranty requirements.
- B. Contractor shall correct defective Work within a 5 year period after Date of Substantial Completion; remove and replace materials concealing waterproofing at no cost to Owner.
- C. Provide 15 year manufacturer watertightness warranty for waterproofing failing to resist penetration of water and membrane deterioration, except where such failures are the result of structural failures of building. Hairline cracking of concrete due to temperature change or shrinkage is not considered a structural failure.

## PART 2 PRODUCTS

## 2.01 MANUFACTURERS

- A. Basis of Design
  - 1. American Hydrotech, Inc; Product Membrane 6125®: www.hydrotechusa.com.
- B. Hot-Applied Rubberized Asphalt Waterproofing:
  - 1. Henry Company: www us.henry.com.
  - 2. AVM Industries, Inc: www.avmindustries.com/#sle.
  - 3. Carlisle Coatings & Waterproofing, Inc: www.carlisle-ccw.com.
  - 4. Tremco Corporation ; Product TREMproof® 6100: www.tremco.com.
  - 5. Substitutions: See Section 01 6000 Product Requirements.

## 2.02 ROOFING AND WATERPROOFING APPLICATIONS

## 2.03 MEMBRANE AND FLASHING MATERIALS

- A. Hot-Applied, Rubberized Asphalt Waterproofing: Elasticized rubberized asphaltic compound, hot-applied and quick setting.
  - 1. Cured Thickness: 215 mils 0.215 inches, minimum.
  - 2. Suitable for installation over concrete, gypsum board, and plywood substrates.
  - 3. Tensile Strength: 15 psi, measured in accordance with ASTM D412.
  - 4. Ultimate Elongation: 500 percent, minimum, measured in accordance with ASTM D412.
  - 5. Hardness: 60, measured in accordance with ASTM D2240, using Type A durometer.
  - 6. Tear Strength: 150 lbf/inch, measured in accordance with ASTM D624.
  - 7. Water Vapor Permeance: 0.3 perms, maximum, measured in accordance with ASTM E96/E96M.
  - 8. Reinforcing: Continuous; manufacturer's standard reinforcing fabric, approved for use with specified product.
  - 9. Finished Coating Thickness: 215 mils (0.215 inch), minimum.
  - 10. Adhesion: Greater than 150 psi, measured in accordance with ASTM D4541.
  - 11. Brittleness Temperature: -40 F, measured in accordance with ASTM D746.
  - 12. Products: See Above.

## 2.04 ACCESSORIES

- A. Surface Primer: Manufacturer's recommended type, compatible with membrane compound; as recommended by membrane manufacturer.
- B. Sealant for Joints and Cracks in Substrate: Type compatible with waterproofing material and as recommended by waterproofing manufacturer.

- C. Reinforcing Fabric: Manufacturer's Recommended Material
- D. Sealant for Substrate Surfaces: As recommended by membrane manufacturer.
- E. Separation Sheet: Sheet as recommended by Manufacturer, 6 mil thick.
- F. Protection Board: Provide type capable of preventing damage to waterproofing due to backfilling and construction traffic.
  - 1. Multi-layer internally-reinforced asphaltic panels, 1/8 inch thick, nominal, comp lying with ASTM D6506.
- G. Heavy Duty Protection Course: 60 mil 1/2 inch (12 mm) minimum thickness Uncured Neoprene Sheet
- H. Heavy Drainage Mat: 1/2 inch minimum thickness formed plastic, hollowed sandwich with geotextiile cover sheet or type as provided by membrane Manufacturer .
- I. Cant Strips: Premolded composition material.
- J. Counterflashings: As recommended by membrane and protection board manufacturer.

## PART 3 EXECUTION

## 3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify substrate surfaces are free of frozen matter, dampness, loose particles, cracks, pits, projections, penetrations, or foreign matter detrimental to adhesion or application of waterproofing system.
- C. Verify that substrate surfaces are smooth, free of honeycomb or pitting, and not detrimental to full contact bond of waterproofing materials.
- D. Verify items that penetrate surfaces to receive waterproofing are securely installed.

## 3.02 PREPARATION

- A. Protect adjacent surfaces from damage not designated to receive waterproofing.
- B. Clean and prepare surfaces to receive waterproofing in accordance with manufacturer's instructions; vacuum substrate clean.
- C. Do not apply waterproofing to surfaces unacceptable to waterproofing manufacturer.
- D. Seal cracks and joints with sealant using methods recommended by sealant manufacturer.
- E. Install cant strips at inside corners.

## 3.03 INSTALLATION - LIQUID MEMBRANE

- A. Install membrane waterproofing in accordance with manufacturer's instructions.
- B. General Installation Basis of Design Product
  - 1. Apply minimum 90-mil (2.3mm) thick base layer of hot applied rubberized asphalt membrane as a continuous monolithic coat over entire area to be waterproofed; including all crack and joint detailing and flashing interfaces.
  - 2. Fully embed reinforcement fabric into the top surface of the 90-mil base coat; overlapping fabric seams a minimum ½" to 1" (25mm) and ensuring a layer of membrane between overlaps. Firmly press the reinforcing fabric into the base layer of membrane.
  - 3. Apply minimum 125-mil (3.2mm) thick top layer of hot applied rubberized asphalt membrane over the reinforcing fabric in a continuous monolithic coat. Total minimum membrane thickness shall be 215-mils (5.5mm) thick over entire area to be waterproofed.
  - 4. Coordinate with drain installation; see Section 22 1006.
  - 5. Install flexible flashings. Seal items penetrating through membrane with flexible flashings. Seal watertight to membrane.
  - 6. Extend membrane over cants and up intersecting surfaces at membrane perimeter minimum 8 inches above horizontal surface for first ply and 6 inches at subsequent plies laid in shingle fashion.
  - 7. Seal membrane and flashings to adjoining surfaces. Install termination bar at all edges. Install counterflashing over all exposed edges.

- C. Apply waterproofing in accordance with manufacturer's instructions and conforming to The NRCA Waterproofing Manual- 2011 Edition.
- D. Apply primer or surface conditioner at a rate recommended by manufacturer, and protect conditioner from rain or frost until dry.
- E. At joints and cracks less than 1/2 inch in width including joints between horizontal and vertical surfaces, apply 12 inch wide strip of joint cover sheet.
- F. At joints from 1/2 inch to 1 inch in width, loop joint cover sheet down into joint between 1-1/4 inch to 1-3/4 inch, and extend sheet at least 6 inches on either side of expansion joint.
- G. Center joint cover sheet over joints, roll sheet into 1/8 inch thick coating of waterproofing material and apply second coat over sheet extending at least 6 inches beyond sheet edges.
- H. Extend membrane over cants and up intersecting surfaces at membrane perimeter minimum 6 inches above horizontal surface at subsequent plies laid in shingle fashion.
- I. Apply extra thickness of waterproofing material at corners, intersections, and angles.
- J. Flexible Flashings: Seal items watertight that penetrate through waterproofing membrane with flexible flashings.
- K. Extend waterproofing material and flexible flashing into drain clamp flange, apply adequate coating of liquid membrane to ensure clamp ring seal, and coordinate with drain installation requirements specified in Plumbing Sections.
- L. Seal membrane and flashings to adjoining surfaces. Install termination bar at all edges. Install counterflashing over all exposed edges.

## 3.05 INSTALLATION - DRAINAGE PANEL and PROTECTION BOARD

- A. Immediately after cooling, dust membrane with tack-reducing surfacing at rate of approximately 10 lbs/100 sq ft.
- B. After membrane has cooled, but before it becomes dusty, apply separation sheet and lap joints to ensure complete coverage.
- C. Place drainage fabric directly against membrane, butt joints, place to encourage drainage downward. Scribe and cut boards around projections, penetrations, and interruptions.
- D. Place protection board directly against drainage panel; butt joints, and scribe and cut boards around projections, penetrations, and interruptions.

## 3.06 FIELD QUALITY CONTROL

- A. Manufacturer shall provide a technical field representative to visit the site and review the mockup before proceeding with work on the balance of the roof.
- B. Owner will provide testing services in accordance with Section 01 4000 Quality Requirements. Contractor shall provide temporary construction and materials for testing.
- C. On completion of waterproofing layer installation, prepare area for flood testing.
- D. Plug all drains and provide barriers necessary to contain water. Allow for overflow to protect the structure.
- E. Water test must be witnessed, documented and approved by Independent Inspector.
- F. If leaking is found, remove water, repair leaking areas with new waterproofing materials as directed by Architect; repeat flood test. Repair damage to building.
- G. When area is proven watertight, drain water and remove dam.

## 3.08 PROTECTION

A. Do not permit traffic over unprotected or uncovered membrane.

## 3.09 SCHEDULE See Drawings

## END OF SECTION

## SECTION 07 7600

## PEDESTAL SUPPORTED DECK PAVER SYSTEM GENERAL

## 1.01 SECTION INCLUDES

- A. Precast, or hydraulically pressed Concrete Pavers.
- B. Adjustable Pedestal Support System.
- C. Filter Fabric Layer.

## 1.02 RELATED SECTIONS

- A. Section 055000 Metal Fabrications.
- B. Section 071400 Fluid Applied Roofing and Waterproofing.
- C. Section 075400 Thermoplastic Membrane Roofing Roof and Deck Insulation.

## 1.03 REFERENCES

- A. ASTM C 150 for Portland Cement
- B. ASTM C 33A for normal weight aggregate
- C. ASTM C 140 for minimum compression strength of 7,500 psi (average 8,000 psi in 2" material)
- D. ASTM C 140 for water absorption not greater than five to six percent
- E. ASTM C 293 for flexural strength of >700 psi in 2" material
- F. ASTM C 67 Section 8 Freeze/Thaw no breakage and not greater loss than one percent in dry weight of any individual unit when subjected to 50 cycles
- G. ASTM D 1238-04 Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer.
- H. ASTM D 792-00 Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
- I. ASTM D 638-03 Standard Test Method for Tensile Properties of Plastics
- J. ASTM D 256-06 Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
- K. ASTM D 648-06 Standard Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position.
- L. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials; 2008.
- M. ASTM D 143 Standard Method of Testing Small Clear Specimens of Timber; 1994 (Reapproved 2007).
- N. ASTM D 1761 Standard Test Method for Mechanical Fasteners in Wood; 2006.
- 0. UL (FRD) Fire Resistance Directory; Underwriters Laboratories Inc.; current edition.

## 1.04 SUBMITTALS

- A. Submit under provisions of Section 01 3000.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- C. Shop Drawings: Submit shop drawings detailing the installation methods. Coordinate placement with locations noted and specific construction indicated on the Contract Drawings.
- D. Samples: Provide chart/samples of all available colors, then provide full size samples upon request for review/approval.

## 1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications:

- 1. All primary products specified in this section will be supplied by a single manufacturer with a minimum of five (5) years experience.
- B. Installer Qualifications:
  - 1. The deck support system installer must have a minimum of five (5) years proven general construction experience in the type of work specified herein and be approved or trained by the manufacturer.
  - 2. All Work must comply with the manufacturer's installation application procedures for deck support work specified herein.
- C. Special Considerations:
  - 1. The contractor assumes the responsibility for and must take into consideration the structural capability and adequacy of the structure to carry the dead and live load weight(s) involved, and that the density of any insulation is satisfactory to resist crushing and damaging the waterproofing membrane.
  - 2. Design Engineer Qualifications: The structural design of the deck system shall be considered as noted above and reviewed by a Professional Structural Engineer experienced in design of similar assemblies and licensed in Alabama.
- D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
  - 1. Install 10sf as mockup.
  - 2. Do not proceed with remaining work until workmanship of installation is approved by Architect.
  - 3. Rework mock-up area as required to produce acceptable work.

## 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store system components and materials in manufacturer's original packaging with labels intact and legible.
- B. Inspect all delivered materials to insure they are undamaged and in good condition.

## 1.07 PROJECT REQUIREMENTS

- A. There are no installation temperature restriction guidelines except if adhesives, coatings or sealants are employed, otherwise the practical considerations of working in any unsafe condition or inclement weather and possible damage to the system are at the discretion of the contractor.
- B. Deck supports specified are to be for used for pedestrian traffic only.
- C. Pedestrian decks must be restrained by perimeter closure on all sides. Lateral movement greater than one tab width is unacceptable and will be rejected.
- D. Loading for the installation or anticipated installation of additional items on top of the deck, (such as planters, concrete benches, sculptures, hot tubs, grills, or industrial equipment) must be considered in the original design and incorporate additional pedestals that are in addition to the main deck paver/tile pedestal system. Consultation with a Structural engineer must be also occur when installing vibrating equipment. Total weights must be calculated and dispersed evenly over the number of pedestals needed to carry the expected weight. To avoid point loading, the use of planters or architectural features with 'feet' is not allowed. Failure to adequately support the additional weight of any such features or items may cause significant damage to the deck, underlying structure, or waterproofing system.
- E. All decks shall be designed to not exceed the design capacity of the pedestal.
- F. The substrate immediately below the pedestals shall provide positive drainage.
- G. In the case of decks over roofing substrates, roof systems must meet local building code and be in accordance with the NRCA recommended good construction practices. Only roofing manufacturer approved systems shall be used.
- H. Decks over roofing and waterproofing:
  - 1. If integral roof insulation is installed immediately below the membrane, without a cover board sufficient to support the deck and density of the insulation has a medium density of 20 psi, or less "floating" Insulation Bases, or other means of load dispersion are to be used

## PART 2 PRODUCTS

## 2.01 MANUFACTURERS

- A. Architectural Concrete Pavers: Basis of Design
  - 1. Hydrotech, Inc; www.hydrotechusa.com.

- B. Other Acceptable Manufacturers:
  - 1. Hanover® Architectural Products Product Hanover® Granite Pavers www.hanoverpavers.com
  - 2. Wausau Tile® Product Textured Granite UG: www.wausautile.com
  - 3. Westile®- An Oldcastle Company: Product Western Series Plaza Paver™ PROMENADE SERIES: www.westile.com
- C. Pedestal System Basis of Design:
  - 1. Hydrotech, Inc; www.hydrotechusa.com.
    - a. Adjustable deck support system with maximum cavity height as shown on drawings and including.
      - 1) Pedestals and caps with "snap-fit" top and bottom shims and leveling plates to provide means for adjustment and leveling of pavers.
    - b. Contractor shall include all components and accessories for a complete system as determined by but not limited to a detailed review of field conditions and coordination with the contract documents.
- D. Pedestal System Other Acceptable Manufacturers:
  - 1. Hanover® Architectural Products Product Elevator® Pedestal System: www.hanoverpavers.com
  - 2. Wausau Tile® Product Terra Stand:www.wausautile.com
  - 3. Westile®- An Oldcastle Company: Product BISON® IP Screw jack Adjustable Pedestals.
- E. Colors: Two colors as shown on Drawings. Select from Manufacturer's full range.
- F. Accessories: Premanufactured precast curb (as shown on Drawings).
- G. Substitutions: See Section 1600 Product Requirements.

## 2.02 WARRANTY

- A. Deck system manufacturer shall provide to the Owner or Owner's Representative, an executed copy of the manufacturer's standard warranty outlining the terms, conditions and limitations of its warranty against manufacturing defects for a period of three (3) years.
- B. The Contractor shall include a warranty for his labor and materials used in conjunction with his work in accordance with the General Conditions for this project for a period of three (3) years.
- C. It is the responsibility of the Contractor installing the product listed in this section to coordinate warranty requirements with any related sections or adjacent Work. Notify the Architect immediately of any potential lapses or limitations in warranty coverage.
- D. Warranty does not extend to Owner's use of the deck for motorized or wheeled equipment including maintenance and repair activities

## PART 3 EXECUTION

## 3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Verify all elevations, required pedestal heights and deck dimensions before commencing work.

## 3.02 PREPARATION

- A. Establish accurate lines, levels and pattern.
- B. The substrate surface that will receive the deck supports must be well compacted (on grade) and structurally capable of carrying the dead and live loads anticipated.
- C. The substrate must be clean and free of projections and debris that could impair the performance of the pedestals or the total deck system.

## 3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. If required, place proprietary load dispersion board in the location on the grid of each pedestal.

#### **SECTION 08 7100**

#### DOOR HARDWARE

### PART 1 GENERAL

#### 1.01 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

#### 1.02 SUMMARY:

- A. This Section includes items known commercially as finish or door hardware that are required for swing, sliding, and folding doors, except special types of unique hardware specified in the same sections as the doors and door frames on which they are installed.
- B. This Section includes the following:
  - 1. Architectural Hinges
  - 2. Continuous Hinges
  - 3. Pivots Sets
  - 4. Key Control System, Cylinders and Cores.
  - 5. Locksets, Latchsets and Deadbolts
  - 6. Panic Devices and Fire Rated Exit Devices
  - 7. Closers and Door Control Devices
  - 8. Automatic Door Operators
  - 9. Overhead Door Stops and Holders
  - 10. Floor and Wall Stops
  - 11. Door Bolts and Coordinators
  - 12. Door Pulls, Push/Pull Plates and Push/Pull Sets
  - 13. Protective Plates
  - 14. Door Seals, Gasketing and Weatherstripping
  - 15. Thresholds
  - 16. Miscellaneous Door Control Devices
  - 17. Electromechanical Hardware
  - 18. Miscellaneous Access Control Components and Security Equipment

C. Related Sections: The following Sections contain requirements that relate to the following sections.

- 1. Section 08 1113: Hollow Metal Doors and Frames
- 2. Section 08 1400: Wood Doors
- 3. Section 08 3323: Coiling Doors
- 4. Section 08 4113: Aluminum-Framed Entrances and Storefronts
- 5. Section 08 4126: All-Glass Entrances
- 6. Section 08 1100: Custom Steel Doors and Frames
- 7. Division 26: Electrical
- 8. Division 28: Electronic Safety and Security

D. Products furnished but not installed under this Section to include:

- 1. Cylinders for locks on entrance doors.
- 2. Final replacement cores and keys to be installed by Owner.

#### 1.03 REFERENCES:

- A. UL Underwriters Laboratories
  - 1. UL 10B Fire Test of Door Assemblies
- 2. UL 10C Positive Pressure Test of Fire Door Assemblies
- 3. UL 1784 Air Leakage Tests of Door Assemblies
- 4. UL 305 Panic Hardware
- B. DHI Door and Hardware Institute
  - 1. Sequence and Format for the Hardware Schedule
  - 2. Recommended Locations for Builders Hardware
  - 3. Keying Systems and Nomenclature
  - 4. Installation Guide for Doors and Hardware
- C. NFPA National Fire Protection Association
  - 1. NFPA 70 National Electric Code
  - 2. NFPA 80 2016 Edition Standard for Fire Doors and Other Opening Protectives
  - 3. NFPA 101 Life Safety Code
  - 4. NFPA 105 Smoke and Draft Control Door Assemblies
  - 5. NFPA 252 Fire Tests of Door Assemblies
- D. ANSI American National Standards Institute
  - 1. ANSI A117.1 2017 Edition Accessible and Usable Buildings and Facilities
  - 2. ANSI/BHMA A156.1 A156.29, and ANSI/BHMA A156.31 Standards for Hardware and Specialties
  - 3. ANSI/BHMA A156.28 Recommended Practices for Keying Systems
  - 4. ANSI/WDMA I.S. 1A Interior Architectural Wood Flush Doors
  - 5. ANSI/SDI A250.8 Standard Steel Doors and Frames

#### 1.04 SUBMITTALS:

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification sections.
- B. Product data including manufacturers' technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements. For items other than those scheduled in the "Headings" of Section 3, provide catalog information for the specified items and for those submitted.
- C. Final hardware schedule coordinated with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
  - 1. Final Hardware Schedule Content: Based on hardware indicated, organize schedule into vertical format "hardware sets" indicating complete designations of every item required for each door or opening. Use specification heading numbers with any variations suffixed a, b, etc. Include the following information:
    - a. Type, style, function, size, and finish of each hardware item.
    - b. Name and manufacturer of each item.
    - c. Fastenings and other pertinent information.
    - d. Location of each hardware set cross-referenced to indications on Drawings both on floor plans and in door and frame schedule.

- e. Explanation of all abbreviations, symbols, and codes contained in schedule.
- f. Mounting locations for hardware.
- g. Door and frame sizes and materials.
- h. Keying information.
- i. Cross-reference numbers used within schedule deviating from those specified.
- j. Column 1: State specified item and manufacturer.
- k. Column 2: State prior approved substituted item and its manufacturer.
- 2. Furnish complete wiring diagrams, riser diagrams, elevation drawings and operational descriptions of electrical components and systems, listed by opening in the hardware submittals. Elevation drawings shall identify locations of the system components with respect to their placement in the door opening. Operational descriptions shall fully detail how each electrical component will function within the opening, including all conditions of ingress and egress. Provide a copy with each hardware schedule submitted for approval. Supply a copy with delivery of hardware to the jobsite and another copy to the Owner at the time of project completion.
- 3. Submittal Sequence: Submit final schedule at earliest possible date particularly where acceptance of hardware schedule must precede fabrication of other work that is critical in the Project construction schedule. Include with schedule the product data, samples, shop drawings of other work affected by door hardware, and other information essential to the coordinated review of schedule.
- 4. Keying Schedule: Submit separate detailed schedule indicating clearly how the Owner's final instructions on keying of locks has been fulfilled.
- D. Provide samples if requested of each type of exposed hardware unit in finish indicated and tagged with full description for coordination with schedule. Submit samples prior to submission of final hardware schedule.
  - 1. Samples will be returned to the supplier. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated in the Work, within limitations of keying coordination requirements.
- E. Templates for doors, frames, and other work specified to be factory prepared for the installation of door hardware. Check shop drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- F. Contract closeout submittals:
  - 1. Operation and maintenance data: Complete information for installed door hardware.
  - 2. Warranty: Completed and executed warranty forms.

## **1.5 QUALITY ASSURANCE:**

- A. Single Source Responsibility: Obtain each type of hardware (latch and locksets, hinges, closers, etc.) from a single manufacturer.
  - Supplier Qualifications: A recognized architectural door hardware supplier, with warehousing facilities in the Project's vicinity, that has a record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that employs an experienced Architectural Hardware Consultant (AHC) who is available for consultation to Owner, Architect, and Contractor, at reasonable times during the Work.
- B. Coordination Meetings:
  - 1. Contractor to set up and attend the following:

- a. Lock distributor to meet with the Owner to finalize lock functions and keying requirements and to obtain final instructions in writing.
- b. Lock distributor and lock, closer and exit device manufacturer to meet with the installer prior to beginning of installation of door hardware. Instruct installer on proper installation of specified products.
- 2. General Contractor to set up and attend the following:
- 3. Meet with the Owner, General Contractor, Supplier, electrical and security contractors to coordinate all electrical hardware items. Supplier to provide riser diagrams, elevation drawings, wiring diagrams and operational descriptions as required by the General and sub-contractors.
- C. Fire-Rated Openings: Provide door hardware for fire-rated openings that complies with NFPA Standard No. 80 requirements of authorities having jurisdiction.
  - 1. Provide only items of door hardware that are listed and tested by UL or Warnock Hersey for given type/size opening and degree of label. Provide proper latching hardware, door closers, approved-bearing hinges and seals whether listed in the Hardware Schedule or not. All hardware to comply with State and local codes and UL 10C.
  - Where emergency exit devices are required on fire-rated doors, (with supplementary marking on doors' UL labels indicating "Fire Door to be equipped with Fire Exit Hardware") provide UL label on exit devices indicating "Fire Exit Hardware".
- D. All hardware is to comply with Federal and State Handicap laws.
- E. Substitutions: Request for substitutions of items of hardware other than those listed as "acceptable and approved" shall be made to the architect in writing no later than fourteen (14) days prior to bid opening. Approval of substitutions will only be given in writing or by Addenda. Requests for substitutions shall be accompanied by samples and/or detailed information for each manufacturer of each product showing design, functions, material thickness and any other pertinent information needed to compare your product with that specified. Lack of this information will result in a refusal.
- F. Pre-Installation Coordination:
  - 1. Installation of hardware shall be installed or directly supervised and inspected by a skilled installer certified by the manufacturer of locksets, door closers, and exit devices used on the project, or with not less than 3 years' experience in successful completion of projects similar in size and scope.
  - 2. Schedule a hardware pre-installation meeting on site to review and discuss the installation of continuous hinges, locksets, door closers, exit devices, overhead stops, and electromechanical door hardware.
  - 3. Meeting attendees shall be notified 7 days in advance and shall include: Architect, Contractor, Door Hardware Installers (including low voltage hardware), Manufacturers representatives for above hardware items, and any other effected subcontractors or suppliers.
  - 4. All attendees shall be prepared to distribute installation manuals, hardware schedules, templates, and physical hardware samples.

## **1.6 PRODUCT HANDLING:**

- A. Tag each item or package separately with identification related to final hardware schedule and include basic installation instructions with each item or package.
- B. Packaging of door hardware is responsibility of supplier. As material is received by hardware supplier from various manufacturers, sort and repackage in containers clearly marked with appropriate hardware set number to match set numbers of approved hardware schedule. Two or more identical sets may be packed in same container.

- C. Inventory door hardware jointly with representatives of hardware supplier and hardware installer until each is satisfied that count is correct.
- D. Deliver individually packaged door hardware items promptly to place of installation (shop or Project site).
- E. Provide secure lock up for door hardware delivered to the Project, but not yet installed. Control handling and installation of hardware items that are not immediately replaceable so that completion of the Work will not be delayed by hardware losses both before and after installation.

### 1.7 WARRANTY:

- A. Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within published warranty period.
  - 1. Warranty does not cover damage or faulty operation due to improper installation, improper use, or abuse.
  - 2. Warranty Period: Beginning from date of Substantial Completion, for durations indicated in manufacturer's published listings.
- B. Warranties:
  - 1. Locksets: 10 Year Period
  - 2. Electromechanical Locksets: 3 Year Period
  - 3. Exit Devices: 10 Year Period
  - 4. Electromechanical Exit devices: 3 Year Period
  - 5. Surface Closers: 30 Year Period
  - 6. Automatic Door Operators: 2 Year Period
  - 7. Power Supplies: 3 Year Period
  - 8. Weather Stripping/Gasketing: 5 Year Period
  - 9. Overhead Stops: 10 Year Period

### **1.8 MAINTENANCE:**

- A, Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions that are packed in hardware items for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.
- B. Parts kits: Furnish manufacturers' standard parts kits for locksets, exit devices, and door closers.

#### PART 2 - PRODUCTS

#### 2.1 ACCEPTABLE MANUFACTURERS:

A. Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of finish hardware are indicated in the hardware schedule at the end of this Section.

#### 2.2 MANUFACTURED UNITS: (\*Denotes manufacturer referenced in the Hardware Headings)

- A. Hinges:
  - 1. Acceptable manufacturers:
    - a. Ives\*
    - b. Stanley
    - c. McKinney

- 2. Characteristics:
  - a. Provide hinges conforming to ANSI/BHMA A156.1.
  - b. Provide five knuckle, ball bearing hinges.
  - c. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:

Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches (114 mm) high Interior: Standard weight, steel, 4-1/2 inches (114 mm) high

d. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:

1) Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high 2) Interior: Heavy weight, steel, 5 inches (127 mm) high

e. 2 inches or thicker doors:

1) Exterior: Heavy weight, bronze, or stainless steel, 5 inches (127 mm) high 2) Interior: Heavy weight, steel, 5 inches (127 mm) high

- f. Adjust hinge width for door, frame, and wall conditions to allow proper degree of opening.
- g. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
- h. Where new hinges are specified for existing doors or existing frames, provide new hinges of identical size to hinge preparation present in existing door or existing frame.
- i. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
  - 1) Steel Hinges: Steel pins
  - 2) Non-Ferrous Hinges: Stainless steel pins
  - 3) Out-Swinging Exterior Doors: Non-removable pins
  - 4) Out-Swinging Interior Lockable Doors: Non-removable pins
  - 5) Interior Non-lockable Doors: Non-rising pins
- j. Provide hinges with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component. Provide mortar guard for each electrified hinge specified.
- B. Geared Continuous Hinges:
  - 1. Acceptable manufacturers:
    - a. Ives\*
    - b. Select Products
    - c. Markar
  - 2. Characteristics:
    - a. Provide aluminum geared continuous hinges conforming to ANSI/BHMA A156.26, Grade 1.
    - b. Provide aluminum geared continuous hinges, where specified in the hardware sets, fabricated from 6063-T6 aluminum.
    - c. Provide split nylon bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.
    - d. Provide hinges capable of supporting door weights up to 450 pounds, and successfully tested for 1,500,000 cycles.
    - e. On fire-rated doors, provide aluminum geared continuous hinges classified for use on rated doors by testing agency acceptable to authority having jurisdiction.
- f. Provide aluminum geared continuous hinges with electrified option scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware.
- g. Provide hinges 1 inch (25 mm) shorter in length than nominal height of door, unless otherwise noted or door details require shorter length and with symmetrical hole pattern.
- C. Power Transfer:
  - 1. Acceptable manufacturers:
    - a. Von Duprin EPT-10 CON
  - 2. Requirements:
    - a. Provide power transfer with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware.
    - b. Locate electric power transfer per manufacturer's template and UL requirements, unless interference with operation of door or other hardware items.
    - c. All hardwired, door mounted, electrified hardware to receive EPT-10 power transfer, unless scheduled authorized
- D. Cylinders and Keying:
  - 1. Acceptable manufacturers:
    - a. Match existing keying system.
  - 2. Characteristics:
    - a. Existing System: Grandmaster key the locks to the Owner's existing system, with a new master key for the Project.
    - b. Review the keying system with the Owner and provide the type required (master, grandmaster or great-grandmaster), either new or integrated into Owner's existing system.
    - c. Metals: Construct lock cylinder parts from brass or bronze, stainless steel, or nickel silver.
    - d. Comply with Owner's instructions for master keying and, except as otherwise indicated, provide individual change key for each lock that is not designated to be keyed alike with a group of related locks.
    - e. Permanently inscribe each key with number of locks that identifies cylinder manufacturer's key symbol, and notation, "DO NOT DUPLICATE".
    - f. Key Material: Provide keys of nickel silver only.
    - g. Furnish the following Key Quantities:
      - 1) Three (3) change keys for each lock.
      - 2) Five (5) master keys for each master system.
      - 3) Five (5) grandmaster keys for each grandmaster system.
      - 4) Ten (10) construction master keys.
      - 5) Two (2) construction Control Keys.
      - 6) One (1) extra blank for each lock.
    - h. Furnish construction master keys to General Contractor.
      - 1) Deliver keys to Owner.
- E. Mortise Locksets and Latchsets: as scheduled.
  - 1. Acceptable manufacturers:
    - a. Schlage L9000 Series\*

- b. Sargent 8200 Series
- c. Best 45H Series
- 2. Required Features:
  - a. Provide mortise locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1, and UL Listed for 3-hour fire doors.
  - b. Indicators: Where specified, provide indicator window measuring a minimum 2-inch x 1/2 inch with 180-degree visibility. Provide messages color-coded with full text and/or symbols, as scheduled, for easy visibility.
  - c. Provide locks manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance.
  - d. Provide lock case that is multi-function and field reversible for handing without opening case. Cylinders: Refer to "KEYING" article, herein.
  - e. Provide locks with standard 2-3/4 inches (70 mm) backset with full 3/4 inch (19 mm) throw stainless steel mechanical anti-friction latchbolt. Provide deadbolt with full 1-inch (25 mm) throw, constructed of stainless steel.
  - f. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim. Provide electrified options as scheduled in the hardware sets. Where scheduled, provide switches and sensors integrated into the locks and latches.
  - g. Provide motor based electrified locksets that comply with the following requirements:
    - 1) Universal input voltage single chassis accepts 12 or 24VDC to allow for changes in the field without changing lock chassis.
    - 2) Fail Safe/Fail Secure changing mode between electrically locked (fail safe) and electrically unlocked (fail secure) is field selectable without opening the lock case.
    - 3) Low maximum current draw maximum 0.4 amps to allow for multiple locks on a single power supply.
    - 4) Low holding current maximum 0.01 amps to produce minimal heat, eliminate "hot levers" in electrically locked applications, and to provide reliable operation in wood doors that provide minimal ventilation and air flow.
  - 5) Connections provide quick-connect Molex system standard.
- h. Lever Trim: Solid brass, bronze, or stainless steel, cast or forged in design specified, with wrought roses and external lever spring cages. Provide thru-bolted levers with 2-piece spindles.
  - 1) Vandlgard: Provide levers with vandal resistant technology for use at heavy traffic or abusive applications.
- i. Scheduled Lock Series Design:
  - 1) Lever Design 17
  - 2) Rosette Design A.
- F. Exit Devices:
  - 1. Acceptable manufacturers:

Von Duprin 98 Series\* Sargent 8000 Series Precision Apex 2100

- 2. Characteristics:
  - a. Exit devices to be UL Listed for life safety. Exit devices for fire rated openings to have "UL" labels for "Fire Exit Hardware."

- b. Exit devices mounted on labeled wood doors to be mounted on the door per the door manufacturer's requirements.
- c. All trim to be thru bolted to the lock stile case.
- d. Lever trim to be solid case material with a break-away feature to limit damage to the unit from vandalism. Lever design to match locksets.
- e. All exit devices to be made of brass, bronze, stainless steel, or aluminum material, powder coated, anodized, or plated to the standard architectural finishes to match the balance of the door hardware.
- f. Provide glass bead kits (GBK) to shim exit devices on doors with raised glass beads, as required.
- g. All exit devices to be one manufacturer. No deviation will be considered.
- h. All series exit devices to incorporate a fluid damper, which decelerates the touchpad on its return stroke and eliminates noise associated with exit device operation. All exit devices to be non-handed. Touchpad to extend a minimum of 1/2 of the door width and to extend to the height of the cross-rail housing for a "no pinch" operation. Plastic touchpads are not acceptable. All latchbolts to be the deadlocking type. Latchbolts to have a self-lubricating coating to reduce wear. Plated or plastic coated latchbolts are not acceptable. Plastic linkage and "dogging" components are not acceptable.
- i. Surface vertical rod devices to be UL labeled for fire door applications without the use of bottom rod assemblies. Where bottom rods are required for security applications, the devices to be UL labeled for fire doors applications with rod and latch guards by the device manufacturer.
- j. Exit devices to include impact resistant, flush mounted end cap design to avoid damage due to carts and other heavy objects passing through an opening. End cap to be of heavy-duty metal alloy construction and provide horizontal adjustment to provide alignment with device cover plate. When exit device end cap is installed, no raised edges will protrude.

## G. Surface Closers:

- 1. Acceptable manufacturers:
  - a. LCN Closers 4040XP/4020 Series\*
  - b. Norton 9500 Series
  - c. Corbin Russwin DC8000
- 2. Characteristics:
  - a. Door closers to have fully hydraulic, full rack and pinion action with a high strength cast iron cylinder.
  - b. All closers to utilize a stable fluid withstanding temperature range of 120oF to -30oF without seasonal adjustment of closer speed to properly close the door. Closers for fire-rated doors to be provided with temperature stabilizing fluid that complies with standards UBC 7-2 (1997) and UL 10C.
  - c. Spring power to be continuously adjustable over the full range of closer sizes and allow for reduced opening force for the physically handicapped. Spring power adjustment (LCN Fast ™ Power Adjust) allows for quick and accurate power adjustment and visually shows closer power size settings by way of dial adjustment gauge located on closer spring tube. Hydraulic regulation to be by tamper-proof, non-critical valves. Closers to have separate adjustment for latch speed, general speed, and back check.
  - d. All closers to have solid forged steel main arms (and forearms for parallel arm closers) and where specified to have a cast-in solid stop on the closer shoe ("CUSH"). All parallel arm mounted closers to have "EDA" type arms or, where door travel on out-swing doors must be limited, use "CUSH" or "SCUSH" type closers. Auxiliary stops are not required when "CUSH" type closers are used. Provide drop plates where top rail of door is not sufficient for closer mounting. Provide "cush shoe supports" and "blade stop spacers" where dictated by frame details.

- e. Overhead concealed closers to have spring power adjustable for 50% increase in closing power and fully mortised door tracks.
- f. All surface closers to be certified to exceed ten million (10,000,000) full load cycles by a recognized independent testing laboratory. All closers (overhead, surface and concealed) to be of one manufacturer and carry manufacturer's ten-year warranty (electric closers to have two-year warranty).
- g. Access-Free Manual Closers: Where manual closers are indicated for doors required to be accessible to the physically handicapped provide adjustable units complying with ADA and ANSI A-117.1 provisions for door opening force.
- h. Closers to be installed to allow door swing as shown on plans. Doors swinging into exit corridors to provide for corridor clear width as required by code. Where possible, mount closers inside rooms.
- i. Powder coating finish to be certified to exceed 100 hours salt spray testing by ETL, an independent testing laboratory used by BHMA for ANSI certification.
- j. Combination Door Closers and Holders: Provide units designed to hold door in open position under normal usage and to release and automatically close door under fire conditions. Incorporate an integral electromagnetic holder mechanism designed for use with UL listed fire detectors, provided with normally closed switching contacts.
- k. Magnetic Door Holders to be heavy duty wall or floor mounted with metal housing and complete mounting hardware. Provide 24V holding coils unless otherwise scheduled.
- I. Where specified, security closers (Series 4040XP and 146) to have heavy duty forged steel arms with special joints to prevent disassembly. All covers to be one-piece drawn metal and utilize a four-point mounting. All exposed fasteners to have hex-lobular drive with a security pin.

## H. Power Operators:

- 1. Acceptable manufacturers:
  - a. LCN Senior Swing Series \*
  - b. Stanley Access Technologies
  - c. Besam Swingmaster MP Series
- 2. Characteristics:
  - a. Provide low energy automatic operator units that are electro-mechanical design complying with ANSI A156.19 where automatic operators are specified.
  - b. Operator shall be powered with a DC motor working through reduction gears. Closing shall be spring force. No manual, hydraulic, or chain drive closer will be acceptable. The motor is to be off when the door is in closing mode. The door can be manually operated with the power on or off without damage to the operator. The operator shall include variable adjustments, including opening and closing speed adjustment. Operator shall be mounted in an aluminum cover.
  - c. Provide units with manual off/auto/hold-open switch, push and go function to activate power operator, vestibule interface delay, electric lock delay, hold-open delay adjustable from 2 to 30 seconds, and logic terminal to interface with accessories, mats, and sensors.
  - d. Provide drop plates, brackets, or adapters for arms as required to suit details.
  - e. Provide hard-wired motion sensors and/or actuator switches for operation as specified. Actuators shall be weather-resistant type at exterior applications.
  - f. Provide key switches, with LED's, recommended and approved by the manufacturer of the automatic operator as required for the function as described in the operation description of the hardware sets. Cylinders: Refer to "KEYING" article, herein.
  - g. Where automatic operators are scheduled, provide complete assemblies of controls, switches, power supplies, relays, and parts/material recommended and approved by the manufacturer of the automatic operator for each individual leaf. Actuators shall control both doors simultaneously at

pairs. Exterior and vestibule doors with automatic operators shall be sequenced to allow ingress or egress through both sets of openings as directed by the Architect. Locate the actuators, key switches, and other controls as directed by the Architect.

- h. Provide units with inputs for smoke evacuation doors, where specified, which allow doors to power open upon fire alarm activation and hold open indefinitely or until fire alarm is reset, a presence detector input, which prevents a closed door from opening or a door that is fully opened from closing, a hold open toggle input, which allows remote activation for indefinite hold open and close the second time the input is activated, vestibule inputs, which allow sequencing operation of two units, and a SPDT relay for interfacing with latching or locking devices.
- I. Overhead Door Stop/Holders:
  - 1. Acceptable manufacturers:
    - a. Glynn Johnson\*
    - b. Rixson Firemark
  - 2. Characteristics:
    - a. Provide heavy duty concealed door holders of stainless steel.
    - b. Provide heavy duty surface mounted door holders of stainless steel.
    - c. Concealed holders to be installed with the jamb bracket mortised flush with the bottom of the jamb. The arm and channel to be mortised into the door.
    - d. Surface holders to be installed with the jamb bracket mounted on the stop.
- J. Floor Stops and Wall Bumpers:
  - 1. Acceptable manufacturers:
    - a. Ives\*
    - b. Trimco
    - c. Rockwood Manufacturing
  - 2. Characteristics: Refer to Hardware Headings.
- K. Door Bolts/Coordinators:
  - 1. Acceptable manufacturers:
    - a. lves\*
    - b. Trimco
    - c. Rockwood Manufacturing
  - 2. Characteristics:
    - a. Flush bolts to be forged brass  $6-3/4" \times 1"$ , with 1/2" diameter bolts. Plunger to be supplied with milled surface one side that fits into a matching guide.
    - b. Automatic flush bolts to be UL listed as top and bottom bolts on a pair of classified fire doors. Bolt construction to be of rugged steel and brass components.
    - c. Self-latching flush bolts to be UL listed as top and bottom bolts on a pair of classified fire doors. Bolt construction to be of rugged steel and brass components.
    - d. Automatic flush bolts and self-latching flush bolts to be UL listed for fire door application without bottom bolts (LBB).
    - e. Furnish dust proof bottom strikes.
    - f. Coordinator to be soffit mounted non-handed fully automatic UL listed coordinating device for sequential closing of paired doors with or without astragals.

g. Provide filler piece to close the header. Provide brackets as required for mounting of soffit applied hardware.

## L. Push Plates:

- 1. Acceptable manufacturers:
  - a. lves\*
  - b. Trimco
  - c. Rockwood Manufacturing
- 2. Characteristics:

Exposed Fasteners: Provide manufacturers standard exposed fasteners. Material to be forged stainless steel, per the Hardware Headings. Provide plates sized as shown in Hardware Headings.

- M. Door Pulls & Pull Plates:
  - 1. Acceptable manufacturers:
    - a. lves\*
    - b. Trimco
    - c. Rockwood Manufacturing
  - 2. Characteristics:
    - a. Provide concealed thru-bolted trim on back-to-back mounted pulls, but not for single units.
    - b. Material to be forged stainless steel.
    - c. Provide units sized as shown in Hardware Headings.
- N. Push Pull Sets:
  - 1. Acceptable manufacturers:
    - a. lves\*
    - b. Trimco
    - c. Rockwood Manufacturing
  - 2. Characteristics:
    - a. Provide mounting systems as shown in hardware sets.
    - b. Material to be tubular stainless steel.
    - c. Provide Push/Pull sets sized as shown in Hardware Headings.
- O. Protective Plates:
  - 1. Acceptable manufacturers:
    - a. Ives\*
    - b. Trimco
    - c. Rockwood Manufacturing
  - 2. Characteristics:
    - a. Provide manufacturers standard exposed fasteners for door trim units consisting of either machine screws or self-tapping screws.
    - b. Materials:
    - c. Metal Plates: Stainless Steel, .050 inch (U.S. 18 gage).

- d. Fabricate protection plates not more than 2 inches less than door width on push side and not more than 1 inch less than door width on pull side.
- e. Sizes:
  - 1) Refer to hardware headings for specific sizes.
  - 2) Kick plates to be 8 inches in height.
  - 3) Mop plates to be 6 inches in height.
- P. Thresholds:
  - 1. Acceptable manufacturers:
    - a. Zero Weatherstripping Co., Inc.\*
    - b. Pemko
    - c. Reese Industries
  - 2. Types: Indicated in Hardware Headings.
- Q. Door Seals/Gasketing:
  - 1. Acceptable manufacturers:
    - a. Zero Weatherstripping Co., Inc.\*
    - b. Pemko
    - c. Reese Industries
  - 2. Types: Indicated in Hardware Headings.
- R. Silencers:
  - 1. Acceptable manufacturers:
    - a. lves\*
    - b. Hager
    - c. Rockwood Manufacturing
  - 2. Provide three for each single door; two for each pair of doors.
- S. Key Cabinet and System:
  - 1. Acceptable manufacturers:
    - a. Telkee, Inc. (AS REQUIRED)
  - 2. Provide a key control system including envelopes, labels, tags with self-locking key clips, receipt forms, 3way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150 percent of the number of locks required for the project.
  - 3. Provide complete cross index system set up by key control distributor, and place keys on markers and hooks in the cabinet as determined by the final key schedule.
  - 4. Provide hinged-panel type cabinet for wall mounting.
  - 5. Provide multiple-drawer type cabinet.
- T. Knox Box:
  - 1. Acceptable manufacturers:

- a. Knox Box 3200 Series. (AS REQUIRED)
- 2. Characteristics:
  - a. Provide one surface mount Knox Box 3200 Series.
  - b. Provide unit compatible with the local Fire Department Knox key system.
  - c. General contractor shall install in location provided by architect.

### 2.3 MATERIALS AND FABRICATION

A. Manufacturer's Name Plate: Do not use manufacturers' products that have manufacturer's name or trade name displayed in a visible location (omit removable nameplates) except in conjunction with required fire rated labels and as otherwise acceptable to Architect.

Manufacturer's identification will be permitted on rim of lock cylinders only.

- B. Base Metals: Produce hardware units of basic metal and forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness, but in no case of lesser (commercially recognized) quality than specified for applicable hardware units by applicable ANSI/BHMA A156 series standards for each type of hardware item and with ANSI/BHMA A156.18 for finish designations indicated. Do not furnish "optional" materials or forming methods for those indicated, except as otherwise specified.
- C. Fasteners: Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
  - 1. Do not provide hardware that has been prepared for self-tapping sheet metal screws, except as specifically indicated.
  - Furnish screws for installation with each hardware item. Provide Phillips flat head screws except as
    otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or,
    if exposed in surfaces of other work, to match finish of this other work as closely as possible including
    "prepared for paint" surfaces to receive painted finish.
  - 3. Provide concealed fasteners for hardware units that are exposed when door is closed except to the extent no standard units of type specified are available with concealed fasteners.
  - 4. Do not use thru-bolts or sex bolts for installation where bolt head or nut on opposite face is exposed in other work unless their use is the only means of adequately fastening the hardware, or otherwise found in Headings. Coordinate with wood doors and metal doors and frames. Where thru-bolts are used, provide sleeves for each thru-bolt as a means of reinforcing the work, or use sex screw fasteners.

## **2.4 HARDWARE FINISHES:**

- A. Match items to the manufacturer's standard color and texture finish for the latch and lock sets (or push-pull units if no latch or lock sets).
- B. Provide finishes that match those established by ANSI or, if none established, match the Architect's sample.
- C. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.
- D. Provide protective lacquer coating on all exposed hardware finishes of brass, bronze, and aluminum, except as otherwise indicated. The suffix "-NL" is used with standard finish designations to indicate "no lacquer."
- E. The designations used to indicate hardware finishes are those listed in ANSI/BHMA A156.18, "Materials and Finishes," including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.

- F. All hardware to be 613 (US10B), Oil Rubbed Bronze, with the following exceptions:
  - 1. Continuous Hinges:
  - 2. Rated Architectural Hinges:
  - 3. Door Closers:
  - 4. Floor Stops:
  - 5. Thresholds:

6. Weather-stripping:

- 722 Dark Bronze Brown Silicon
- 7. Balance of miscellaneous hardware to be manufacturers Oil Rubbed Bronze option.
- 8. NOTE: CITY COUNCIL PORTION TO BE US32D BASE FINISHES

## PART 3 - EXECUTION

### 3.1 INSTALLATION:

- A. Mount hardware units at heights indicated in following applicable publications, except as specifically indicated or required to comply with governing regulations and except as otherwise directed by Architect.
  - 1. "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute.

313AN Dark Bronze Anodized Aluminum

640 Dark Oil Rubbed Bronze

695 Dark Bronze Powder Coat

704 Dark Oil Rubbed Bronze

- 2. "Recommended Locations for Builders Hardware for Custom Steel Doors and Frames" by the Door and Hardware Institute.
- 3. NWWDA Industry Standard I.S.1.7, "Hardware Locations for Wood Flush Doors."
- B. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Where cutting and fitting is required to install hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation or application of surface protection with finishing work specified in the Division 9 Sections. Do not install surface mounted items until finishes have been completed on the substrates involved.
- C. Set units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- D. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.
- E. Set thresholds for exterior doors in full bed of butyl rubber or polyisobutylene mastic sealant complying with requirements specified in Division 7 Section "Joint Sealers".
- F. Weatherstripping and Seals: Comply with manufacturer's instructions and recommendations to the extent installation requirements are not otherwise indicated.

## 3.2 ADJUSTING, CLEANING, AND DEMONSTRATING:

- A. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate freely and smoothly or as intended for the application made.
  - 1. Where door hardware is installed more than one month prior to acceptance or occupancy of a space or area, return to the installation during the week prior to acceptance or occupancy and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to function properly with final operation of heating and ventilating equipment.
- B. Clean adjacent surfaces soiled by hardware installation.

C. Door Hardware Supplier's Field Service:

Inspect door hardware items for correct installation and adjustment after complete installation of door hardware.

Instruct Owner's personnel in the proper adjustment and maintenance of door hardware and hardware finishes.

File written report of this inspection to Architect.

D. HARDWARE SCHEDULE:

# City Council (US32D Base Finishes):

# CC-01: CC122B

3 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	630	IVE
1 EA	ELECTRIC POWER	EPT 10 X CON	SP28	VON
	TRANSFER			
1 EA	ELECTRIC RIM EXIT	QEL-LX-RX-LC-98L-NL X 996L-NL (LAT SS) X 299(US32D)	US32D	VON
	DEVICE LEVER, NIGHT	X CON		
	LATCH			
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY		
		SYSTEM		
1 EA	CLOSER	4040XP X SCUSH	689	LCN
1 EA	WEATHER STRIPPING	8144S-BK PSA		ZER
1 EA	DOOR SWEEP	8198AA		ZER
1 EA	THRESHOLD	65A-223		ZER
1 EA	DRIP CAP	142AA		ZER
1 EA	WIRING HARNESS	CON-192P		VON
1 EA	WIRING HARNESS	CON-XXP		VON
1 EA	DOOR POSITION SWITCH	679-05WD/HM		SCE
1 EA	POWER SUPPLY	PS902 X 900-2RS-FA		VON
1 EA	READER CONTROLLER	RC04/15 (BY SECURITY ACCESS CONTROL SYSTEMS)		ISO

# CC-02: CC262

4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	630	IVE
1 EA	ELECTRIC POWER	EPT 10 X CON	SP28	VON
	TRANSFER			
1 EA	ELECTRIC RIM EXIT	QEL-LX-RX-LC-98L-NL X 996L-NL (LAT SS) X 299(US32D)	US32D	VON
	DEVICE LEVER, NIGHT	X CON		
	LATCH			
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY		
		SYSTEM		
1 EA	CLOSER	4040XP X SCUSH	689	LCN
3 EA	SILENCER	SR64	GRY	IVE
1 EA	WIRING HARNESS	CON-192P		VON
1 EA	WIRING HARNESS	CON-XXP		VON
1 EA	DOOR POSITION SWITCH	679-05WD/HM		SCE
1 EA	POWER SUPPLY	PS902 X 900-2RS-FA		VON
1 EA	READER CONTROLLER	RC04/15 (BY SECURITY ACCESS CONTROL SYSTEMS)		ISO

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## CC-03: CC130B

4 EA 1 EA	HINGE, 4 1/2, STD WT POWER TRANSFER	5BB1 X 4.5 X 4.5 EPT 10 X CON	630 SP28	IVE VON
1 EA	ELECTRIC RIM EXIT DEVICE LEVER, NIGHT LATCH	QEL-LX-RX-LC-98L-NL X 996L-NL (LAT SS) X 299(US32D) X CON	US32D	VON
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	CLOSER	4040XP X SCUSH	689	LCN
3 EA	SILENCER	SR64	GRY	IVE
1 EA	WIRING HARNESS	CON-192P		VON
1 EA	WIRING HARNESS	CON-XXP		VON
1 EA	DOOR POSITION SWITCH	679-05WD/HM		SCE
1 EA	POWER SUPPLY	PS902 X 900-2RS-FA		VON
1 EA	READER CONTROLLER	RC04/15 (BY SECURITY ACCESS CONTROL SYSTEMS)		ISO

# CC-04: CC122A - CC123 - CC126 - CC237 - CC238 - CC248 - CC253 - CC258

HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	630	IVE
ELECTRIC POWER	EPT 10 X CON	SP28	VON
TRANSFER			
ELECTRIC MORTISE LOCK	L9092LEU-RX X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP X	630	SCH
ELECTRIFIED LOCK	CON		
(OUTSIDE CYLINDER) -			
ELECTRICALLY UNLOCKED			
CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY		
	SYSTEM		
CLOSER	4040XP X RWPA	689	LCN
WALL STOP	WS406/407-CVX	US32D	IVE
SILENCER	SR64	GRY	IVE
WIRING HARNESS	CON-192P		VON
WIRING HARNESS	CON-XXP		VON
DOOR POSITION SWITCH	679-05WD/HM		SCE
POWER SUPPLY	PS902 X 900-2RS-FA		VON
READER CONTROLLER	RC04/15 (BY SECURITY ACCESS CONTROL SYSTEMS)		ISO
	HINGE, 4 1/2, STD WT ELECTRIC POWER TRANSFER ELECTRIC MORTISE LOCK ELECTRIFIED LOCK (OUTSIDE CYLINDER) - ELECTRICALLY UNLOCKED CYLINDER CLOSER WALL STOP SILENCER WIRING HARNESS WIRING HARNESS DOOR POSITION SWITCH POWER SUPPLY READER CONTROLLER	HINGE, 4 1/2, STD WT5BB1 X 4.5 X 4.5ELECTRIC POWEREPT 10 X CONTRANSFEREDT 10 X CONELECTRIC MORTISE LOCKL9092LEU-RX X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP XELECTRIFIED LOCKCON(OUTSIDE CYLINDER) - ELECTRICALLY UNLOCKEDCYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEMCLOSER4040XP X RWPAWALL STOPWS406/407-CVXSILENCERSR64WIRING HARNESSCON-192PWIRING HARNESSCON-20XDOOR POSITION SWITCH679-05WD/HMPOWER SUPPLYPS902 X 900-2RS-FAREADER CONTROLLERRC04/15 (BY SECURITY ACCESS CONTROL SYSTEMS)	HINGE, 4 1/2, STD WT5BB1 X 4.5 X 4.5630ELECTRIC POWEREPT 10 X CONSP28TRANSFERELECTRIC MORTISE LOCKL9092LEU-RX X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP X630ELECTRIFIED LOCKCONCON(OUTSIDE CYLINDER) - ELECTRICALLY UNLOCKEDCYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM689CLOSER4040XP X RWPA689WALL STOPWS406/407-CVXUS32DSILENCERSR64CON-192PWIRING HARNESSCON-192PGRYWIRING HARNESSCON-XXPGOVDOOR POSITION SWITCH679-05WD/HM

# CC-05: CC130A

8 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	630	IVE
1 EA	CVR EXIT DEVICE NIGHT LATCH CYLINDER ASSEMBLY	9847WDCNL-OP X 110WD-NL X 338 X LBR	US26D/ US32D	VON
1 EA	CVR EXIT DEVICE	9847WDCEO X 338 X LBR	US32D	VON
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
2 EA	PULL	9266F X 20" LESS DOOR HEIGHT X TYPE O MOUNTING	630-316	IVE
2 EA 2 EA	CLOSER, CONCEALED SILENCER	2030 X STDTRKARM X HBMP SR64	689 GRY	LCN IVE

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## CC-06: CC131

8 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	630	IVE
1 EA	FLUSH BOLT, MANUAL,	FB458-12	US26D	IVE
1 EA	FLUSH BOLT, MANUAL,	FB458-XX (SIZE AS REQUIRED)	US26D	IVE
1 EA	DUST PROOF STRIKE	DP2	US26D	IVE
1 EA	MORTISE LOCK STOREROOM	L9080L X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP	630	SCH
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
2 EA	OVERHEAD STOP/HOLDER,	90S	US32D	GLY
2 EA	SILENCER	SR64	GRY	IVE

# CC-07: CC127 - CC133

4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	630	IVE
1 EA	MORTISE LOCK STOREROOM	L9080L X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP	630	SCH
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	CLOSER	4040XP X RWPA	689	LCN
1 EA	WALL STOP	WS406/407-CVX	US32D	IVE
3 EA	SILENCER	SR64	GRY	IVE

# CC-08: CC124 - CC236 - CC239

4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	630	IVE
1 EA	MORTISE LOCK STOREROOM	L9080L X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP	630	SCH
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	CLOSER	4040XP X RWPA	689	LCN
1 EA	WALL STOP	WS406/407-CVX	US32D	IVE
1 EA	DOOR POSITION SWITCH	679-05WD		SCE
3 EA	SILENCER	SR64	GRY	IVE

# CC-09: CC241 - CC242 - CC243 - CC244 - CC245 - CC246 - CC247 - CC251

4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	630	IVE
1 EA	MORTISE LOCK OFFICE AND INNER ENTRY	L9050L X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP	630	SCH
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	WALL STOP	WS406/407-CVX	US32D	IVE
3 EA	SILENCER	SR64	GRY	IVE

## CC-10: CC257

4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	630	IVE
1 EA	MORTISE LOCK OFFICE AND INNER ENTRY	L9050L X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP	630	SCH
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	CLOSER	4040XP X RWPA	689	LCN
1 EA	FLOOR STOP	FS439	US10B	IVE
3 EA	SILENCER	SR64	GRY	IVE
cc	-11: CC132			
4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	630	IVE
1 EA	MORTISE LOCK OFFICE AND INNER ENTRY	L9050L X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP	630	SCH
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	CLOSER	4040XP X RWPA	689	LCN
1 EA	WALL STOP	WS406/407-CVX	US32D	IVE
1 EA	GASKETING, CATEGORY G	188S-BK PSA		ZER
1 EA	DOOR BOTTOM, AUTOMATIC, MORTISE	369AA		ZER
1 EA	THRESHOLD	64A		ZER
CC	-12: CC255			
4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	630	IVE
1 EA	MORTISE PASSAGE PASSAGE	L9010 X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP	630	SCH
1 EA	WALL STOP	WS406/407-CVX	US32D	IVE
3 EA	SILENCER	SR64	GRY	IVE
CC	-13: CC240			
4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	630	IVE
1 EA	MORTISE PASSAGE PASSAGE	L9010 X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP	630	SCH
1 EA	CLOSER	4040XP X RWPA	689	LCN
1 EA	WALL STOP	WS406/407-CVX	US32D	IVE
3 EA	SILENCER	SR64	GRY	IVE
cc	-14: CC259 – CC260			
4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	630	IVE
1 EA	MORTISE PRIVACY	L9040 X LATA X 10-072 X OS-OCC X 1-3/4 DR X 1-3/16 LIP	630	SCH
1 EA	MOP PLATE	8400 6" H X 1" LDW X B-CS	US32D	IVE
1 EA	KICK PLATE	8400 10" H X 1" LDW X B-CS	US32D	IVE
1 EA	WALL STOP	WS406/407-CVX	US32D	IVE
3 EA	SILENCER	SR64	GRY	IVE

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# CC-15: CC128 - CC129

4 EA	HINGE, 4 1/2, HVY WT	5BB1HW X 4.5 X 4.5	630	IVE
1 EA	PUSH PLATE	8200 X 4 X 16	US32D	IVE
1 EA	PULL PLATE	8303-0 X 4 X 16	US32D	IVE
1 EA	MOP PLATE	8400 6" H X 1" LDW X B-CS	US32D	IVE
1 EA	KICK PLATE	8400 10" H X 2" LDW X B-CS	US32D	IVE
1 EA	WALL STOP	WS406/407-CVX	US32D	IVE
1 EA	FOOT PULL	FP100	US32D	IVE
3 EA	SILENCER	SR64	GRY	IVE

## CC-16: CC263

1 EA	PULL, BACK TO BACK	LP3301 FHD x 0X x ADA Thumb-turn	US32D	Roc
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		IVE
1 EA	PATCH FITTING	PATCH FITTINGS & OTHER REQUIRED HARDWARE PROVIDED BY GLASS DOOR SUPPLIER / MANUFACTURER		IVE

\*\*\*NOTE: GLASS DOOR & BUTT JOINTED GLASS FRAME\*\*\*

## CC-AL-01: CC125D

2 EA	ELECTRIC CONTINUOUS HINGE	112XY X EPT	US28	IVE
2 EA	ELECTRIC POWER	EPT 10 X CON	SP28	VON
1 EA	ELECTRIC CVR EXIT DEVICE LEVER	QEL-LX-RX-LC-3347A-L X 360L(LAT SS) X 338 X 385A X SNB X CON	US32D/ US26D	VON
1 EA	ELECTRIC CVR EXIT DEVICE EXIT ONLY	QEL-LX-RX-LC-3347A-EO X 338 X 385A X SNB X CON	US26D	VON
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	CLOSER - AUTO OPERATOR, PUSH SIDE - 2 IN 1 SWING	9553 X REGARM	628	LCN
2 EA	ACTUATOR	8310-813WH	WH	LCN
1 EA	OPERATOR RECEIVER	8310-865	630	LCN
1 EA	OPERATOR TRANSMITTER	8310-844	689	LCN
1 EA	THRESHOLD	65A-223		ZER
2 EA	WIRING HARNESS	CON-192P		VON
2 EA	WIRING HARNESS	CON-XXP		VON
2 EA	DOOR POSITION SWITCH	679-05WD/HM		SCE
1 EA	POWER SUPPLY	PS902 X 900-2RS-FA		VON
1 EA	READER CONTROLLER	RC04/15 (BY SECURITY ACCESS CONTROL SYSTEMS)		ISO
1 EA	WEATHERSEALS	BALANCE OF HARDWARE BY ALUMINUM DOOR SUPPLIER/MFR		BYO

# CC-AL-02: CC125A - CC125B - CC125C

1 EA	ELECTRIC CONTINUOUS	112XY X EPT	US28	IVE
1 EA	ELECTRIC POWER	EPT 10 X CON	SP28	VON
1 EA	ELECTRIC RIM EXIT DEVICE LEVER	QEL-LX-RX-LC-33A-L X 360L(LAT SS) X 1439(US19) X SNB X CON	US32D/ US26D	VON
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	CLOSER, CONCEALED	2030 X STDTRKARM	689	LCN
1 EA	THRESHOLD	65A-223		ZER
1 EA	WIRING HARNESS	CON-192P		VON
1 EA	WIRING HARNESS	CON-XXP		VON
1 EA	DOOR POSITION SWITCH	679-05WD/HM		SCE
1 EA	POWER SUPPLY	PS902 X 900-2RS-FA		VON
1 EA	READER CONTROLLER	RC04/15 (BY SECURITY ACCESS CONTROL SYSTEMS)		ISO
1 EA	WEATHERSEALS	BALANCE OF HARDWARE BY ALUMINUM DOOR SUPPLIER/MFR		BYO

# CC-AL-03: CC264

1 EA	CONTINUOUS HINGE	112XY	US28	IVE
1 EA	MORTISE DEAD LOCK	MS1850S-XXX	628	ADA
1 EA	CYLINDER, THUMB TURN	4066-XX	130	ADA
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	CLOSER, CONCEALED	2030 X STDTRKARM	689	LCN
1 EA	PULL	PR-9266F X 24" X TYPE N MOUNTING	630-316	IVE
1 EA	THRESHOLD	65A-223		ZER
1 EA	DOOR POSITION SWITCH	679-05WD/HM		SCE
1 EA	WEATHERSEALS	BALANCE OF HARDWARE BY ALUMINUM DOOR SUPPLIER/MFR		BYO

# City Hall (US10B Base Finishes):

## CH-01: S2-L1

3 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	613	IVE
1 EA	ELECTRIC POWER	EPT 10 X CON	SP313	VON
	TRANSFER			
1 EA	ELECTRIC RIM EXIT	QEL-LX-RX-LC-98EO-F X 299F X 3-0 X CON	US10B	VON
	DEVICE EXIT ONLY - FIRE			
	EXIT DEVICE			
1 EA	PULL	9266F X 20" LESS DOOR HEIGHT X TYPE O MOUNTING	613	IVE
1 EA	CLOSER	4040XP X SCUSH	695	LCN
1 EA	WEATHER STRIPPING	8144S-BK PSA		ZER
1 EA	DOOR SWEEP	8198D		ZER
1 EA	THRESHOLD	65D-223		ZER
1 EA	DRIP CAP	142D		ZER
1 EA	WIRING HARNESS	CON-192P		VON
1 EA	WIRING HARNESS	CON-XXP		VON
1 EA	DOOR POSITION SWITCH	679-05WD/HM		SCE
1 EA	POWER SUPPLY	PS902 X 900-2RS-FA		VON
1 EA	READER CONTROLLER	RC04/15 (BY SECURITY ACCESS CONTROL SYSTEMS)		ISO

\*\*\*NOTE: EXISTING EXTERIOR ALUM. DOOR & FRAME\*\*\*

# CH-02: CH121

3 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5 X NRP	613	IVE
1 EA	MORTISE LOCK STOREROOM	L9080L X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP	643E	SCH
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	CLOSER	4040XP X CUSH	695	LCN
1 EA	WEATHER STRIPPING	8144S-BK PSA		ZER
1 EA	DOOR SWEEP	8198D		ZER
1 EA	THRESHOLD	65D-223		ZER
1 EA	DRIP CAP	142D		ZER
1 EA	DOOR POSITION SWITCH	679-05WD/HM		SCE

\*\*\*NOTE: EXISTING EXTERIOR ALUM. DOOR & FRAME\*\*\*

## CH-03: CH109B

3 EA	HINGE, 4 1/2, HVY WT	5BB1HW X 4.5 X 4.5	640	IVE
1 EA	ELECTRIC POWER TRANSER	EPT 10 X CON	SP313	VON
1 EA	ELECTRIC RIM EXIT	QEL-LX-RX-LC-98L-NL-F X 996L-NL (LAT BRASS) X 299F X CON	US10B	VON
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	CLOSER	4040XP X SCUSH	695	LCN
1 EA	GASKETING, CATEGORY G	188S-BK PSA		ZER
1 EA	WIRING HARNESS	CON-192P		VON
1 EA	WIRING HARNESS	CON-XXP		VON
1 EA	DOOR POSITION SWITCH	679-05WD/HM		SCE
1 EA	POWER SUPPLY	PS902 X 900-2RS-FA		VON
1 EA	READER CONTROLLER	RC04/15 (BY SECURITY ACCESS CONTROL SYSTEMS)		ISO

\*\*\*NOTE: EXISTING EXTERIOR ALUM. DOOR & FRAME\*\*\*

## CH-04: \$1-L2 - \$1-L3

HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	640	IVE
ELECTRIC POWER	EPT 10 X CON	SP313	VON
ELECTRIC RIM EXIT DEVICE LEVER, BLANK ESCUTCHEON - FIRE EXIT DEVICE	QEL-LX-RX-LC-98L-BE-F X 996L-BE (LAT BRASS) X 299F X CON	US10B	VON
CLOSER	4040XP X SCUSH	695	LCN
GASKETING, CATEGORY G	188S-BK PSA		ZER
WIRING HARNESS	CON-192P		VON
WIRING HARNESS	CON-XXP		VON
DOOR POSITION SWITCH	679-05WD/HM		SCE
POWER SUPPLY	PS902 X 900-2RS-FA		VON
READER CONTROLLER	RC04/15 (BY SECURITY ACCESS CONTROL SYSTEMS)		ISO
	HINGE, 4 1/2, STD WT ELECTRIC POWER TRANSFER ELECTRIC RIM EXIT DEVICE LEVER, BLANK ESCUTCHEON - FIRE EXIT DEVICE CLOSER GASKETING, CATEGORY G WIRING HARNESS WIRING HARNESS DOOR POSITION SWITCH POWER SUPPLY READER CONTROLLER	HINGE, 4 1/2, STD WT5BB1 X 4.5 X 4.5ELECTRIC POWEREPT 10 X CONTRANSFERELECTRIC RIM EXITELECTRIC RIM EXITQEL-LX-RX-LC-98L-BE-F X 996L-BE (LAT BRASS) X 299FDEVICE LEVER, BLANKX CONESCUTCHEON - FIRE EXITVONDEVICE4040XP X SCUSHGASKETING, CATEGORY G188S-BK PSAWIRING HARNESSCON-192PWIRING HARNESSCON-XXPDOOR POSITION SWITCH679-05WD/HMPOWER SUPPLYPS902 X 900-2RS-FAREADER CONTROLLERRC04/15 (BY SECURITY ACCESS CONTROL SYSTEMS)	HINGE, 4 1/2, STD WT5BB1 X 4.5 X 4.5640ELECTRIC POWEREPT 10 X CONSP313TRANSFERELECTRIC RIM EXITQEL-LX-RX-LC-98L-BE-F X 996L-BE (LAT BRASS) X 299FUS10BDEVICE LEVER, BLANKX CONX CONESCUTCHEON - FIRE EXITVA00XP X SCUSH695CLOSER4040XP X SCUSH695WIRING HARNESSCON-192PWIRING HARNESSCON-192PDOOR POSITION SWITCH679-05WD/HMPOWER SUPPLYPS902 X 900-2RS-FAREADER CONTROLLERRC04/15 (BY SECURITY ACCESS CONTROL SYSTEMS)

\*\*\*NOTE: EXISTING INTERIOR WOOD DOORS & H.M. FRAMES\*\*\*

# CH-05: S2-L3 (NOT USED)

4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	<del>640</del>	IVE
1 EA	ELECTRIC RIM EXIT	98L-BE-F X 996L-BE(LAT BRASS) X 299F	US10B	SCH
	<del>DEVICE, BLANK</del>			
	ESCUTCHEON		<del>695</del>	LCN
1 EA	-CLOSER	4040XP X SCUSH		

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\*\*\*NOTE: EXISTING INTERIOR WOOD DOORS & H.M. FRAMES\*\*\*

08 7100 - DOOR HARDWARE

# CH-06: CH110A

4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	613 6435	IVE
IEA	AND INNER ENTRY	L9050L X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP	043E	зсп
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	CLOSER	4040XP X SCUSH	695	LCN
1 EA	WEATHER STRIPPING	8144S-BK PSA		ZER
1 EA	DOOR SWEEP	8198D		ZER
1 EA	THRESHOLD	65D-223		ZER

## CH-07.1: CH103 - CH300A - CH300B

4 - 4			C 4 O	
4 EA	HINGE, 4 1/2, STD WI	5BB1 X 4.5 X 4.5	640	IVE
1 EA	ELECTRIC POWER	EPT 10 X CON	SP313	VON
	TRANSFER			
1 EA	ELECTRIC MORTISE LOCK	L9092LEU-RX X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP X	643E	SCH
	ELECTRIFIED LOCK	CON		
	(OUTSIDE CYLINDER) -			
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY		
		SYSTEM		
1 ⊑∆	CLOSER		605	
ILA	CEOSER		035	LON
1 EA	WALL STOP	WS406/407-CVX	US10B	IVE
3 EA	SILENCER	SR64	GRY	IVE
1 EA	WIRING HARNESS	CON-XXP		VON
1 EA	WIRING HARNESS	CON-192P		VON
1 EA	DOOR POSITION SWITCH	679-05WD/HM		SCE
1 EA	POWER SUPPLY	PS902 X 900-2RS-FA		VON
1 EA	READER CONTROLLER	RC04/15 (BY SECURITY ACCESS CONTROL SYSTEMS)		ISO

# CH-07.2: CH111 - CH119 - CH234

1 EA	ELECTRIC POWER	EPT 10 X CON	SP313	VON
1 EA	ELECTRIC MORTISE LOCK ELECTRIFIED LOCK (OUTSIDE CYLINDER) -	L9092LEU-RX X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP X CON	643E	SCH
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY		
1 = 4			605	
IEA	CLOSER		695	
1 EA	WALL STOP	WS406/407-CVX	US10B	IVE
3 EA	SILENCER	SR64	GRY	IVE
1 EA	WIRING HARNESS	CON-XXP		VON
1 EA	WIRING HARNESS	CON-192P		VON
1 EA	DOOR POSITION SWITCH	679-05WD/HM		SCE
1 EA	POWER SUPPLY	PS902 X 900-2RS-FA		VON
1 EA	READER CONTROLLER	RC04/15 (BY SECURITY ACCESS CONTROL SYSTEMS)		ISO

08 7100 - DOOR HARDWARE

## CH-08: S2-L2

4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	640	IVE
1 EA	ELECTRIC RIM EXIT DEVICE	98L-BE-F X 996L-BE (LAT BRASS) X 299F	US10B	SCH
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA 1 EA	CLOSER GASKETING, CATEGORY G	4040XP X SCUSH 188S-BK PSA	695	IVE ZER

## CH-09: CH311A - CH311B - CH325A - CH325B

8 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	640	IVE
1 EA	FLUSH BOLT, MANUAL, EXTENSION	FB458-12	US10B	IVE
1 EA	FLUSH BOLT, MANUAL, EXTENSION	FB458-XX (SIZE AS REQUIRED)	US10B	IVE
1 EA	DUST PROOF STRIKE	DP2	US10B	IVE
1 EA	MORTISE LOCK STOREROOM	L9080L X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP	643E	SCH
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
2 EA	SILENCER	SR64	GRY	IVE

# CH-10: CH110 - CH215B

4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	640	IVE
1 EA	MORTISE LOCK STOREROOM	L9080L X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP	643E	SCH
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	WALL STOP	WS406/407-CVX	US10B	IVE
3 EA	SILENCER	SR64	GRY	IVE

# CH-11: CH312

4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	640	IVE
1 EA	MORTISE LOCK STOREROOM	L9080L X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP	643E	SCH
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	WALL STOP	WS406/407-CVX	US10B	IVE
1 EA	DOOR POSITION SWITCH	679-05WD/HM		SCE
3 EA	SILENCER	SR64	GRY	IVE

## CH-12: CH315 - CH344

3 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	640	IVE
1 EA	MORTISE LOCK STOREROOM	L9080L X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP	643E	SCH
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	MOP PLATE	8400 6" H X 1" LDW X B-CS	US10B	IVE
1 EA	WALL STOP	WS406/407-CVX	US10B	IVE
3 EA	SILENCER	SR64	GRY	IVE

## CH-13: CH215A

4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	640	IVE
1 EA	MORTISE LOCK STOREROOM	L9080L X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP	643E	SCH
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	CLOSER	4040XP X RWPA	695	LCN
3 EA	SILENCER	SR64	GRY	IVE

# CH-14: CH104 - CH105 - CH106 - CH306 - CH307 - CH308 - CH309 - CH310 - CH335 - CH336 CH337 - CH338 - CH339 - CH340 - CH347 - CH351 - CH352

4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	640	IVE
1 EA	MORTISE LOCK OFFICE AND INNER ENTRY	L9050L X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP	643E	SCH
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	WALL STOP	WS406/407-CVX	US10B	IVE
3 EA	SILENCER	SR64	GRY	IVE

## CH-15: CH107

4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	640	IVE
1 EA	MORTISE PASSAGE	L9010 X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP	643E	SCH
	PASSAGE			
1 EA	WALL STOP	WS406/407-CVX	US10B	IVE
3 EA	SILENCER	SR64	GRY	IVE

# CH-16: CH217

4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	640	IVE
1 EA	PASSAGE	L9010 X LATA X 10-072 X 1-3/4 DR X 1-3/16 LIP	643E	SCH
1 EA	CLOSER	4040XP.RWPA.695.TBSRT	695	LCN
1 EA	KICK PLATE	8400 10" H X 2" LDW X B-CS	US10B	IVE
1 EA	WALL STOP	WS406/407-CVX	US10B	IVE
3 EA	SILENCER	SR64	GRY	IVE

## CH-17: CH112 - CH345

4 EA	HINGE, 4 1/2, STD WT	5BB1 X 4.5 X 4.5	640	IVE
1 EA	MORTISE PRIVACY	L9040 X LATA X 10-072 X OS-OCC X 1-3/4 DR X 1-3/16 LIP	643E	SCH
	BATH/BEDROOM PRIVACY			
1 EA	MOP PLATE	8400 6" H X 1" LDW X B-CS	US10B	IVE
1 EA	KICK PLATE	8400 10" H X 2" LDW X B-CS	US10B	IVE
1 EA	WALL STOP	WS406/407-CVX	US10B	IVE
3 EA	SILENCER	SR64	GRY	IVE

# CH-18: CH113 - CH114 - CH223 - CH225

1 EA	PULL	FP100	SP313	IVE
1 EA	EXISTING TO REMAIN	BALANCE OF HARDWARE EXISTING TO REMAIN		

\*\*\*NOTE: EXISTING INTERIOR WOOD DOORS & H.M. FRAMES\*\*\*

# CH-19: CH200A

1 EA	SURFACE	M490 X HDB490	628	SCE
	ELECTROMAGNETIC LOCK			
1 EA	PULL	PR-9266F X 20" LESS DOOR HEIGHT X TYPE P MOUNTING	613	IVE
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	MOTION SENSOR	SCAN II-W		SCE
1 EA	PUSH BUTTON RELEASE	660-PB		SCE
1 EA	POWER SUPPLY	PS902 X 900-2RS-FA		VON
1 EA	GLASS DOOR HARDWARE	PATCH FITTING & OTHER REQUIRED HARDWARE BY DOOR SUPPLIER/MANUFACTURER		BYO

\*\*\*NOTE: NEW GLASS DOOR & ALUM. FRAME\*\*\*

## CH-20: CH209

1 EA	PULL, BACK-TO-BACK	PR-9266F X 6" LESS DOOR HEIGHT X TYPE P MOUNTING	613	IVE
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
1 EA	GLASS DOOR HARDWARE	PATCH FITTING & OTHER REQUIRED HARDWARE BY DOOR SUPPLIER / MANUFACTURER		

\*\*\*NOTE: NEW GLASS DOOR & ALUM. FRAME\*\*\*

# CH-AL-01: CH101

2 EA	ELECTRIC CONTINUOUS HINGE	112XY X EPT	313AN	IVE
2 EA	ELECTRIC POWER	EPT 10 X CON	SP313	VON
1 EA	ELECTRIC CVR EXIT DEVICE NIGHT LATCH CYLINDER ASSEMBLY	QEL-LX-RX-LC-3347A-NL-OP X 388NL X 338 X 385A X SNB X CON	US10B	VON
1 EA	ELECTRIC CVR EXIT DEVICE EXIT ONLY	QEL-LX-RX-LC-3347A-EO X 338 X 385A X SNB X CON	US10B	VON
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
2 EA	PULL	9266F X 20" LESS DOOR HEIGHT X TYPE O MOUNTING	613	IVE
1 EA	CLOSER - AUTO OPERATOR, PUSH SIDE - 2 IN 1 SWING	9553 X REGARM	710	LCN
2 EA	ACTUATOR	8310-813WH	WH	LCN
1 EA	OPERATOR RECEIVER	8310-865	630	LCN
1 EA	OPERATOR TRANSMITTER	8310-844	689	LCN
1 EA	THRESHOLD	65D-223		ZER
2 EA	WIRING HARNESS	CON-192P		VON
2 EA	WIRING HARNESS	CON-XXP		VON
2 EA	DOOR POSITION SWITCH	679-05WD/HM		SCE
1 EA	POWER SUPPLY	PS904 X 900-4RL-FA		VON
1 EA	READER CONTROLLER	RC04/15 (BY SECURITY ACCESS CONTROL SYSTEMS)		ISO
1 EA	WEATHERSEALS	BALANCE OF HARDWARE BY ALUMINUM DOOR SUPPLIER/MFR		BYO

\*\*\*NOTE: NEW ALUMINUM DOOR & FRAME TO MATCH EXISTING REGIONS ENTRY\*\*\*

## CH-AL-02: CH102

2 EA	ELECTRIC CONTINUOUS	112XY X EPT	313AN	IVE
2 EA	ELECTRIC POWER	EPT 10 X CON	SP313	VON
	TRANSFER			
1 EA	ELECTRIC CVR EXIT	QEL-LX-RX-LC-3347A-NL-OP X 388NL X 338 X 385A X SNB X CON	US10B	VON
	DEVICE NIGHT LATCH			
4 🗆 ٨				VON
IEA		QEL-LA-RA-LU-3347A-EU A 338 A 365A A SIND A CUIN	05106	VON
1 FA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY		
/.	··	SYSTEM		
1 EA	PULL	9266F X 20" LESS DOOR HEIGHT X TYPE O MOUNTING	613	IVE
1 EA	CLOSER - AUTO	9553 X REGARM	710	LCN
	OPERATOR, PUSH SIDE - 2			
	IN 1 SWING			
2 EA	ACTUATOR	8310-813WH	WH	LCN
1 EA	OPERATOR RECEIVER	8310-865	630	LCN
1 EA	OPERATOR TRANSMITTER	8310-844	689	LCN
1 EA	THRESHOLD	65D-223		ZER
2 EA	WIRING HARNESS	CON-192P		VON
2 EA	WIRING HARNESS	CON-XXP		VON
2 EA	DOOR POSITION SWITCH	679-05WD/HM		SCE
1 EA	POWER SUPPLY	PS904 X 900-4RL-FA		VON
1 EA	READER CONTROLLER	RC04/15 (BY SECURITY ACCESS CONTROL SYSTEMS)		ISO
1 EA	WEATHERSEALS	BALANCE OF HARDWARE BY ALUMINUM DOOR SUPPLIER/MFR		BYO

# CH-AL-03: CH109A

1 EA	CONTINUOUS HINGE	112XY	313AN	IVE
1 EA	RIM EXIT DEVICE	33A-EO X 1439(US19) X SNB	US10B	VON
1 EA	CLOSER, CONCEALED	2030 X STDTRKARM	695	LCN
1 EA	THRESHOLD	65D-223		ZER
1 EA	WEATHERSEALS	BALANCE OF HARDWARE BY ALUMINUM DOOR SUPPLIER/MFR		BYO

# CH-AL-04: CH218

2 EA	CONTINUOUS HINGE	112XY	313AN	IVE
1 EA	HEADER BOLT	4085-XX-IB	603	ADA
1 EA	THRESHOLD BOLT	4015-XX-IB	603	ADA
1 EA	MORTISE DEAD LOCK	MS1850S-XXX	313	ADA
1 EA	CYLINDER, THUMB TURN	4066-XX	313	ADA
1 EA	CYLINDER	CYLINDER AS REQUIRED TO MATCH EXISTING KEY SYSTEM		
2 EA	PULL	PR-9266F X 20" LESS DOOR HEIGHT X TYPE N MOUNTING	613	IVE
1 EA	CLOSER, CONCEALED	2030 X STDTRKARM	695	LCN
1 EA	THRESHOLD	65D-223		ZER
1 EA	DOOR POSITION SWITCH	679-05WD/HM		SCE
1 EA	WEATHERSEALS	BALANCE OF HARDWARE BY ALUMINUM DOOR SUPPLIER/MFR		BYO

END OF SECTION 08 7100

- C. Place layer of woven polyester filter fabric between the pedestal system and the roofing membrane.
- D. Pedestal Slope Compensation:
  - 1. Pedestal model provided with integrated base leveler component to compensate for up to ½ inch per foot slope. Additional slope compensation can be added if required.
  - 2. Shims may be used in multiples, whole or segmented, and placed under the base to level the deck support.
  - 3. The top of pedestals: Do not exceed number of shims recommended by manufacturer.

# 3.04 DECK SUPPORT PLACEMENT AND FINAL ADJUSTMENT

- A. Deck supports and the deck surface panels must be placed as the manufacturer directs in published instructions. Use of labor saving devices, such as paver lifters, is encouraged, especially on large jobs.
- B. Pedestals may be rotated for final slight adjustment when pedestals are fully loaded. Deck supports should be leveled in each succeeding row as the installation proceeds. Final height adjustment or maintenance to be made by rotating the base as required to raise or lower the deck surface material.
- C. Additional sections of shims may be used and should be available for regular maintenance. Shims may be used in multiples, whole or segmented, and placed under the base or on top the pedestal to level the deck support.

## 3.05 PERIMETER CONTAINMENT

A. Any area of a deck that is not restrained by a parapet or foundation wall shall be contained. Perimeter containment located at the outside of the deck must be installed to provide restraint. No movement should occur at the perimeter of the deck system greater than one tab width.

# 3.06 FIELD QUALITY CONTROL

- A. Inspect regularly during installation to assure that grid spacer lines are being maintained in a straight and consistent pattern and that deck panels or pavers are level and not rocking.
- B. Confirm that deck pedestal height does not exceed the specified height for the V Series:
- C. 24 inches (610mm) maximum pedestal height.
- D. Allow for expansion, per manufacturer's recommendations
- E. Ensure that tiles at all pedestrian entry or access points to the deck are level with each other and adjacent surfaces.
- F. Ensure that deck surface tiles are not randomly raised or uneven creating a tripping hazard.

# 3.07 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

# 3.08 IMMEDIATELY FOLLOWING INSTALLATION

- A. The Owner, or the Owner's Agent, shall carefully inspect the deck system as follows:
  - 1. Deck system is adequately blocked on all sides to contain the surface decking and related components.
  - 2. Maximum tab width spacing between any deck panels and deck perimeter.
  - 3. Corners and edges of panels are stable and do not rock, or wobble.

## 3.09 ROUTINE MAINTENANCE AND CARE

A. Manufacturer's representative shall instruct the Owner in routine maintenance of the deck including inspection for rocking pavers and required adjustment.

## END OF SECTION

#### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Selection and installation of communications bus bars.
  - 2. Selection and installation of communications bonding conductors.
  - 3. Selection of signal reference grids.
  - 4. Installation of grounding and bonding for towers and antennas.
- B. Related Requirements:
  - 1. Section 26 0011 "Facility Performance Requirements for Electrical" for seismic-load, wind-load, acoustical, and other field conditions applicable to Work specified in this Section.
  - 2. Section 27 0010 "Supplemental Requirements for Communications" for additional abbreviations, definitions, submittals, qualifications, testing agencies, and other Project requirements applicable to Work specified in this Section.

### 1.2 DEFINITIONS

- A. BBC: Backbone bonding conductor, for connecting multiple TBBs serving the same floor.
- B. PBB: Primary bonding busbar, located in main distribution frame room, ideally near electrical service entrance.
- C. RBB: Rack bonding busbar, located in equipment cabinets and racks.
- D. SBB: Secondary bonding busbar, located in intermediate distribution frame rooms.
- E. TBB: Telecommunications bonding backbone, for connecting SBBs to PBB.
- F. TBC: Telecommunications bonding conductor, for connecting PBB to intersystem bonding termination device or busbar at electrical service entrance.
- G. TEBC: Telecommunications equipment bonding conductor, for connecting RBBs to SBBs or PBB.
- H. UBC: Unit bonding conductor, for connecting individual communications equipment to RBBs or SBBs.

### 1.3 ACTION SUBMITTALS

- A. Shop Drawings:
  - 1. For communications equipment room signal reference grid.
  - 2. Include plans, elevations, sections, details, and attachments to other work.
- B. Field Quality-Control Submittals:

1. Field quality-control reports.

### 1.4 INFORMATIONAL SUBMITTALS

- A. Manufacturers' Published Instructions: Record copy of official installation and testing instructions issued to Installer by manufacturer for the following:
  - 1. Installing wire connector on conductor.
  - 2. Recommended torque values.

#### 1.5 CLOSEOUT SUBMITTALS

A. Record Documentation: Project record documents in accordance with Section 01 7839 "Project Record Documents" must include locations of PBB and SBBs, and routing of TBC, TBBs, and BBCs.

### PART 2 - PRODUCTS (Not Used)

#### PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Examine facility's grounding electrode system and equipment grounding for compliance with requirements for maximum ground-resistance level and other conditions affecting performance of grounding and bonding of electrical system.
- B. Inspect test results of grounding system measured at point of TBC connection.
- C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- D. Proceed with connection of TBC only after unsatisfactory conditions have been corrected.

#### 3.2 SELECTION OF COMMUNICATIONS BUSBARS

- A. Unless otherwise indicated in this Section or on Drawings, provide products specified in Section 26 0526 "Grounding and Bonding for Electrical Systems."
- B. PBB/TMGB:
  - 1. Dimensions: 1/4 inch thick by 4 inch high (6.3 mm thick by 100 mm high).
  - 2. Stand-Off Distance: 2 inch (50 mm).
- C. SBB/TGB:
  - 1. Dimensions: 1/4 inch thick by 4 inch high (6.3 mm thick by 100 mm high).
  - 2. Stand-Off Distance: 2 inch (50 mm).

### 3.3 SELECTION OF COMMUNICATIONS BONDING CONDUCTORS

- A. Unless otherwise indicated in this Section or on Drawings, provide products specified in Section 26 0526 "Grounding and Bonding for Electrical Systems."
- B. Communications Busbar Connections:
  - 1. TBC: Not smaller than 3/0 AWG and no smaller than largest TBB.
  - 2. TBB: Not smaller than 2 kcmil per linear ft of conductor length, but not larger than 750 kcmil, unless otherwise indicated on Drawings.
  - 3. BBC: Not smaller than largest TBB to which it is connected unless otherwise indicated on Drawings.
  - 4. TEBC: Not smaller than 2 AWG unless otherwise indicated on Drawings. Provide bolted connectors.
  - 5. UBC: Not smaller than 6 AWG unless otherwise indicated on Drawings. Provide bolted connectors.
  - 6. Bonding Conductors to Structural Steel: Not smaller than 6 AWG unless otherwise indicated on Drawings. Provide bolted clamp connectors.
- C. Cable Tray Connections:
  - 1. Cable Tray Equipment Grounding Conductor: 6 AWG.
  - 2. Cable Tray Bonding Jumper: If not supplied by cable manufacturer, provide bonding jumper not smaller than 6 AWG and not longer than 12 inch (300 mm). If jumper is wire, it must be terminated with lug having two holes and long barrel for two crimps. If jumper is flexible braid, it must be terminated with one or two-hole ferrule. Attach with bonding screw or connector provided by cable tray manufacturer.
- D. Underground Connections: Not smaller than 2 AWG. Provide welded connectors, except bolted connectors may be used in handholes or manholes and as otherwise indicated on Drawings.

#### 3.4 INSTALLATION OF BONDING FOR COMMUNICATIONS

- A. Comply with manufacturer's published instructions.
- B. Reference Standards:
  - 1. Bonding of Communications: Unless more stringent requirements are specified in Contract Documents or manufacturers' published instructions, comply with BICSI N3.
  - 2. Consult Architect for resolution of conflicting requirements.
- C. Special Techniques:
  - 1. Busbars:
    - a. Indicate locations of grounding busbars on Drawings. Install busbars horizontally, on insulated spacers 12 inch (300 mm) above finished floor unless otherwise indicated.
    - b. Where indicated on both sides of doorways, route bus up to top of door frame, across top of doorway, and down; connect to horizontal bus.
  - 2. Conductors:

- a. Stacking of conductors under a single bolt is not permitted when connecting to busbars.
- b. Assemble wire connector to conductor, complying with manufacturer's published instructions and as follows:
  - 1) Use crimping tool and die specific to connector.
  - 2) Pre-twist conductor.
  - 3) Apply antioxidant compound to bolted and compression connections.
- c. Install in straightest and shortest route between origination and termination point, and no longer than required. Bend radius must not be smaller than 10 times diameter of conductor. No single bend may exceed 90 degrees.
- d. Install without splices.
- e. Support conductors at not more than 36-inch (900 mm) intervals.
- f. Outside telecommunications rooms, install conductors in metric designator 21 (trade size 3/4) PVC-80 conduit until conduit enters telecommunications room. Install bonding conductors in EMT-A or EMT-SS when routed through plenum. Do not install bonding conductors in EMT-S unless otherwise indicated on Drawings.
  - If bonding conductor must be installed in EMT-S or other ferrous metallic raceway, bond conductor to raceway using grounding bushing that complies with Section 27 0528 "Pathways for Communications Systems," and bond both ends of raceway to SBB.
- 3. Provide TBC and terminate ends to PBB and intersystem bonding busbar at electrical service entrance in accordance with Section 250.94, "Bonding for Communication Systems," of NFPA 70.
- 4. Busbar Interconnections: Bond SBBs to PBB with TBBs. If more than one TBB is installed, bond TBBs together BBCs where required by TIA-607.
- 5. Structural Steel: Where structural steel of steel frame building is readily accessible within room or space, bond each SBB and PBB to vertical steel of building frame.
- 6. Communications Enclosures: Bond metallic enclosures of telecommunications equipment with UBCs to nearest SBB or PBB.
- 7. Equipment Racks: Bond metallic components of enclosures to RBB using UBCs. Provide topmounted or vertically mounted RBB if not provided by enclosure or rack manufacturer. Bond RBB to SBB with TEBC. Power connection must comply with NFPA 70; equipment grounding conductor in power cord of cord- and plug-connected equipment must be considered supplemental to bonding requirements in this Section.
- 8. Shielded Cable: Bond shield of shielded cable to SBB in communications rooms and spaces. Comply with TIA-568.1 and TIA-568.2 when grounding shielded balanced twisted-pair cables.
- 9. Primary Protector: Bond to PBB with insulated bonding conductor.
- 10. Electrical Power Panelboards: Where electrical panelboards for communications equipment are located in same room or space, bond each ground bar of panelboard to SBB.
- 11. Cable Trays: Provide continuous electrical path by installing bonding clips and jumpers. Bond each end to nearest SBB.
- 12. Ladder Racks: Provide continuous electrical path by installing bonding clips and jumpers. Bond each end to nearest SBB.

## 3.5 IDENTIFICATION

- A. Comply with Section 27 0553 "Identification for Communications Systems."
- B. Labels must be preprinted or computer-printed type.

- 1. Label PBB(s) with "TS-PBB," where "TS" is telecommunications space identifier for location of PBB.
- 2. Label SBB(s) with "TS-SBB," where "TS" is telecommunications space identifier for location of SBB.
- 3. Label TBC, TBBs, and BBCs at attachment points with legend: "WARNING! COMMUNICATIONS BONDING CONDUCTOR. DO NOT REMOVE OR DISCONNECT!"

## 3.6 FIELD QUALITY CONTROL

- A. Field tests and inspections must be witnessed by authorities having jurisdiction where required.
- B. Tests and Inspections:
  - 1. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with calibrated torque wrench according to manufacturer's published instructions.
  - 2. Test bonding connections of system using AC earth ground-resistance tester, taking two-point bonding measurements in each telecommunications equipment room containing PBB or SBB, using process recommended by BICSI N1. Conduct tests with facility in operation.
    - a. Measure resistance between PBB and electrical service intersystem termination point. Maximum acceptable value is  $100 \text{ m}\Omega$ .
      - 1) If measured resistance from electrical service equipment to ground exceeds  $5 \Omega$ , notify Architect and include recommendations to reduce resistance to ground.
    - b. Measure resistance between SBBs and PBB. Maximum acceptable value is 100 mΩ.
  - 3. Test for ground loop currents using digital clamp-on ammeter, with full scale not more than 10 A, displaying current in increments of 0.01 A at accuracy of plus or minus 2.0 percent.
    - a. With grounding infrastructure completed and communications system electronics operating, measure current in bonding conductors connected to PBB and to SBBs. Maximum acceptable AC current level is 1 A.
- C. Nonconforming Work:
  - 1. Communications bonding will be considered defective if it does not pass tests and inspections.
  - 2. Remove and replace defective units and retest.
- D. Collect, assemble, and submit test and inspection reports.

## 3.7 PROTECTION

A. After installation, protect busbars and conductors from construction activities. Remove and replace items that are contaminated, defaced, damaged, or otherwise caused to be unfit for use prior to acceptance by Owner.

## END OF SECTION 270526

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### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Steel slotted support systems.
  - 2. Aluminum slotted support systems.
  - 3. Nonmetallic slotted support systems.
  - 4. Conduit and cable support devices.
  - 5. Support for conductors in vertical conduit.
  - 6. Structural steel for fabricated supports and restraints.
  - 7. Mounting, anchoring, and attachment components.
  - 8. Fabricated metal equipment support assemblies.
- B. Related Requirements:
  - 1. Section 27 0548 "Seismic Controls for Communications Systems" for products and installation requirements necessary for compliance with seismic criteria.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:
    - a. Slotted support systems, hardware, and accessories.
    - b. Clamps.
    - c. Hangers.
    - d. Sockets.
    - e. Eye nuts.
    - f. Fasteners.
    - g. Anchors.
    - h. Saddles.
    - i. Brackets.
    - j. J-Hooks.
  - 2. Include rated capacities and furnished specialties and accessories.
  - 3. Trapeze hangers. Include product data for components.
  - 4. Steel slotted-channel systems.
  - 5. Aluminum slotted-channel systems.
  - 6. Nonmetallic slotted-channel systems.
  - 7. Equipment supports.
  - 8. Vibration Isolation Base Details: Detail fabrication, including anchorages and attachments to structure and to supported equipment. Include adjustable motor bases, rails, and frames for equipment mounting.

### 1.3 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plan(s) and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
  - 1. Suspended ceiling components.
  - 2. Ductwork, piping, fittings, and supports.
  - 3. Structural members to which hangers and supports will be attached.
  - 4. Size and location of initial access modules for acoustical tile.
  - 5. Items penetrating finished ceiling, including the following:
    - a. Luminaires.
    - b. Air outlets and inlets.
    - c. Speakers.
    - d. Sprinklers.
    - e. Access panels.
    - f. Projectors.
- B. Seismic Qualification Data: Certificates, for hangers and supports for communications equipment and systems, accessories, and components, from manufacturer.
  - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
  - 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
  - 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- C. Welding certificates.

#### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 4000 "Quality Requirements," to design hanger and support system.
- B. Seismic Performance: Hangers and supports shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
  - 1. The term "withstand" means "the supported equipment and systems will remain in place without separation of any parts when subjected to the seismic forces specified and the system will be fully operational after the seismic event."
  - 2. Component Importance Factor: 1.5.
- C. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
  - 1. Flame Rating: Class 1.

2. Self-extinguishing according to ASTM D635.

### 2.2 STEEL SLOTTED SUPPORT SYSTEMS

- A. Steel Slotted Support Systems: Preformed steel channels and angles with minimum 13/32-inch- (10mm-) diameter holes at a maximum of 8 inches (200 mm) o.c. in at least one surface.
  - 1. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
  - 2. Material for Channel, Fittings, and Accessories: Galvanized steel.
  - 3. Channel Width: Selected for applicable load criteria 1-5/8 inches (41.25 mm).
  - 4. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
  - 5. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
  - 6. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
  - 7. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
  - 8. Channel Dimensions: Selected for applicable load criteria.

### 2.3 CONDUIT AND CABLE SUPPORT DEVICES

A. Conduit and Cable Support Devices: Steel and malleable-iron clamps, hangers, and associated fittings, designed for types and sizes of raceway or cable to be supported.

### 2.4 SUPPORT FOR CONDUCTORS IN VERTICAL CONDUIT

A. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for nonarmored communications conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be made of malleable iron.

#### 2.5 STRUCTURAL STEEL FOR FABRICATED SUPPORTS AND RESTRAINTS

A. Structural Steel for Fabricated Supports and Restraints: ASTM A36/A36M steel plates, shapes, and bars; black and galvanized.

#### 2.6 MOUNTING, ANCHORING, AND ATTACHMENT COMPONENTS

- A. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
  - 1. Powder-Actuated Fasteners: Threaded-steel stud for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
  - 2. Mechanical-Expansion Anchors: Insert-wedge-type zinc-coated steel and stainless steel for use in hardened portland cement concrete, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.

- 3. Concrete Inserts: Steel or malleable-iron, slotted support system units are similar to MSS Type 18 units and comply with MFMA-4 or MSS SP-58.
- 4. Clamps for Attachment to Steel Structural Elements: MSS SP-58 units are suitable for attached structural element.
- 5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM F3125/F3125M, Grade A325 (Grade A325M).
- 6. Toggle Bolts: All-steel springhead type.
- 7. Hanger Rods: Threaded steel.

## 2.7 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- A. Description: Welded or bolted structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.
- B. Materials: Comply with requirements in Section 05 5000 "Metal Fabrications" for steel shapes and plates.

## PART 3 - EXECUTION

### 3.1 APPLICATION

- A. Comply with the following standards for application and installation requirements of hangers and supports, except where requirements on Drawings or in this Section are stricter:
  - 1. NECA 1.
  - 2. NECA/BICSI 568.
  - 3. TIA-569-D.
  - 4. NECA 101.
  - 5. NECA 102.
  - 6. NECA 105.
  - 7. NECA 111.
- B. Comply with requirements in Section 07 8413 "Penetration Firestopping" for firestopping materials and installation for penetrations through fire-rated walls, ceilings, and assemblies.
- C. Comply with requirements for pathways specified in Section 27 0528 "Pathways for Communications Systems."
- D. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMTs, IMCs, and RMCs as scheduled in NECA 1, where its Table 1 lists maximum spacings that are less than those stated in] NFPA 70. Minimum rod size shall be 1/4 inch (6 mm) in diameter.
- E. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
  - 1. Secure raceways and cables to these supports with two-bolt conduit clamps.

F. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch (38-mm) and smaller raceways serving branch circuits and communication systems above suspended ceilings and for fastening raceways to trapeze supports.

### 3.2 INSTALLATION OF SUPPORTS

- A. Raceway Support Methods: In addition to methods described in NECA 1, EMT, IMC and RMC may be supported by openings through structure members, according to NFPA 70.
- B. Strength of Support Assemblies: Where not indicated, select sizes of components, so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb (90 kg).
- C. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten communications items and their supports to building structural elements by the following methods unless otherwise indicated by code:
  - 1. To Wood: Fasten with lag screws or through bolts.
  - 2. To New Concrete: Bolt to concrete inserts.
  - 3. To Masonry: Use approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
  - 4. To Existing Concrete: Use expansion anchor fasteners.
  - 5. Instead of expansion anchors, powder-actuated-driven threaded studs, provided with lock washers and nuts, may be used in existing standard-weight concrete 4 inches (100 mm) thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches (100 mm) thick.
  - 6. To Steel: Beam clamps (MSS SP-58, Type 19, 21, 23, 25, or 27), complying with MSS SP-69.
  - 7. To Light Steel: Sheet metal screws.
  - 8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate by means that comply with seismic-restraint strength and anchorage requirements.
- D. Drill holes for expansion anchors in concrete at locations and to depths that avoid the need for reinforcing bars.
- E. Field Welding: Comply with AWS D1.1/D1.1M.

## 3.3 PAINTING

- A. Touchup:
  - 1. Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
    - a. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils (0.05 mm).
B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas, and apply galvanizing-repair paint to comply with ASTM A780.

## END OF SECTION 270529

### PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

### 1.2 SUMMARY

- A. Section Includes:
  - 1. Ladder cable tray.
  - 2. Wire-mesh cable tray.
  - 3. Single-rail cable tray.
  - 4. Trough cable tray.
  - 5. Cable tray accessories.
  - 6. Warning signs.
- B. Related Requirements:
  - 1. Section 26 0536 "Cable Trays for Electrical Systems" for cable trays and accessories serving electrical systems.
- C. Furnish, install, ground and bond a cable tray system as shown on drawing(s) within the IT Equipment Room/MDF.
- D. All cable/ladder tray, supports, fittings and accessories shall be WHITE in color.

## 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of cable tray.
  - 1. Include data indicating dimensions and finishes for each type of cable tray indicated.
- B. Shop Drawings: For each type of cable tray.
  - 1. Show fabrication and installation details of cable trays, including plans, elevations, and sections of components and attachments to other construction elements. Designate components and accessories, including clamps, brackets, hanger rods, splice-plate connectors, expansion-joint assemblies, straight lengths, and fittings.
  - 2. Cable tray layout, showing cable tray route to scale, with relationship between the tray and adjacent structural, electrical, and mechanical elements. Include the following:
    - a. Vertical and horizontal offsets and transitions.
    - b. Clearances for access above and to sides of cable trays.
    - c. Vertical elevation of cable trays above the floor or bottom of ceiling structure.
    - d. Load calculations to show dead and live loads as not exceeding manufacturer's rating for tray and its support elements.

- C. Delegated-Design Submittal: For seismic restraints.
  - 1. Seismic-Restraint Details: Signed and sealed by a qualified professional engineer, licensed in the state where Project is located, who is responsible for their preparation.
  - 2. Design Calculations: Calculate requirements for selecting seismic restraints.
  - 3. Detail fabrication, including anchorages and attachments to structure and to supported cable trays.

### 1.4 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Floor plans and sections, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
  - 1. Scaled cable tray layout and relationships between components and adjacent structural, electrical, and mechanical elements.
  - 2. Vertical and horizontal offsets and transitions.
  - 3. Clearances for access above and to side of cable trays.
  - 4. Vertical elevation of cable trays above the floor or below bottom of ceiling structure.
- B. Seismic Qualification Data: Certificates, for cable trays, accessories, and components, from manufacturer.
  - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
  - 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
  - 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- C. Field quality-control reports.

## PART 2 - PRODUCTS

## 2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 4000 "Quality Requirements," to design cable tray supports and seismic bracing.
- B. Seismic Performance: Cable trays and supports shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
  - 1. The term "withstand" means "the cable trays will remain in place without separation of any parts when subjected to the seismic forces specified."
  - 2. Component Importance Factor: 1.5.

### 2.2 GENERAL REQUIREMENTS FOR CABLE TRAYS

A. Cable Trays and Accessories: Identified as defined in NFPA 70 and marked for intended location, application, and grounding.

- 1. Source Limitations: Obtain cable trays and components from single manufacturer.
- B. Sizes and Configurations: See the Cable Tray Schedule on Drawings for specific requirements for types, materials, sizes, and configurations.
- C. Structural Performance: See articles for individual cable tray types for specific values for the following parameters:
  - 1. Uniform Load Distribution: Capable of supporting a uniformly distributed load on the indicated support span when supported as a simple span and tested according to NEMA VE 1.
  - 2. Concentrated Load: A load applied at midpoint of span and centerline of tray.
  - 3. Load and Safety Factors: Applicable to both side rails and rung capacities.

## 2.3 LADDER CABLE TRAY

- A. Description:
  - 1. Configuration: Two longitudinal side rails with transverse rungs swaged or welded to side rails, complying with NEMA VE 1.
  - 2. Width: 12 inches (300 mm), 18 inches (450 mm) and 24 inches (600 mm) unless otherwise indicated on Drawings.
  - 3. Straight Section Lengths: 10 feet (3.0 m), except where shorter lengths are required to facilitate tray assembly.
  - 4. Rung Spacing: 9 inches (225 mm) o.c.
  - 5. Radius-Fitting Rung Spacing: 9 inches (225 mm) at center of tray's width.
  - 6. Minimum Cable-Bearing Surface for Rungs: 7/8-inch (22-mm) width with radius edges.
  - 7. No portion of the rungs shall protrude below the bottom plane of side rails.
  - 8. Structural Performance of Each Rung: Capable of supporting a maximum cable load, with a safety factor of 1.5, plus a 200-lb (90-kg) concentrated load, when tested according to NEMA VE 1.
  - 9. Fitting Minimum Radius: 12 inches (300 mm).
  - 10. Class Designation: Comply with NEMA VE 1
  - 11. Splicing Assemblies: Bolted type using serrated flange locknuts.
  - 12. Splice-Plate Capacity: Splices located within support span shall not diminish rated loading capacity of cable tray.
  - 13. Install in equipment rooms, telecom rooms and other IT spaces as indicated on drawings.
- B. Materials and Finishes:
  - 1. Steel:
    - a. Straight Section and Fitting Side Rails and Rungs: Steel complies with the minimum mechanical properties of ASTM A1011/A1011M, SS, Grade 33.
    - b. Steel Tray Splice Plates: ASTM A1011/A1011M, HSLAS, Grade 50, Class 1.
    - c. Fasteners: Steel complies with the minimum mechanical properties of ASTM A510/A510M, Grade 1008.
    - d. Color: WHITE.

### 2.4 WIRE-MESH CABLE TRAY

A. Description:

- 1. Configuration: Galvanized-steel wire mesh, complying with NEMA VE 1.
- 2. Width: 12 inches (300 mm), 18 inches (450 mm) and 24 inches (600 mm) unless otherwise indicated on Drawings.
- 3. Straight Section Lengths: 10 feet (3.0 m) except where shorter lengths are required to facilitate tray assembly.
- 4. Structural Performance: Capable of supporting a maximum cable load, with a safety factor of 1.5, plus a 200-lb (90-kg) concentrated load, when tested according to NEMA VE 1.
- 5. Class Designation: Comply with NEMA VE 1.
- 6. Splicing Assemblies: Bolted type using serrated flange locknuts.
- 7. Splice-Plate Capacity: Splices located within support span shall not diminish rated loading capacity of cable tray.
- 8. Install above accessible ceilings of corridors as indicated on drawings.
- B. Materials and Finishes:
  - 1. Steel:
    - a. Straight Sections and Fittings: Steel complies with the minimum mechanical properties of ASTM A1011/A1011M, SS, Grade 33.
    - b. Steel Tray Splice Plates: ASTM A1011/A1011M, HSLAS, Grade 50, Class 1.
    - c. Fasteners: Steel complies with the minimum mechanical properties of ASTM A510/A510M, Grade 1008.
    - d. Finish: Hot-dip galvanized after fabrication, complying with ASTM A123/A123M, Class B2.
      - 1) Hardware: Galvanized, ASTM B633 and Chromium-zinc plated, ASTM F1136.
    - e. Finish: Hot-dip galvanized after fabrication, complying with ASTM A653/A653M, G90 (Z275).
      - 1) Hardware: Galvanized, ASTM B633 and Chromium-zinc plated, ASTM F1136.
    - f. Finish: Electrogalvanized after fabrication, complying with ASTM B633.
      - 1) Hardware: Galvanized, ASTM B633.
    - g. Finish: Powder-coat enamel paint.
      - 1) Powder-Coat Enamel: Cable tray manufacturer's recommended primer and corrosion-inhibiting treatment, with factory-applied powder-coat paint.
    - h. Finish: WHITE for support accessories and miscellaneous hardware

## 2.5 CABLE TRAY ACCESSORIES

- A. Fittings: Tees, crosses, risers, elbows, and other fittings as indicated, of same materials and finishes as cable tray. Color: WHITE.
- B. Barrier Strips: Same materials and finishes as for cable tray.
- C. Cable tray supports and connectors, including bonding jumpers, as recommended by cable tray manufacturer.

## 2.6 WARNING SIGNS

- A. Comply with requirements for identification in Section 27 0553 "Identification for Communications Systems."
- B. Lettering: 1-1/2-inch- (40-mm-) high, black letters on yellow background with legend "Warning! Not To Be Used as Walkway, Ladder, or Support for Ladders or Personnel."

### PART 3 - EXECUTION

### 3.1 CABLE TRAY INSTALLATION

- A. Install cable trays according to NEMA FG 1.
- B. Install cable trays as a complete system, including fasteners, hold-down clips, support systems, barrier strips, adjustable horizontal and vertical splice plates, elbows, reducers, tees, crosses, cable dropouts, adapters, covers, and bonding.
- C. Install cable trays so that the tray is accessible for cable installation and all splices are accessible for inspection and adjustment.
- D. Remove burrs and sharp edges from cable trays.
- E. Fasten cable tray supports to building structure.
- F. Design fasteners and supports to carry cable tray, the cables, and a concentrated load of 200 lb (90 kg). Comply with requirements in Section 270529 "Hangers and Supports for Communications Systems.
- G. Place supports so that spans do not exceed maximum spans on schedules and provide clearances shown on Drawings. Install intermediate supports when cable weight exceeds the load-carrying capacity of the tray rungs.
- H. Construct supports from channel members, threaded rods, and other appurtenances furnished by cable tray manufacturer. Arrange supports in trapeze or wall-bracket form as required by application.
- I. Support bus assembly to prevent twisting from eccentric loading.
- J. Install center-hung supports for single-rail trays designed for 60 versus 40 percent eccentric loading condition, with a safety factor of 3.
- K. Locate and install supports according to NEMA FG 1. Do not install more than one cable tray splice between supports.
- L. Support wire-basket cable trays with center support hangers or trapeze hangers and wall brackets.
- M. Support center support hangers and trapeze hangers for wire-basket trays with 3/8-inch- (10-mm-) diameter rods.
- N. Make connections to equipment with flanged fittings fastened to cable trays and to equipment. Support cable trays independent of fittings. Do not carry weight of cable trays on equipment enclosure.

- O. Make changes in direction and elevation using manufacturer's recommended fittings.
- P. Make cable tray connections using manufacturer's recommended fittings.
- Q. Seal penetrations through fire and smoke barriers. Comply with requirements in Section 07 8413 "Penetration Firestopping."
- R. Install capped metal sleeves for future cables through firestop-sealed cable tray penetrations of fire and smoke barriers.
- S. Install cable trays with enough workspace to permit access for installing cables.
- T. Install warning signs in visible locations on or near cable trays after cable tray installation.

## 3.2 CABLE TRAY GROUNDING

- A. Ground cable trays according to NFPA 70 unless additional grounding is specified. Comply with requirements in Section 27 0526 "Grounding and Bonding for Communications Systems."
- B. Cable trays shall be bonded together with splice plates listed for grounding purposes or with listed bonding jumpers.
- C. When using epoxy- or powder-coat painted cable trays as a grounding conductor, completely remove coating at all splice contact points or ground connector attachment. After completing splice-to-grounding bolt attachment, repair the coated surfaces with coating materials recommended by cable tray manufacturer.
- D. Bond cable trays to power source for cables contained within with bonding conductors sized according to NFPA 70, Article 250.122, "Size of Equipment Grounding Conductors."

## 3.3 CABLE INSTALLATION

- A. Install cables only when each cable tray run has been completed and inspected.
- B. Fasten cables on horizontal runs with cable clamps or cable ties according to NEMA VE 2. Tighten clamps only enough to secure the cable, without indenting the cable jacket. Install cable ties with a tool that includes an automatic pressure-limiting device.
- C. Fasten cables on vertical runs to cable trays every 18 inches (450 mm).
- D. Fasten and support cables that pass from one cable tray to another or drop from cable trays to equipment enclosures. Fasten cables to the cable tray at the point of exit and support cables independent of the enclosure. The cable length between cable trays or between cable tray and enclosure shall be no more than 72 inches (1800 mm).
- E. Tie MI cables down every 36 inches (900 mm) where required to provide a 2-hour fire rating and every 72 inches (1800 mm) elsewhere.
- F. In existing construction, remove inactive or dead cables from cable trays.

## 3.4 CONNECTIONS

- A. Remove paint from all connection points before making connections. Touch up paint after the connections are completed.
- B. Connect pathways to cable trays according to requirements in NEMA VE 2 and NEMA FG 1.

### 3.5 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
  - 1. After installing cable trays and after electrical circuitry has been energized, survey for compliance with requirements.
  - 2. Visually inspect cable insulation for damage. Correct sharp corners, protuberances in cable trays, vibrations, and thermal expansion and contraction conditions, which may cause or have caused damage.
  - 3. Verify that the number, size, and voltage of cables in cable trays do not exceed that permitted by NFPA 70. Verify that communications or data-processing circuits are separated from power circuits by barriers or are installed in separate cable trays.
  - 4. Verify that there are no intruding items such as pipes, hangers, or other equipment in the cable tray.
  - 5. Remove dust deposits, industrial process materials, trash of any description, and any blockage of tray ventilation.
  - 6. Visually inspect each cable tray joint and each ground connection for mechanical continuity. Check bolted connections between sections for corrosion. Clean and retorque in suspect areas.
  - 7. Check for improperly sized or installed bonding jumpers.
  - 8. Check for missing, incorrect, or damaged bolts, bolt heads, or nuts. When found, replace with specified hardware.
  - 9. Perform visual and mechanical checks for adequacy of cable tray grounding; verify that all takeoff raceways are bonded to cable trays. Test entire cable tray system for continuity. Maximum allowable resistance is 1 ohm.
- B. Prepare test and inspection reports.

### 3.6 **PROTECTION**

- A. Protect installed cable trays and cables.
  - 1. Install temporary protection for cables in open trays to safeguard exposed cables against falling objects or debris during construction. Temporary protection for cables and cable tray can be constructed of wood or metal materials and shall remain in place until the risk of damage is over.
  - 2. Repair damage to galvanized finishes with zinc-rich paint recommended by cable tray manufacturer.
  - 3. Repair damage to paint finishes with matching touchup coating recommended by cable tray manufacturer.

#### END OF SECTION 270536

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# SECTION 27 0553 IDENTIFICATION FOR COMMUNICATIONS SYSTEMS

## PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Labels.
  - 2. Bands and tubes.
  - 3. Underground-line warning tape.
  - 4. Signs.
  - 5. Miscellaneous identification products.

### 1.2 ACTION SUBMITTALS

- A. Product Data:
  - 1. Labels.
  - 2. Bands and tubes.
  - 3. Underground-line warning tape.
  - 4. Signs.
  - 5. Miscellaneous identification products.
- B. Product Data Submittals: For each product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for communications identification products.
- C. Samples: For each type of label and sign to illustrate composition, size, colors, lettering style, mounting provisions, and graphic features of identification products.
- D. Identification Schedule:
  - 1. Outlets: Scaled drawings indicating location and proposed designation.
  - 2. Backbone Cabling: Riser diagram showing each communications room, backbone cable, and proposed backbone cable designation.
  - 3. Racks: Scaled drawings indicating location and proposed designation.
  - 4. Patch Panels: Enlarged scaled drawings showing rack row, number, and proposed designations.

### PART 2 - PRODUCTS

## 2.1 PERFORMANCE REQUIREMENTS

A. Comply with NFPA 70 and TIA 606-B.

- B. Comply with ANSI Z535.4 for safety signs and labels.
- C. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
  - 1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces

### 2.2 COLOR AND LEGEND REQUIREMENTS

- A. Equipment Identification Labels:
  - 1. Black letters on a white field.

### 2.3 LABELS

- A. Vinyl Wraparound Labels: Preprinted, flexible labels laminated with a clear, weather- and chemicalresistant coating and matching wraparound clear adhesive tape for securing label ends.
- B. Self-Adhesive Wraparound Labels: Preprinted, 3-mil- (0.08-mm-) thick, polyester or vinyl flexible labels with acrylic pressure-sensitive adhesive.
  - 1. Self-Lamination: Clear; UV-, weather- and chemical-resistant; self-laminating protective shields over the legend. Labels sized such that the clear shield overlaps the entire printed legend.
  - 2. Marker for Labels:
    - a. Permanent, waterproof black ink marker recommended by tag manufacturer.
    - b. Machine-printed, permanent, waterproof black ink recommended by printer manufacturer.
- Self-Adhesive Labels: Polyester and Vinyl, thermal, transfer-printed, 3-mil- (0.08-mm-) thick, multicolor, weather- and UV-resistant, pressure-sensitive adhesive labels, configured for intended use and location.
  Minimum Nominal Size:
  - a. 1-1/2 by 6 inches (37 by 150 mm) for raceway and conductors.
  - b. 3-1/2 by 5 inches (76 by 127 mm) for equipment.
  - c. As required by authorities having jurisdiction.

### 2.4 BURIAL (OSP) WARNING TAPE

- A. Tape:
  - 1. Recommended by manufacturer for the method of installation and suitable to identify and locate underground communications utility lines.
  - 2. Printing on tape shall be permanent and shall not be damaged by burial operations.
  - 3. Tape material and ink shall be chemically inert and not subject to degradation when exposed to acids, alkalis, and other destructive substances commonly found in soils.
- B. Color and Printing:

- 1. Comply with ANSI Z535.1, ANSI Z535.2, ANSI Z535.3, and ANSI Z535.4.
- 2. Inscriptions for Orange-Colored Tapes: "TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL-FIBER CABLE".
- C. Tag, Nonconducting Polyolefin:
  - 1. Pigmented polyolefin, bright colored, continuous-printed on one side with the inscription of the utility, compounded for direct-burial service.
  - 2. Width: 3 inches (75 mm).
  - 3. Thickness: 4 mils (0.1 mm).
  - 4. Weight: 18.5 lb/1000 sq. ft. (9.0 kg/100 sq. m).
  - 5. Tensile According to ASTM D882: 30 lbf (133.4 N) and 2500 psi (17.2 MPa).
- D. Tag, Nonconducting Multilayer Laminate:
  - 1. Multilayer laminate, consisting of high-density polyethylene scrim coated with pigmented polyolefin; bright colored, continuous-printed on one side with the inscription of the utility, compounded for direct-burial service.
  - 2. Width: 3 inches (75 mm).
  - 3. Thickness: 12 mils (0.3 mm).
  - 4. Weight: 36.1 lb/1000 sq. ft. (17.6 kg/100 sq. m).
  - 5. Tensile According to ASTM D882: 400 lbf (1780 N) and 11,500 psi (79.2 MPa).
- E. Tag, Detectable:
  - 1. Detectable three-layer laminate, consisting of a printed pigmented polyolefin film, a solid aluminum-foil core, and a clear protective film that allows inspection of the continuity of the conductive core; bright colored, continuous-printed on one side with the inscription of the utility, compounded for direct-burial service.
  - 2. Width: 3 inches (75 mm).
  - 3. Overall Thickness: 5 mils (0.125 mm).
  - 4. Foil Core Thickness: 0.35 mil (0.00889 mm).
  - 5. Weight: 28 lb/1000 sq. ft. (13.7 kg/100 sq. m).
  - 6. Tensile According to ASTM D882: 70 lbf (311.3 N) and 4600 psi (31.7 MPa).
- F. Tag, Detectable, Reinforced:
  - 1. Reinforced, detectable three-layer laminate, consisting of a printed pigmented woven scrim, a solid aluminum-foil core, and a clear protective film that allows inspection of the continuity of the conductive core; bright-colored, continuous-printed on one side with the inscription of the utility compounded for direct-burial service.
  - 2. Width: 3 inches (75 mm).
  - 3. Overall Thickness: 8 mils (0.2 mm).
  - 4. Foil Core Thickness: 0.35 mil (0.00889 mm).
  - 5. Weight: 34 lb/1000 sq. ft. (16.6 kg/100 sq. m).
  - 6. Tensile According to ASTM D882: 300 lbf (1334 N) and 12,500 psi (86.1 MPa).

# 2.5 SIGNS

- A. Baked-Enamel Signs:
  - 1. Preprinted aluminum signs, high-intensity reflective, punched or drilled for fasteners, with colors, legend, and size required for application.

- 2. 1/4-inch (6.4-mm) grommets in corners for mounting.
- 3. Nominal Size: 7 by 10 inches (180 by 250 mm).
- B. Metal-Backed Butyrate Signs:
  - 1. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs, with 0.0396-inch (1mm) galvanized-steel backing, punched and drilled for fasteners, and with colors, legend, and size required for application.
  - 2. 1/4-inch (6.4-mm) grommets in corners for mounting.
  - 3. Nominal Size: 10 by 14 inches (250 by 360 mm).
- C. Laminated-Acrylic or Melamine-Plastic Signs:
  - 1. Engraved Legend: With black letters on white face.
  - 2. Thickness:
    - a. For signs up to 20 sq. in. (129 sq. cm), minimum 1/16 inch (1.6 mm) thick.
    - b. For signs larger than 20 sq. in. (129 sq. cm), 1/8 inch (3.2 mm) thick.
  - 3. Attachment: Punched or drilled for mechanical fasteners with 1/4-inch (6.4-mm) grommets in corners for mounting.
  - 4. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

### 2.6 MISCELLANEOUS IDENTIFICATION PRODUCTS

- A. Paint: Comply with requirements in painting Sections for paint materials and application requirements. Retain paint system applicable for surface material and location (exterior or interior).
- B. Fasteners for Labels and Signs: Self-tapping, stainless steel screws or stainless-steel machine screws with nuts and flat and lock washers.

## PART 3 - EXECUTION

### 3.1 PREPARATION

A. Self-Adhesive Identification Products: Before applying communications identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.

### 3.2 INSTALLATION

- A. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.
- B. Install identifying devices before installing acoustical ceilings and similar concealment.
- C. Verify identity of each item before installing identification products.
- D. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.

- E. Apply identification devices to surfaces that require finish after completing finish work.
- F. Install signs with approved legend to facilitate proper identification, operation, and maintenance of communications systems and connected items.
- G. Elevated Components: Increase sizes of labels, signs, and letters to those appropriate for viewing from the floor.
- H. Vinyl Wraparound Labels:
  - 1. Secure tight to surface of raceway or cable at a location with high visibility and accessibility.
  - 2. Attach labels that are not self-adhesive type with clear vinyl tape, with adhesive appropriate to the location and substrate.
  - 3. Provide label 6 inches (150 mm) from cable end.
- I. Snap-Around Labels:
  - 1. Secure tight to surface at a location with high visibility and accessibility.
  - 2. Provide label 6 inches (150 mm) from cable end.
- J. Self-Adhesive Wraparound Labels:
  - 1. Secure tight to surface at a location with high visibility and accessibility.
  - 2. Provide label 6 inches (150 mm) from cable end.
- K. Self-Adhesive Labels:
  - 1. On each item, install unique designation label that is consistent with wiring diagrams, schedules, and operation and maintenance manual.
  - Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm) high letters on 1-1/2-inch- (38-mm) high label; where two lines of text are required, use labels 2 inches (50 mm) high.
- L. Snap-Around, Color-Coding Bands: Secure tight to surface at a location with high visibility and accessibility.
- M. Underground-Line Warning Tape:
  - 1. During backfilling of trenches, install continuous underground-line warning tape directly above cable or raceway at 6 to 8 inches (150 to 200 mm) below finished grade. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches (400 mm) overall.
  - 2. Install underground-line warning tape for direct-buried cables and cables in raceways.

## 3.3 IDENTIFICATION SCHEDULE

- A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.
- B. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations with high visibility. Identify by system and circuit designation.

- C. Accessible Fittings for Raceways and Cables within Buildings: Identify covers of each junction and pull box with self-adhesive labels containing wiring system legend.
  - 1. System legends shall be as follows:
    - a. Telecommunications.
- D. Faceplates: Label individual faceplates with self-adhesive labels. Place label at top of faceplate. Each faceplate shall be labeled with its individual, sequential designation, composed of the following, in the order listed:
  - 1. Wiring closet designation.
  - 2. Colon.
  - 3. Faceplate number.
- E. Equipment Room Labeling:
  - 1. Racks, Frames, and Enclosures: Identify front and rear of each with self-adhesive labels containing equipment designation.
  - 2. Patch Panels: Label individual rows in each rack, starting at top and working down, with selfadhesive labels. Label individual rows and outlets, starting at to left and working down, with selfadhesive labels.
  - 3. Data Outlets: Label each outlet with a self-adhesive label indicating the following, in the order listed:
    - a. Room number being served.
    - b. Colon.
    - c. Faceplate number.
- F. Backbone Cables: Label each cable with a [vinyl-wraparound label] [snap-around label] [self-adhesive wraparound label] indicating the location of the far or other end of the backbone cable. Patch panel or punch down block where cable is terminated should be labeled identically.
- G. Horizontal Cables: Label each cable with a self-adhesive wraparound label indicating the following, in the order listed:
  - 1. Room number.
  - 2. Colon.
  - 3. Faceplate number.
- H. Locations of Underground Lines: Underground-line warning tape for copper, coaxial, hybrid copper/fiber, and optical-fiber cable.
- I. Instructional Signs: Self-adhesive labels.
- J. Warning Labels for Indoor Cabinets, Boxes, and Enclosures: [Self-adhesive labels] [Baked-enamel warning signs] [Metal-backed, butyrate warning signs].
  - 1. Apply to exterior of door, cover, or other access.

- K. Equipment Identification Labels:
  - 1. Indoor Equipment: Self-adhesive label, Baked-enamel signs, Metal-backed butyrate signs, Laminated-acrylic or melamine-plastic sign.
  - 2. Equipment to Be Labeled:
    - a. Communications cabinets.
    - b. Uninterruptible power supplies.
    - c. Computer room air conditioners.
    - d. Fire-alarm and suppression equipment.
    - e. Egress points.
    - f. Power distribution components.

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END OF SECTION 270553

## SECTION 27 1100 COMMUNICATIONS EQUIPMENT ROOM FITTINGS

### PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Backboards.
  - 2. Boxes, enclosures, and cabinets.
  - 3. Power strips.
- B. Related Requirements:
  - 1. Section 270536 "Cable Trays for Communications Systems" for cable trays and accessories.
  - 2. Section 271513 "Communications Copper Horizontal Cabling" for copper data cabling associated with system panels and devices.

### 1.3 DEFINITIONS

- A. Access Provider: An operator that provides a circuit path or facility between the service provider and user. An access provider can also be a service provider.
- B. BICSI: Building Industry Consulting Service International.
- C. RCDD: Registered communications distribution designer.
- D. Service Provider: The operator of a telecommunications transmission service delivered through access provider facilities.
- E. TGB: Telecommunications grounding bus bar.
- F. TMGB: Telecommunications main grounding bus bar.

### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for equipment racks and cabinets.
  - 2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

- B. Shop Drawings: For communications equipment room fittings. Include plans, elevations, sections, details, and attachments to other work.
  - 1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
  - 2. Equipment Racks and Cabinets: Include workspace requirements and access for cable connections.
  - 3. Grounding: Indicate location of grounding bus bar and its mounting detail showing standoff insulators and wall mounting brackets.

# 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer, qualified layout technician, installation supervisor, and field inspector.
- B. Seismic Qualification Data: Certificates, from manufacturer.
  - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
  - 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions. Base certification on the maximum number of components capable of being mounted in each rack type. Identify components on which certification is based.
  - 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

### 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Cabling installer must have personnel certified by BICSI on staff.
  - 1. Layout Responsibility: Preparation of Shop Drawings shall be under direct supervision of RCDD.
  - 2. Installation Supervision: Installation shall be under direct supervision of Technician Installer 2, Copper or Fiber, who shall be present at all times when Work of this Section is performed at Project site.
  - 3. Field Inspector: Currently registered by BICSI as RCDD to perform the on-site inspection.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Equipment shall withstand the effects of earthquake motions determined according to ASCE/SEI7, Telcordia GR-63-CORE requirements for Zone 4 Seismic Earthquake Environments.
  - 1. The term "withstand" means "the unit will remain in place without separation of any parts when subjected to the specified seismic forces and the unit will be fully operational after the seismic event."

### 2.2 BACKBOARDS

- A. Backboards: Plywood, fire-retardant treated, 3/4 inch by 48 by 96 inches (19 by 1220 by 2440 mm). Install with long dimension in the vertical orientation.
- B. Backboard Paint: Light-colored fire-retardant paint. Leave a minimum of two fire-rated stampings visible on each backboard in a readily inspectable location.

### 2.3 BOXES, ENCLOSURES AND CABINETS

- A. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets shall be listed and labeled for intended location and use.
- B. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.
- C. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, Type FD, ferrous alloy and aluminum], with gasketed cover.
- D. Nonmetallic Outlet and Device Boxes: Comply with NEMA OS 2 and UL 514C.
- E. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- F. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, cast aluminum and galvanized cast iron with gasketed cover.
- G. Box extensions used to accommodate new building finishes shall be of same material as recessed box.
- H. Device Box Dimensions: 4 inches square by 2-1/8 inches deep (100 mm square by 60 mm deep), 4 inches by 2-1/8 inches by 2-1/8 inches deep (100 mm by 60 mm by 60 mm deep).
- I. Hinged-Cover Enclosures: Comply with UL 50 and NEMA 250, Type 1, Type 3R, Type 4 Type 12 with continuous-hinge cover with flush latch unless otherwise indicated.
  - 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
  - 2. Nonmetallic Enclosures: Plastic and Fiberglass.
  - 3. Interior Panels: Steel; all sides finished with manufacturer's standard enamel.

## 2.4 POWER STRIPS

- A. Comply with requirements in Section 27 1116 "Communications Racks, Frames, and Enclosures."
- B. Power Strips: Comply with UL 1363.
  - 1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
  - 2. Rack mounting, with integral flanges.
  - 3. Height: 1 RU.
  - 4. Housing: Metal
  - 5. Six, 15-A, 120-V ac, NEMA WD 6, receptacles.
  - 6. Rear-facing receptacles.
  - 7. LED indicator lights for power and protection status.

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- 8. LED indicator lights for reverse polarity and open outlet ground.
- 9. Circuit Breaker and Thermal Fusing:
  - a. When protection is lost, circuit opens and cannot be reset.
  - b. Unit continues to supply power if protection is lost.
- 10. Cord connected with 9-foot line cord.
- 11. Rocker-type, on-off switch, illuminated when in the on position.
- 12. Surge Protection: UL 1449, Type 3.
  - a. Maximum Surge Current, Line to Neutral: 27 kA
  - b. Protection modes shall be line to neutral, line to ground, and neutral to ground.
  - c. UL 1449 Voltage Protection Rating for line to neutral and line to ground shall be 600 V for neutral to ground.

### PART 3 - EXECUTION

### 3.1 ENTRANCE FACILITIES

- A. Contact telecommunications service provider and arrange for installation of demarcation point, protected entrance terminals, and a housing when so directed by service provider.
- B. Comply with requirements in Section 27 0528 "Pathways for Communications Systems" for materials and installation requirements for underground, buried and aerial pathways.

### 3.2 INSTALLATION

- A. Comply with NECA 1.
- B. Comply with BICSI's "Telecommunications Distribution Methods Manual" for layout of communications equipment spaces.
- C. Comply with BICSI's "Information Technology Systems Installation Methods Manual" for installation of equipment in communications equipment spaces.
- D. Bundle, lace, and train conductors and cables to terminal points without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.
- E. Coordinate layout and installation of communications equipment in tracks and in room. Coordinate service entrance configuration with service provider.
  - 1. Meet jointly with systems providers, equipment suppliers, and Owner to exchange information and agree on details of equipment configurations and installation interfaces.
  - 2. Record agreements reached in meetings and distribute them to other participants.
  - 3. Adjust configurations and locations of distribution frames, cross-connects, and patch panels in equipment rooms to accommodate and optimize configurations and space requirements of communications equipment.
  - 4. Adjust configurations and locations of equipment with distribution frames, cross-connects, and patch panels of cabling systems of other communications, electronic safety and security, and related systems that share space in equipment room.

F. Coordinate location of power raceways and receptacles with locations of communications equipment requiring electrical power to operate.

# G. Backboards:

- 1. Install from 6 inches (150 mm) to 8 feet, 6 inches (2588 mm) above finished floor. If plywood is fire rated, ensure that fire-rating stamp is visible after installation.
- 2. Paint all sides of backboard with two coats of paint **leaving fire rating stamp visible** in a reasonably conspicuous location.
- 3. Comply with requirements for backboard installation in BICSI's "Information Technology Systems Installation Methods Manual" and TIA-569-D.

## 3.3 SLEEVE AND SLEEVE SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 27 0544 "Sleeves and Sleeve Seals for Communications Pathways and Cabling."

## 3.4 FIRESTOPPING

- A. Comply with requirements in Section 07 8413 "Penetration Firestopping."
- B. Comply with TIA-569-D, Annex A, "Firestopping."
- C. Comply with BICSI's "Information Technology Systems Installation Methods Manual," "Firestopping Practices".

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END OF SECTION 27 1100

# SECTION 27 1116 COMMUNICATIONS RACKS, FRAMES AND ENCLOSURES

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

### 1.2 SUMMARY

- A. Section Includes:
  - 1. 19-inch freestanding equipment cabinets.
  - 2. Enclosed equipment cabinets.
  - 3. Power strips.
  - 4. Grounding.
  - 5. Labeling.
- B. All racks and wire management shall be WHITE in color.
- C. Related Requirements:
  - 1. Section 271100 "Communications Equipment Room Fittings" for backboards and accessories.
  - 2. Section 270526 "Grounding and Bonding for Telecommunications Equipment" for TMGBs and TGBs.
  - 3. Section 270536 "Cable Trays for Communications Systems" for cable trays and cable tray accessories.
  - 4. Section 271513 "Communications Copper Horizontal Cabling" for copper data cabling associated with system panels and devices.

### 1.3 DEFINITIONS

- A. Access Provider: An operator that provides a circuit path or facility between the service provider and user. An access provider can also be a service provider.
- B. BICSI: Building Industry Consulting Service International.
- C. LAN: Local area network.
- D. RCDD: Registered Communications Distribution Designer.
- E. Service Provider: The operator of a telecommunications transmission service delivered through access provider facilities.
- F. TGB: Telecommunications grounding bus bar, typical within racks and cabinets.
- G. TMGB: Telecom main grounding bus bar, typically wall-mounted within MDF/ER and IDF/TR spaces.

### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for equipment racks and cabinets.
  - 2. Include rated capacities, operating characteristics, electrical characteristics, certifications, standards compliance, and furnished specialties and accessories.
- B. Shop Drawings: For communications racks, frames, and enclosures. Include plans, elevations, sections, details, and attachments to other work.
  - 1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
  - 2. Equipment Racks and Cabinets: Include workspace requirements and access for cable connections.
  - 3. Grounding: Indicate location of TGB and its mounting detail showing standoff insulators and wallmounting brackets.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer, qualified layout technician, installation supervisor, and field inspector.
- B. Seismic Qualification Data: Certificates, from manufacturer.
  - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
  - 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions. Base certification on the maximum number of components capable of being mounted in each rack type. Identify components on which certification is based.
  - 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

### 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Cabling installer must have personnel certified by BICSI on staff.
  - 1. Layout Responsibility: Preparation of Shop Drawings shall be under direct supervision of RCDD.
  - 2. Installation Supervision: Installation shall be under direct supervision of Technician or Installer 2, Copper or Fiber, who shall be present at all times when Work of this Section is performed at Project site.
  - 3. Field Inspector: Currently registered by BICSI as RCDD to perform on-site inspection.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Equipment shall withstand the effects of earthquake motions determined according to ASCE/SEI7, Telcordia GR-63-CORE requirements for Zone 4 Seismic Earthquake Environments.
  - 1. The term "withstand" means "the unit will remain in place without separation of any parts when subjected to the specified seismic forces and the unit will be fully operational after the seismic event."
- B. UL listed.
- C. RoHS compliant.
- D. Compliant with requirements of the Payment Card Industry Data Security Standard.

#### 2.2 19-INCH EQUIPMENT RACKS

- A. Description: Two and four- post racks with threaded rails designed for mounting telecommunications equipment. Width is compatible with EIA/ECIA 310-E, 19-inch (482.6-mm) equipment mounting with an opening of 17.72-inches (450-mm) between rails.
- B. Provide as indicated on drawings.
- C. Basis of Design: Chatworth
  - 1. Hoffman
  - 2. Panduit
  - 3. Middle Atlantic (Legrand)
- D. General Requirements:
  - 1. Frames: Modular units designed for telecommunications terminal support and coordinated with dimensions of units to be supported.
  - 2. Material: Extruded steel and Extruded aluminum.
  - 3. Finish: Manufacturer's standard, baked-polyester powder coat.
  - 4. Color: WHITE
- E. Floor-Mounted Racks:
  - 1. Overall Height: 84 inches (2133.6 mm).
  - 2. Overall Depth 4-Post: Adjustable from 29 inches (736.6 mm) 42 inches (1,067 mm).
  - 3. Upright Channel Depth: 6 inches (152.4 mm).
  - 4. Two-Post Load Rating: 500 lb (181 kg).
  - 5. Four-Post Load Rating: 2000 lb (907 kg).
  - 6. Number of Rack Units per Rack: 45.
    - a. Numbering: Every rack unit on upright channels of rack.

- 7. Threads: M6 Cage, 10-32 or 12-24.
- 8. Vertical and horizontal cable management channels, top/bottom cable troughs & grounding lug.
- 9. Base shall have a minimum of four mounting holes for permanent attachment to floor.
- 10. Top shall have provisions for attaching to cable tray/ladder racking.
- 11. Color: WHITE
- F. Cable Management:
  - 1. Metal or metal and plastic, with integral wire retaining fingers.
  - 2. Baked-polyester powder coat finish.
  - 3. Vertical cable management panels shall have front and rear channels, with covers.
  - 4. Double-sided with covers.
  - 5. Minimum 6-in deep and 6-in wide for each front and rear section.
  - 6. Provide horizontal crossover cable manager at the top of each relay rack, with a minimum height of two rack units each.
  - 7. Color: WHITE

## 2.3 19-INCH EQUIPMENT CABINETS

- A. Description: Manufacturer-assembled four-post frame enclosed by side and top panels and front and rear doors, designed for mounting telecommunications equipment. Width is compatible with EIA/ECIA 310-E, 19-inch (482.6-mm) equipment mounting with an opening of 17.72 inches (450 mm) between rails.
- B. Provide as indicated on drawings.
- C. Basis of Design: Chatsworth
  - 1. Hoffman
  - 2. Panduit
  - 3. Middle Atlantic (Legrand)
- D. General Cabinet Requirements:
  - 1. Modular units designed for telecommunications terminal support and coordinated with dimensions of units to be supported.
  - 2. Material: Extruded steel, Extruded aluminum and Sheet steel.
  - 3. Finish: Manufacturer's standard, baked-polyester powder coat.
  - 4. Color: WHITE
- E. Modular Freestanding Cabinets:
  - 1. Overall Height: 84 inches (2133.6 mm).
  - 2. Overall Depth: 36 inches (914.4 mm).
  - 3. Load Rating: 3000 lb (1362 kg).
  - 4. Number of Rack Units: 45.
    - a. Numbering: Every rack unit, on interior of rack.
  - 5. Threads: 10-32 or 12-24.
  - 6. Removable and lockable side and top panels.
  - 7. Hinged and lockable front and rear doors.
  - 8. Full perforated split (barn style) rear doors.
  - 9. Full perforated front door.

- 10. Adjustable feet for leveling.
- 11. Screened ventilation openings in roof.
- 12. Cable access provisions in roof and base.
- 13. All cabinets keyed alike.
- 14. Color: WHITE
- F. Cable Management:
  - 1. Metal, with integral wire retaining fingers.
  - 2. Baked-polyester powder coat finish.
  - 3. Vertical cable management panels shall have front and rear channels, with covers. Double-sided with covers.
  - 4. Minimum 6-in deep and 6-in wide for each front and rear section.
  - 5. Provide horizontal crossover cable manager at top of each relay rack, with a minimum height of two rack units each.
  - 6. Color: WHITE

### 2.4 GROUNDING

- A. Comply with requirements in Section 270526 "Grounding and Bonding for Communications Systems" for grounding conductors and connectors.
- B. Basis of design: Erico
  - 1. Harger
  - 2. Panduit
  - 3. Approved equivalent
- C. Rack and Cabinet TGBs: Rectangular bars of hard-drawn solid copper, accepting conductors ranging from No. 14 to No. 2/0 AWG, NRTL listed as complying with UL 467, and complying with TIA-606-B. Predrilling shall be with holes for use with lugs specified in this Section.
  - 1. Cabinet-Mounted TGB: Terminal block, with stainless-steel or copper-plated hardware for attachment to cabinet.
  - 2. Rack-Mounted Horizontal TGB: Designed for mounting in 19-inch (482.6 mm) equipment racks. Include a copper splice bar for transitioning to an adjoining rack, and stainless-steel or copperplated hardware for attachment to the rack.

### 2.5 LABELING

A. Comply with TIA-606-B and UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

A. Comply with NECA 1.

- B. Comply with BICSI TDMM for layout and installation of communications equipment spaces.
- C. Bundle, lace, and train conductors and cables to terminal points without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.
- D. Coordinate layout and installation of communications equipment in racks and room. Coordinate service entrance configuration with service provider.
  - 1. Meet jointly with system providers, equipment suppliers, and Owner to exchange information and agree on details of equipment configurations and installation interfaces.
  - 2. Record agreements reached in meetings and distribute them to other participants.
  - 3. Adjust configurations and locations of distribution frames, cross-connects, and patch panels in equipment spaces to accommodate and optimize configuration and space requirements of telecommunications equipment.
  - 4. Adjust configurations and locations of equipment with distribution frames, cross-connects, and patch panels of cabling systems of other communications, electronic safety and security, and related systems that share space in equipment room.
- E. Coordinate location of power raceways and receptacles with locations of communications equipment requiring electrical power to operate.

## 3.2 GROUNDING

- A. Comply with NECA/BICSI 607.
- B. Install grounding according to BICSI ITSIMM, "Bonding, Grounding (Earthing) and Electrical Protection".
- C. Connect TGB with a minimum No. 4 AWG grounding electrode conductor from TGB to suitable electrical building ground. Connect rack TGB to the TMGB.

### 3.3 IDENTIFICATION

- A. Coordinate system components, wiring, and cabling complying with TIA-606-B. Comply with requirements in Section 270553 "Identification for Electrical Systems."
- B. For fire-resistant plywood, do not paint over manufacturer's label.
- C. Paint and label colors for equipment identification shall comply with TIA-606-B.
- D. Labels shall be machine-generated and adhesive. Type shall be no smaller than 1/8 inch in height.

### END OF SECTION 27 1116

#### SECTION 27 1500

#### STRUCTURED CABLING

#### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes but is not limited to:
  - 1. Category 6 unshielded, twisted pair cable for general Voice and Data connectivity.
  - 2. Category 6A unshielded, twisted pair cable for Wireless Access Point (WAP) and Video Surveillance Camera connectivity.
  - 3. Category 6A shielded, twisted pair cable for Audiovisual device connectivity.
  - 4. Cat6 and 6A twisted pair cable termination hardware.
  - 5. Horizontal/Vertical cable management.
  - 6. Fiber optic cable for backbone connectivity.
  - 7. Fiber optic termination hardware.
  - 8. Identification products.

### 1.2 DEFINITIONS

- A. Cross-Connect: A facility enabling the termination of cable elements and their interconnection or crossconnection.
- B. EMI: Electromagnetic interference.
- C. FTP: Shielded twisted pair.
- D. F/FTP: Overall foil screened cable with foil screened twisted pair.
- E. F/UTP: Overall foil screened cable with unscreened twisted pair.
- F. IDC: Insulation displacement connector.
- G. Jack: Also commonly called an "outlet," it is the fixed, female connector.
- H. LAN: Local area network.
- I. Plug: Also commonly called a "connector," it is the removable, male telecommunications connector.
- J. RCDD: Registered Communications Distribution Designer.
- K. Screen: A metallic layer, either a foil or braid, placed around a pair or group of conductors.
- L. Shield: A metallic layer, either a foil or braid, placed around a pair or group of conductors.
- M. S/FTP: Overall braid screened cable with foil screened twisted pair.
- N. S/UTP: Overall braid screened cable with unscreened twisted pairs.

O. UTP: Unscreened (unshielded) twisted pair.

## 1.3 COPPER HORIZONTAL CABLING DESCRIPTION

- A. Horizontal cable cabling system shall provide interconnections between Distributor A, Distributor B, or Distributor C, and the equipment outlet, otherwise known as "Cabling Subsystem 1," in the telecommunications cabling system structure. Cabling system consists of horizontal cables, intermediate and main cross-connects, mechanical terminations, and patch cords or jumpers used for horizontal-to-horizontal cross-connection.
  - 1. Bridged taps and splices shall not be installed in the horizontal cabling.
- B. The maximum allowable horizontal cable length is 295 feet (90 m). This maximum allowable length does not include an allowance for the length of 16 feet (4.9 m) to the workstation equipment or in the horizontal cross-connect.
- C. System cable color-coding shall be as follows for this project:
  - 1. General Voice/Data Blue Cat6 UTP
  - 2. TV Outlets (non-AV) Blue Cat6 UTP
  - 3. WAPs White Cat6A UTP
  - 4. Video Surveillance Green Cat6A
  - 5. Access Control Yellow Cat6 UTP
  - 6. AV Signal Extension Violet/Purple Cat6A Shielded
  - 7. Audio Speaker Gray 18/2
  - 8. Microphone Gray or Black 22/2 w/shield
- D. Contractor shall furnish, install, terminate, test, label and warranty a turnkey, structured cabling system from one of the following manufacturers:
  - 1. Belden
  - 2. Commscope
  - 3. Hubbell-Premise Wiring
  - 4. Leviton
  - 5. Ortronics (Legrand)
  - 6. Panduit

### 1.4 ACTION SUBMITTALS

- A. Product Data:
  - 1. Category 6 twisted pair cable.
  - 2. Category 6A twisted pair cable.
  - 3. Twisted pair cable hardware.
  - 4. Cable management system.
  - 5. Fiber optic cable and hardware.
  - 6. Identification products.
- B. Shop Drawings: Reviewed and stamped by RCDD.
  - 1. System Labeling Schedules:
    - a. Electronic copy of labeling schedules, in software and format selected by Owner.

- b. Electronic copy of labeling schedules that are part of cabling and asset identification system of software.
- 2. Cabling administration Drawings and printouts.
- 3. Wiring diagrams and installation details of telecommunications equipment, to show location and layout of telecommunications equipment, including the following:
  - a. Telecommunications rooms plans and elevations.
  - b. Telecommunications pathways.
  - c. Telecommunications system access points.
  - d. Telecommunications grounding system.
  - e. Telecommunications conductor drop locations.
  - f. Typical telecommunications details.
  - g. Mechanical, electrical, and plumbing systems.
- C. Twisted pair cable testing plan.
- D. Samples: For telecommunications jacks and plugs, in specified finish, one for each type and configuration and cover plates for color selection and evaluation of technical features if requested by Owner or Architect.
- E. Field Quality-Control Submittals:
  - 1. Field quality-control reports.

### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For RCDD, Installer, installation supervisor, and field inspector.
- B. Product Certificates: For each type of product.
- C. Source quality-control reports.

## 1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For splices and connectors to include in maintenance manuals.
- B. Software and Firmware Operational Documentation:
  - 1. Software operating and upgrade manuals.
  - 2. Program Software Backup: On USB media or compact disk, complete with data files.
  - 3. Device address list.
  - 4. Printout of software application and graphic screens.

### 1.7 QUALITY ASSURANCE

A. Installer Qualifications: Cabling Installer must have personnel certified by BICSI on staff.

- 1. Layout Responsibility: Preparation of Shop Drawings and cabling administration Drawings, cabling administration Drawings, and field-testing program development by an RCDD.
- 2. Installation Supervision: Installation shall be under the direct supervision of Technician or Level 2 Installer, who shall be present at all times when Work of this Section is performed at Project site.
- 3. Installer shall be authorized by and in good standing with the manufacturer(s) of the cable and connectivity hardware in order to provide extended warranties such as an Applications Assurance Warranty.
- 4. Installer shall maintain a fully staffed sales/service facility within 100 miles of the project site.

## 1.8 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install cables and connecting materials until wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

## 1.9 COORDINATION

A. Coordinate layout and installation of telecommunications pathways and cabling with Owner's telecommunications and LAN equipment and service suppliers.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Horizontal cabling system shall comply with transmission standards in TIA-568-C.1, when tested according to test procedures of this standard.
- B. Telecommunications Pathways and Spaces: Comply with TIA-569-D.
- C. Grounding: Comply with TIA-607-B.

### 2.2 GENERAL CABLE CHARACTERISTICS

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with the applicable standard and NFPA 70 for the following types:
  - 1. Communications, Plenum Rated:
    - a. Type CMP complying with UL 1685.
  - 2. Communications, Non-Plenum Rated:
    - a. Type CMR complying with UL 1666 and ICEA S-103-701.
- B. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings from an applicable testing agency.

- 1. Flame-Spread Index: 25 or less.
- 2. Smoke-Developed Index: 50 or less.
- C. RoHS compliant.

## 2.3 CATEGORY 6 UNSHIELDED, TWISTED PAIR CABLE

- A. Category 6 Twisted Pair Cable: Four-pair, balanced -twisted pair cable certified to meet transmission characteristics of Category 6 cable at frequencies up to 250 MHz.
- B. Basis of Design: Commscope Uniprise
  - 1. Belden
  - 2. Berk-Tek (Leviton)
  - 3. General Cable (Prysmian)
  - 4. Panduit
  - 5. Superior-Essex
- C. Standard: Comply with NEMA WC 66/ICEA S-116-732 and TIA-568-C.2 for Category 6 cables.
- D. Conductors: 100-ohm, 23 AWG solid copper.
- E. Cable Rating: Plenum.

### 2.4 CATEGORY 6A UNSHIELDED, TWISTED PAIR CABLE

- A. Category 6A Twisted Pair Cable: Four-pair, balanced twisted pair cable, with internal spline, certified to meet transmission characteristics of Category 6A cable at frequencies up to 500 MHz.
- B. Basis of Design: Commscope Uniprise
  - 1. Belden
  - 2. Berk-Tek (Leviton)
  - 3. General Cable (Prysmian)
  - 4. Panduit
  - 5. Superior-Essex
- C. Standard: Comply with TIA-568-C.2 for Category 6A cables.
- D. Conductors: 100-ohm, 23 AWG solid copper.
- E. Shielding/Screening: Use Shielded twisted pair (FTP) for audio-visual applications.
- F. Cable Rating: Plenum.

### 2.5 TWISTED PAIR CABLE HARDWARE

- A. Twisted Pair Cable Hardware: Hardware designed to connect and terminate unshielded, twisted pair copper communications cable.
- B. General Requirements for Twisted Pair Cable Hardware:

- 1. Comply with the performance requirements of Category 6 and Category 6A.
- 2. Comply with TIA-568-C.2, IDC type, modular jack inserts designed for punch-down caps and standard 110 punch tools.
- 3. Cables shall be terminated with connecting hardware of same category or higher.
- 4. Universal T568A/T568B wiring labels.
- 5. Factory molded or marked to indicate transmission performance.
- 6. Color: match system cable color(s).
- 7. Provide modular jack inserts at device outlet locations and at patch panels for termination of cabling.
- C. Source Limitations: Obtain twisted pair cable hardware from single source from single manufacturer.
- D. Patch Panel: Modular panel frames housing 24 and 48 pre-numbered jack openings with integrated cable management at rear of panel frame. Accommodates Cat6 and 6A modular jack inserts.
  - 1. Features:
    - a. 24 or 48 ports.
    - b. 1U and 2U
    - c. Color: WHITE
  - 2. Construction: 16-gauge steel and mountable on 19-inch (483 mm) equipment racks.
  - 3. Number of Jacks per Field: One for each four-pair cable indicated.
  - 4. Provide dedicated patch panels for each system and designated cable color scheme.
- E. Patch Cords: Factory assembled and tested Cat6 and Cat6A, four-pair cable assemblies available in 1-ft, 3-ft, 5-ft, 7-ft, and 10-ft lengths; terminated with an eight-position modular plug at each end.
  - 1. Patch cords shall have bend-relief-compliant boots and color-coded icons to ensure performance. Patch cords shall have latch guards to protect against snagging.
  - 2. Color: Match system cable colors.
  - 3. Provide patch cords from the same manufacturer as termination hardware for warranty purposes.
- F. Plugs and Plug Assemblies:
  - 1. Male; eight position; color-coded modular telecommunications connector plug designed for termination of a single four-pair, 100-ohm, unshielded or shielded twisted pair cable.
  - 2. Field-terminated with a ratchet-style crimping tool.
  - 3. Standard: Comply with TIA-568-C.2.
- G. Flush Mounted Wall Plate:
  - 1. 2, 4 and 6-port, vertical single gang cover plates designed to mount to single gang wall boxes.
  - 2. 2, 3,4 and 6-port, single gang decora type adapter plate designed to mount in floor boxes.
  - 3. Plastic Cover Plate: High-impact plastic. Coordinate color with Division 26.
  - 4. Metal Cover Plate: Stainless steel, complying with requirements in Division 26.
  - 5. For use with snap-in modular jack inserts accommodating any combination of twisted pair, optical fiber, and coaxial work area cords.
  - 6. Integral labeling windows top and bottom with clear, snap in label covers.

## 2.6 FIBER OPTIC CABLE

- A. 24-Strand, OS2, single-mode optical fiber cable.
  - 1. Laser-optimized
  - 2. Indoor rated
  - 3. Aluminum interlocking armor with overall plenum-rated jacketing, type OFCP.
  - 4. Color: Yellow
  - 5. Tight buffered construction
  - 6. Sub-units: 2 x 12 fibers each

# 2.7 FIBER OPTIC TERMINATION HARDWARE

- A. 1U and 2U, rack mounted sliding enclosure
  - 1. Accepts LC connector adapter panels
  - 2. Accepts splice trays in rear section
  - 3. Integral wire management at front and within rear section
  - 4. Sliding access cover
  - 5. Fold-down front door panel of acrylic Plexiglas.
  - 6. Integrated labeling fields.
- B. LC coupling panels
  - 1. Single mode OS2
  - 2. 3 x duplex LC and 6 x duplex LC
  - 3. Color: black, blue or beige
- C. LC fiber optic connectors
  - 1. Field-terminated
  - 2. Splice on mechanical or fusion
  - 3. Integral strain relief boot

# 2.8 IDENTIFICATION PRODUCTS

A. Comply with TIA-606-B and UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

# 2.9 SOURCE QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to evaluate cables.
- B. Test twisted pair cables according to TIA-568-C.2.
- C. Cable will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.
- E. Test each Cat6 and Cat6A cable following the <u>**Permanent Link**</u> test setting utilizing a cable certification test set from Fluke, AEM, Softing or approved equivalent.
- F. Test equipment shall be within current factory calibration period when testing project cables. Test reports submitted from an out-of-calibration test set will be rejected. All retesting costs and fees shall be the responsibility of the Contractor.
- G. Provide permanent link test reports (one per cable) for every terminated cable. Provide in electronic format upon project completion.

## PART 3 - EXECUTION

#### 3.1 WIRING METHODS

- A. Routing:
  - 1. Install cables in raceways and cable trays, except within consoles, cabinets, desks, and counters and except in accessible ceiling spaces, attics, and gypsum board partitions where unenclosed wiring method may be used. Conceal raceway and cables, except in unfinished spaces.
    - a. Install plenum cable in environmental air spaces, including plenum ceilings.
    - b. Comply with requirements for raceways and boxes specified in Section 270528 "Pathways for Communications Systems."
  - 2. Conceal conductors and cables in accessible ceilings, walls, and floors where possible.
- B. Wiring within Enclosures: Bundle, lace, and train cables within enclosures. Connect to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools. Install conductors parallel with or at right angles to sides and back of enclosure.

#### 3.2 INSTALLATION OF PATHWAYS

- A. Comply with requirements for demarcation point, cabinets, and racks specified in Section 271100 "Communications Equipment Room Fittings."
- B. Comply with Section 270528 "Pathways for Communications Systems."
- C. Comply with Section 270529 "Hangers and Supports for Communications Systems."
- D. Comply with Section 270536 "Cable Trays for Communications Systems."
- E. Drawings indicate general arrangement of pathways and fittings.

#### 3.3 INSTALLATION OF TWISTED PAIR HORIZONTAL CABLES

- A. Comply with NECA 1 and NECA/BICSI 568.
- B. General Requirements for Cabling:

- 1. Comply with TIA-568-C.0, TIA-568-C.1, and TIA-568-C.2.
- 2. Comply with BICSI's "Information Transport Systems Installation Methods Manual (ITSIMM), Ch. 5, "Copper Structured Cabling Systems," "Cable Termination Practices" Section.
- 3. Install 110-style IDC termination hardware unless otherwise indicated.
- 4. Maintain cable twist up to the point of termination. However, do not untwist twisted pair cables more than 1/2 inch (12 mm) from the point of termination to maintain cable geometry.
- 5. Terminate all conductors; no cable shall contain unterminated elements. Make terminations only at indicated outlets, terminals, cross-connects, and patch panels.
- 6. Cables may not be spliced. Secure and support cables at intervals not exceeding 30 inches (760 mm) and not more than 6 inches (150 mm) from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
- 7. Install lacing bars to restrain cables, prevent straining connections, and prevent bending cables to smaller radii than minimums recommended by manufacturer.
- 8. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI Information Transport Systems Installation Methods Manual, Ch. 5, "Copper Structured Cabling Systems," "Cable Termination Practices" Section. Use lacing bars and distribution spools.
- 9. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
- 10. Cold-Weather Installation: Bring cable to room temperature before de-reeling. Heat lamps shall not be used for heating.
- 11. In the communications equipment/IT/telecom rooms, provide a 10-foot (3m) service loop on each terminated cable.
- 12. Pulling Cable: Comply with BICSI Information Transport Systems Installation Methods Manual, Ch. 5, "Copper Structured Cabling Systems," "Pulling and Installing Cable" Section. Monitor cable pull tensions.
- C. Open-Cable Installation:
  - 1. Install cabling with horizontal and vertical cable guides in telecommunications spaces with terminating hardware and interconnection equipment.
  - 2. Suspend twisted pair cabling, not in a wireway or pathway, a minimum of 8 inches (200 mm) above ceilings by cable supports not more than 60 inches apart.
  - 3. Cable shall not be run through structural members or in contact with pipes, ducts, or other potentially damaging items.
- D. Segregate systems on dedicated patch panels for:
  - 1. General voice/data/TV/clock
  - 2. WAPs
  - 3. Security cameras
  - 4. Audio-visual
- E. Separation from EMI Sources:
  - Comply with recommendations from BICSI's "Telecommunications Distribution Methods Manual" and TIA-569-D for separating unshielded copper communication cable from potential EMI sources, including electrical power lines and equipment.
  - 2. Separation between open communications cables or cables in nonmetallic raceways and unshielded power conductors and electrical equipment shall be as follows:
    - a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 5 inches (127 mm).

- b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 12 inches (300 mm).
- c. Electrical Equipment Rating More Than 5 kVA: A minimum of 24 inches (600 mm).
- 3. Separation between communications cables in grounded metallic raceways and unshielded power lines or electrical equipment shall be as follows:
  - a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 2-1/2 inches (64 mm).
  - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 6 inches (150 mm).
  - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 12 inches (300 mm).
- 4. Separation between communications cables in grounded metallic raceways, power lines, and electrical equipment located in grounded metallic conduits or enclosures shall be as follows:
  - a. Electrical Equipment Rating Less Than 2 kVA: No requirement.
  - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 3 inches (76 mm).
  - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 6 inches (150 mm).
- 5. Separation between Communications Cables and Electrical Motors and Transformers, 5 kVA or HP and Larger: A minimum of 48 inches (1200 mm).
- 6. Separation between Communications Cables and Fluorescent Fixtures: A minimum of 5 inches (127 mm).

## 3.4 FIRESTOPPING

- A. Comply with requirements in Section 078413 "Penetration Firestopping."
- B. Comply with TIA-569-D, Annex A, "Firestopping."
- C. Comply with "Firestopping Systems" Article in BISCI's "Telecommunications Distribution Methods Manual."

#### 3.5 GROUNDING

- A. Comply with requirements in Section 270526 "Grounding and Bonding for Communications Systems" for grounding conductors and connectors.
- B. Install grounding according to the "Grounding, Bonding, and Electrical Protection" chapter in BICSI's "Telecommunications Distribution Methods Manual."
- C. Comply with TIA-607-B and NECA/BICSI-607.
- D. Locate grounding bus bar to minimize the length of bonding conductors. Fasten to wall, allowing at least a 2-inch (50-mm) clearance behind the grounding bus bar. Connect grounding bus bar to suitable electrical building ground, using a minimum No. 4 AWG grounding electrode conductor.
- E. Bond metallic equipment to the grounding bus bar, using not smaller than a No. 6 AWG equipment grounding conductor.

#### 3.6 IDENTIFICATION

- A. Identify system components, wiring, and cabling complying with TIA-606-B. Comply with requirements for identification specified in Section 270553 "Identification for Communications Systems."
  - 1. Administration Class: [Class 1] [Class 2] [Class 3] [Class 4].
  - 2. Color-code cross-connect fields and apply colors to voice and data service backboards, connections, covers, and labels.
- B. Paint and label colors for equipment identification shall comply with TIA-606-B for Class 2, Class 3 and Class 4 level of administration, including optional identification requirements of this standard].
- C. Cable Schedule: Install in a prominent location in each equipment room and wiring closet. List incoming and outgoing cables and their designations, origins, and destinations. Protect with rigid frame and clear plastic cover. Furnish an electronic copy of the final, comprehensive schedules for Project.
- D. Cabling Administration Drawings: Show building floor plans with cabling administration-point labeling. Identify labeling convention and show labels for telecommunications closets, terminal hardware and positions, horizontal cables, work areas and workstation terminal positions, grounding buses and pathways, and equipment grounding conductors.
- E. Cable and Wire Identification:
  - 1. Label each cable within 4 inches (100 mm) of each termination and tap, where it is accessible in a cabinet or junction or outlet box, and elsewhere as indicated.
  - 2. Each wire connected to building-mounted devices is not required to be numbered at the device if wire color is consistent with associated wire connected and numbered within panel or cabinet.
  - 3. Exposed Cables and Cables in Cable Trays and Wire Troughs: Label each cable at intervals not exceeding 15 feet (4.5 m).
  - 4. Label each terminal strip, and screw terminal in each cabinet, rack, or panel.
    - a. Individually number wire conductors connected to terminal strips, and identify each cable or wiring group, extended from a panel or cabinet to a building-mounted device, with the name and number of a particular device.
    - b. Label each unit and field within distribution racks and frames.
  - 5. Identification within Connector Fields in Equipment Rooms and Wiring Closets: Label each connector and each discrete unit of cable-terminating and -connecting hardware. Where similar jacks and plugs are used for both voice and data communication cabling, use a different color for jacks and plugs of each service.
- F. Labels shall be preprinted or computer-printed type, with a printing area and font color that contrast with cable jacket color but still comply with TIA-606-B requirements for the following:
  - 1. Cables use flexible vinyl or polyester that flexes as cables are bent.

#### 3.7 FIELD QUALITY CONTROL

- A. Acceptance Testing Preparation:
- B. Tests and Inspections:

- 1. Visually inspect jacket materials for NRTL certification markings. Inspect cabling terminations in communications equipment rooms for compliance with color-coding for pin assignments and inspect cabling connections for compliance with TIA-568-C.1.
- 2. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.
  - a. Test instruments shall meet or exceed applicable requirements in TIA-568-C.2. Perform tests with a tester that complies with performance requirements in "Test Instruments (Normative)" Annex, complying with measurement accuracy specified in "Measurement Accuracy (Informative)" Annex. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.
- C. Data for each measurement shall be documented. Data for submittals shall be printed in a summary report that is formatted similarly to Table 10.1 in BICSI's "Telecommunications Distribution Methods Manual," or shall be transferred from the instrument to the computer, saved as text files, printed, and submitted.
- D. Nonconforming Work:
  - 1. End-to-end cabling will be considered defective if it does not pass tests and inspections.
  - 2. Remove and replace cabling where test results indicate that they do not comply with specified requirements.
- E. Collect, assemble, and submit test and inspection reports.

## END OF SECTION 271513

#### SECTION 27 41 00 COMMON WORK RESULTS FOR AUDIO/VISUAL SYSTEMS

#### PART 1 - GENERAL

#### 1.1 DESCRIPTION OF WORK

- A. Provide all labor, equipment, supplies, misc. materials, software and licenses for the complete installation of fully functional Audiovisual systems in accordance with the Contract Documents. Audiovisual systems may include but not be limited to:
  - 1. Conference and Training Room Sound Reinforcement System
  - 2. Projection System and screens
  - 3. Video Control, Switching and Distribution System
  - 4. Assistive Listening System
- B. The work includes the following, as well as work not listed below but described elsewhere as it applies to all audiovisual and control systems:
  - 1. Raceway
  - 2. Junction boxes
  - 3. Audio and control cabling
  - 4. Equipment Racks and Cabinets
  - 5. Source and head-end equipment
  - 6. Field devices
  - 7. Surge Protection
  - 8. Power Distribution and Control
  - 9. Fire Stopping
  - 10. Systems Testing
  - 11. Systems Training and Demonstration
  - 12. Documentation and submissions
  - 13. Maintenance and Service
- C. A/V systems are to be bid as follows-
  - 1. All aspects of the audio/visual systems are to be included in the Base Bid.
  - 2. Unless otherwise noted, all Laser Projectors, Large Format LED TV Displays (smart TVs) and TV Display mounts will be Contractor Furnished, Contractor Installed.
- D. Interpretation of Contract Documents
  - 1. This section of the specifications describes general provisions applicable to Division 274100 series systems. See Division 28 for general provisions related to Security Electronics systems.
  - 2. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devises incidental to or necessary for a sound, secure and complete installation.
  - 3. Mention in these specifications or indications and/or reasonable implications whereby articles, materials, operation or methods related to execution of the work are noted, specified, drawn or described, thereby requires execution of each such item of work and provision of all labor, materials, equipment and accessories required for execution thereof.

- 4. No exclusions from, or limitations in, the language used in the specifications shall be interpreted as meaning that the accessories necessary to complete any required system or item of equipment are to be omitted.
- 5. The use of words in the singular shall not be considered as limiting where other indications denote that more than one item is referred to.
- 6. Furnish and install all materials for systems, resulting upon completion, in functioning systems in compliance with performance requirements specified. The omission of express reference to any parts necessary for, or reasonably incidental to, a complete installation shall not be construed as a release from furnishing such parts.
- 7. Drawings are diagrammatic and indicate general arrangement of system and equipment, except when specifically dimensioned or detailed. They are to show size, capacity, approximate location, direction and general relationship of one work phase to another, but not exact detail or arrangement.
- 8. Refer to dimensioned Design/structural drawings for exact, locations of building elements.
- 9. Field verification of measurements takes priority over dimensioned drawings.
- 10. Dimensions indicated anywhere on drawings, are limiting dimensions.
- 11. The Owner/User reserves the right to make any reasonable change in location of devices and equipment prior to rough installation without involving additional expense. All changes from the drawings as are necessary to make the work of the Contractor conform to the building as constructed shall be included and installed without extra cost.

#### 1.2 SCOPE AND RESPONSIBILITY

- A. Provide full-time, on-site field representation for Division 274100 series scope of work for duration of installation and prior to turnover.
- B. Include detailed scheduling information for Audio/Visual System installation and testing in the construction schedule. Provide detailed GANTT chart construction schedule showing all tasks referenced in the project phasing plans. Include:
  - 1. Design
  - 2. Shop drawing preparation
  - 3. Software Programming
  - 4. Shop Fabrication
  - 5. Equipment installation
  - 6. Electrical Work
  - 7. Testing, commissioning, and training.
- C. This schedule must be submitted fourteen (14) calendar days after receipt of contract. The duration of this schedule must also comply with the completion dates of the construction schedule contained in the contract documents.
- D. Provide coordination to ensure rooms housing Audio/Visual equipment are completed, cleaned and have conditioned air as early as possible to facilitate completion of control wiring and terminations. Space shall be free of air-borne particles prior to installation of any Audio/Visual Equipment. The Designer shall inspect and approve the condition of these rooms prior to the installation of any active equipment.

- E. Conduct periodic coordination meetings between Contractors to make everyone aware of critical areas of construction. Distribute the meeting minutes and attendance to the Owner/User's Representative, the Designer and the Owner/User in a timely fashion.
- F. Contractor shall provide coordination of mechanical and electrical installation requirement with the General Contractor and the Electrical Contractor.
- G. Provide coordination of the Audio/Visual system installation.
- H. Provide coordination as required to complete the inspection described in paragraph 3.1 INSPECTION.
- I. Furnish and install a complete conduit raceway system including back boxes, junction boxes, mortar boxes, and pull string for all audio reinforcement and control as called for in the contract documents. The conduit size shall allow for a maximum conductor fill of 40% in accordance with NEC Guidelines.
- J. Inspect conduit raceway system including back boxes, junction boxes, and mortar boxes for all Audio/Visual systems furnished by others. Notify the Designer of any discrepancies immediately.
- K. Provide all custom casework required for housing electronic equipment.
- L. Furnish and install a complete Audio/Visual power cable plant including power, and ground wiring, per NEC, as shown in the Project Documents.
- M. Furnish and install all nonstandard back boxes.
- N. Furnish and install all equipment racks and cabinets.
- O. Furnish all 120-volt AC wiring and connections for power panels and/or terminal strips in electrical panels, cabinets, enclosures, and/or consoles, as indicated in the Contract Documents and approved shop drawings.
- P. Furnish and install all required surge protection field devices.
- Q. Provide all required circuit protection internal to the head end equipment racks.
- R. Furnish and install all devices, equipment, and appurtenances resulting in complete, functional, and fully operational systems as specified herein and indicated on the drawings.
- S. Furnish and install the audio/visual equipment.
- T. Furnish and install a complete Audio/Visual signal cable plant including audio reinforcement and control cable, per NEC, as shown in the project documents.
- U. Furnish and install the miscellaneous systems equipment and materials as required for a complete and fully functional audio/visual system as specified and/or indicated on the drawings.
- V. Prior to fabrication, coordinate exact location and installation of audio/visual devices.
- W. Provide coordination to complete the inspection described in Paragraph 3.1 INSPECTION.

- X. Provide complete system test, operational certification, and Owner/User training as called for in the contract documents.
- Y. Provide complete factory certified training to the Owner/User.
- Z. Coordinate the work of this Section with that of other Sections to ensure that the entire work of this Project will be carried out in an orderly, complete and coordinated fashion.

## 1.3 RELATED DOCUMENTS

- A. General
  - Drawings, specifications and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this section. The Contractor and all subcontractors are responsible for locating information pertaining to required items of work specified or indicated elsewhere in the Contract Documents.
- B. Related Work Specified Elsewhere
  - 1. Division 00 PROCUREMENT AND CONTRACTING REQUIREMENTS
  - 2. Division 01 GENERAL REQUIREMENTS
  - 3. Division 26 ELECTRICAL
- C. Reference Specifications, Materials, and/or Codes
  - 1. Submit all items necessary to obtain all required permits to the appropriate Regulatory Agencies, obtain all required permits and pay all required fees.
  - 2. All work shall conform to the National Electrical Code (NEC) and to applicable National Fire Protection Association (NFPA) codes.
  - 3. All work shall conform to all Federal, State and local ordinances.
  - 4. Where applicable, all fixtures, equipment and materials shall be as approved or listed by the following:
    - a. Factory Mutual Laboratories (FM).
    - b. Underwriters Laboratories, Inc. (UL).
    - c. National Electrical Manufacturers Association (NEMA).
  - 5. References to the National Electrical Code and National Fire Protection Association (NFPA) are a minimum installation requirement standard. Design drawings and specification sections shall govern in those instances where requirements are greater than those specified in the NEC and NFPA.
  - 6. All material and equipment shall be listed, labeled or certified by Underwriters' Laboratories, Inc. where such standards have been established. Equipment and material which are not covered by UL Standard will be accepted provided equipment and material are listed, labeled, certified or otherwise determined to meet safety requirements of a nationally recognized testing laboratory. Equipment of a class, which no nationally recognized testing laboratory accepts, certifies, lists, labels, or determines to be safe will be considered, if inspected or tested in accordance with national industrial standards such as NEMA, ICEA or ANSI. Evidence of compliance shall include

certified test reports and definitive shop drawings. NOTE: It is not required that the final installed system be UL listed as a single product.

- D. All work shall meet or exceed the standards and procedures of the following:
  - 1. National Fire Protection Association (NFPA)
  - 2. National Electrical Code (NEC)
  - 3. American National Standards Institute (ANSI/TIA)
  - 4. National Electrical Manufacturers Association (NEMA)
  - 5. American Society of Testing Materials (ASTM)
  - 6. Institute of Electronic & Electrical Designers (IEEE)
  - 7. Underwriters Laboratory (UL)
  - 8. Americans With Disabilities Act (ADA)
  - 9. Building Industry Consulting Service International (BICSI)
  - 10. Audio/Visual & Integrated Experience Association (AVIXA)
- E. Include all items of labor and material required to comply with such standards and codes. Where quantity, sizes or other requirements indicated on the drawings or herein specified are in excess of the standard or code requirements, the specifications or drawings, respectively, shall govern.
- F. All systems shall be installed according to standards outlined in the following-
  - 1. "Sound System Design" Third Edition, Davis and Patronis.
  - 2. "Handbook for Sound Designers" Fourth Edition, Glen M. Ballou.
  - 3. "Audio and Visual Systems Design" Revised Edition, Wadsworth.
- G. Installation shall be performed in accordance with the applicable standards, requirements and recommendations of the current local codes and any additional authorities having jurisdiction.

#### 1.4 QUALITY ASSURANCE

- A. General
  - 1. Furnish and install only new equipment and materials required (less than 1 year from manufacture), unused without blemish or defect.
  - 2. Each major component of equipment shall have the manufacturer's name, address, model number and rating on a plate securely affixed in a conspicuous place. The nameplate of a distributing agent will not be acceptable. NEMA Code Ratings, UL label, or other data which is die-stamped into the surface of the equipment shall be stamped in a location easily visible. Performance as delineated in schedules and in the specifications shall be interpreted as minimum performance. In many cases, equipment is oversized to allow for pickup loads which cannot be delineated under the minimum performance.
  - 3. All equipment of the same type shall be the product of one manufacturer.
  - 4. The original factory condition of manufactured equipment shall not be modified without the written approval of the Designer.
- B. Qualifications
  - 1. The Contractor shall have been in existence for a minimum of 5 years.

- 2. The contractor shall specialize in the installation of Audio/Visual systems of equal scope, quality, type, and complexity to that required herein.
- 3. The Contractor shall be a member in good standing in an industry recognized trade organization such as the AVIXA, National Association of Broadcasters, or National Systems Contractors Association for at least 5 years prior to bid time. Provide verification of membership.
- 4. The Contractor will own, at time of bid, all required testing equipment called for in the specifications. Technicians responsible for operating testing equipment will have successfully completed all manufacturers' approved training courses for the successful operation of the testing equipment.
- 5. The Contractor shall be an authorized dealer for at least 75% of the primary components specified for at least one year prior to bid time. This shall include speaker systems, audio digital signal processing, integrated control systems, and amplification equipment.
- 6. The Contractor shall be trained and certified on the programming, configuration, and setup of all microprocessor-based electronics including audio digital signal processors and integrated control systems.
- 7. The principal members and key personnel to be assigned to the project shall each have a minimum of 10 years' experience in completing Audio/Visual projects of equal scope, quality, type, and complexity to that required herein.
- 8. Minimum of five Audio/Visual systems of similar size and scope, installed and operational for a minimum of one year.
- 9. On-site personnel will have successfully completed all training requirement set forth by the primary Audio/Visual electronics product manufacturers. A copy of the training certificates will be available upon request.
- 10. Project Lead Technician
  - a. Trained and certified by the primary Audio/Visual product manufacturers specified for the project including all audio digital signal processors and integrated control systems.
  - b. Minimum 5 years experience as Lead Technician on Audio/Visual System projects of similar size and scope.
  - c. AVIXA CTS-I certification.
- 11. Project Technicians
  - a. Minimum 2 years experience on Audio/Visual System projects of similar size and scope.
  - b. AVIXA CTS certification.
- 12. Local services facility within 150-mile radius of project location.

## 1.5 SUBMITTALS

- A. The formal submittal shall be transmitted 30 days after Pre-Submittal Meeting.
- B. Submit electronic submittals via email as PDF electronic files.
- C. Product Submittal
  - Submittal must consist of a complete package including Bill of Material, Product Data for each Section of the Division 27 Audio/Visual Systems, and Shop Drawings as applicable. <u>PARTIAL OR</u> <u>INCOMPLETE SUBMITTALS ARE NOT ACCEPTABLE.</u> The Submittal shall include the following:

- a. A Title Page, complete with the following required information:
  - 1) Project name.
  - 2) Date.
  - 3) Name and address of the Designer.
  - 4) Name and address of the Electrical Contractor
  - 5) Name and address of the General Contractor
  - 6) Name and address of any Subcontractors.
- b. An Index Page, complete with the following required information:
  - 1) Name of the Supplier.
  - 2) Name of the Manufacturer.
  - 3) Title, section and paragraph of the Specification Sections. (Example section 274140, paragraph 2.4)
  - 4) Products in order as specified in PART II of the related specification.
- c. Bill of Materials
  - 1) Provide complete bill of materials for all major components, accessories, and hardware to be provided in order to assemble a complete functioning system.
  - 2) Bill of materials shall include
    - a) Manufacturer Name
    - b) Model
    - c) Version
    - d) Quantity
- d. Each Specification section shall be separated, collated in order, and complete with the following information:
  - 1) Title sheet.
  - 2) Descriptive purpose of the system, stating how each product is to function.
- e. Each Data Sheet shall have the specific reference to the Specification it is to be used for, noting the section and paragraph.
- f. Product Data showing multiple products, models or options shall be clearly marked identifying the specific product, model and options, which are submitted for review. Unmarked submittals or facsimile copies shall not be acceptable.
- g. Submit product data for all equipment showing:
  - 1) Original Data Sheets Only.
  - 2) Product performance, mechanical and electrical specifications.
  - 3) Manufacturer's installation instructions.
  - 4) Certification from the submitted manufacturers that the Contractor's designated personnel are trained on the installation of the system. Include Contractor installer's name, experience and responsibility.
  - 5) Product test compliance certificates if required.

#### D. Shop Drawings

- 1. Contract documents are diagrammatic in nature and intended to define the general scope and complexity of the systems. They do not reflect the detail necessary to construct the specified system. Assembly and submission of detailed shop drawings are required.
- 2. Submittals consisting of reproduced copies of the original bidding documents will be rejected. The contractor is required to develop a complete set of drawings specific to the final configuration of the system based on the manufacture and models of all components included. Shop drawings are to include all changes noted in addenda, as well as any changes included in Designer's special instructions or change orders issued prior to the submittal of the shop drawings.
- 3. Shop drawings shall be submitted with product data.
- 4. All drawings shall be created using an industry-recognized computer-aided design program. Recognized programs include **AutoDesk Revit, AutoCAD, Microstation and Visio**. All drawings are to be made using the latest software release available.
- 5. Submit shop drawings for all equipment showing:
  - a. Location and layout of all field equipment on floor plans. Include all device revisions from addenda.
    - 1) Input Panels and Connectivity
    - 2) Speakers
    - 3) Microphones
    - 4) Projectors
    - 5) Displays
    - 6) Projection Screens
    - 7) Antenna
    - 8) Control panels
    - 9) Conduit routing
    - 10) Cable routing
    - 11) Podiums
    - 12) Cabinets and Equipment Racks
    - 13) Wall Penetrations for Conduit, Tray, and Sleeves
  - b. All devices shall be shown with the respective label.
  - c. Large scale (minimum 1/4"=1') floor plan and elevation view drawings of all Audio/Visual equipment in rooms depicting all racks, consoles, cabinets, equipment, outlets, etc.
  - d. Size and spacing of all anchors, wall penetrations, joinery construction, etc., required for complete system installation.
  - e. Sizes, shapes, thickness and finishes of all materials and equipment surfaces.
  - f. Electrical riser diagrams identifying all signal, power and ground circuitry. Identify circuit numbers corresponding with electrical drawings.
  - g. Elevations of all equipment racks and cabinets showing equipment mounting locations (front and rear). Rack identification/labeling shall be shown. Elevations are to scale and representative of specific manufacturer and model of products provided. All patch panels, horizontal/vertical cable management, power distribution, grounding hardware, and un-interruptible power supplies. Identify space allocation required for owner furnished and installed hardware. Quantities of devices shall reflect final configuration of system based on total number of devices served from rack.

- h. Wire management details for the installation of cable harnesses inside racks, equipment cabinets and other areas of exposed cable.
- i. Block diagram(s) depicting system integration details.
  - 1) Wiring diagrams are required to show point-to-point connection of all terminations for all devices.
  - 2) Indicate wire type used for connection.
  - 3) Indicated type of termination to be made. (i.e. terminal strip, euro block, XLR, etc.)
  - 4) Indicate wire tag number.
- j. Scaled layouts of all custom integrated control system graphic user interface panels.
- k. Scaled layouts of all custom AVI input/output interface panels. Panels should show final descriptive labels and connector type.
- I. Installation detail of all surface or flush mounted devices including but not limited to speakers, cameras, projectors, etc. Detail to show all required mounting and suspension hardware, as well as connection made to structure. Provide front, side, and top views.
- m. Installation detail of all suspended devices including but not limited to speaker systems, projection systems, etc. Detail to show all required mounting and suspension hardware, as well as connection made to structure. Provide front, side, and top view.
- n. Printouts of all digital signal processing programs showing signal routing, level control, and processing.
- E. Samples
  - 1. Provide samples as requested for review and approval of substitutions or as specified in Division 274100 series.
- F. Test Plan and Documentation
  - 1. Submit a complete testing plan for all systems for approval within thirty (30) days of receipt of approved shop drawing/product data submittal.
  - 2. Plan submitted must include shop and field testing of each and every field device and control function.
  - 3. Plan submitted must include examples of testing documentation. Shop testing documentation must be submitted for approval prior to control system shipment to job site. Field testing documentation must be submitted when requesting final Demonstration/Inspection (described below).
  - 4. Detailed testing agenda and testing documentation forms for all systems. Detailed agenda outlining the "hands-on" training sessions to be provided to the Owner/User. The operation, programming/debugging, troubleshooting, repair and maintenance of all systems shall be covered.
- G. Training Plan and Documentation
  - 1. Submit a complete training plan for all systems for approval.
  - 2. As a minimum, the plan submitted must include individualized training paths for the following personnel on all aspects of the Audio/Visual system.
    - a. Administrators

- b. Supervisors
- c. Operators
- d. Maintenance Personnel
- 3. As a minimum, the plan submitted must include the following:
  - a. Proposed classes or sessions.
  - b. Recommended attendees for each class or session.
  - c. Proposed class or session objectives.
  - d. Proposed class or session agenda and duration.
  - e. Proposed supporting materials for each class or session.
  - f. Proposed testing procedure for evaluation purposes.
  - g. Proposed documentation of testing and evaluation.
- 4. Do not commence training until the plan has been approved.
- 5. Plan submittal must include names of technical instructors. Contractor must provide Designer responsible for project as instructor. Contractor instructor shall submit evidence of factory training on system provided.
- H. Operating and Maintenance Data
  - 1. Provide operating and maintenance manual for each Division 27 Audio/Visual System.
  - 2. Manuals shall be submitted in both paper and electronic format.
  - 3. Provide one (1) copy of operating and maintenance manual for each Division 27 Audio/Visual System. Manual shall be bound in "D-ring" binder with a detailed table of contents.
  - 4. Provide electronic submittal in PDF format of each Division 27 Audio/Visual System.
  - 5. The O & M manuals shall be cross-referenced to the Record Documents and contain the following information for all systems:
    - a. Printed hard copy "Hands-on" operational instructions. Operational instructions are to be specific to each individual system and should be written using clear and understandable terminology. Photos and illustrations should be used to the fullest extent to convey the successful operation of the system. Instructions shall define the operation of the system including but not limited to the following
      - 1) System power "ON" and "OFF"
      - 2) Audio Operation
        - a) Plugging hardware microphones into the system.
        - b) Wireless microphone battery replacement.
        - c) Wireless microphone transmitter power control and operation.
        - d) Individual volume adjustment of all inputs, microphone and program.
        - e) Balancing of individual input levels.
        - f) Master level control.
        - g) When applicable, room dividing/combining.
    - b. Manual shall include trouble shooting instructions for common issues and failures that can be expected of each system.
    - c. Product catalog cut sheets and specifications of all equipment.

- d. Manufacturer operation manuals for all equipment
- e. Detailed programming instructions for all systems and all software programs.
- f. Printed copy of all equipment settings. This is to include the final settings for all source level control, analog and digital processing, and amplification.
- Provide electronic copy of each O & M Manual, saved on a minimum of three USB thumb drives. Two thumb drives are to be turned over to the Owner/User. The third is to be left in the rear of the equipment rack.
- 7. Repair procedures for all equipment.
- 8. Preventative maintenance procedures for all equipment.
- I. Record Documents
  - 1. Provide Record Documents for each Division 27 Audio/Visual System.
  - 2. Records shall be submitted in both paper and electronic format.
  - 3. Provide one (1) black line print.
  - 4. Provide electronic submittal in PDF format.
  - 5. Record documents shall detail "As-built" condition of all systems including:
    - a. A set of updated shop drawings showing all Contract changes.
    - b. A set of updated product data showing all Contract changes.
    - c. Floor plan showing all field devices, conduit raceway routing including all equipment rack, cabinet and pull box locations, and conduit sizes.
    - d. Floor plans shall show labeling and identification for all field devices, cables, and conductors.
    - e. Finalized rack elevations, front and rear. Rack mounted devices shall reflect labeling and identification.
    - f. Complete point-to-point wiring diagrams showing <u>ALL</u> equipment, devices, wire and cable (Signal, power and ground). This document shall also include all terminal block designations, wire tag numbering, abbreviations and color-coding.
    - g. Copies of all software programs required for any digital signal processing shall be provided. Copy shall include applied version of manufacturer's software, and all final programming/settings. Software shall be stored on USB thumb drive. All passwords shall be turned over.
    - h. Table listing the model numbers for all equipment in each system including the names and phone numbers of the manufacturer and their representative directly responsible for this project.
    - i. Electronic copy shall use the most recent version of the software platform used for creating shop drawings.
  - 6. Provide report showing results of all tests required and outlined in individual 274100 series specifications.
  - 7. Two (2) copies of training session on USB thumb drive.
  - 8. Transmittal letter listing delivery of complete spare parts inventory.
  - 9. Copy of warranty statement.
  - 10. Procedures for addressing warranty/repair issues.

#### PART 2 - PRODUCTS

#### 2.1 GENERAL REQUIREMENTS

A. Products shall have been manufactured and in operation for at least one year, unless otherwise specified by performance requirements.

#### 2.2 SUBSTITUTIONS

- A. Deviations from specifications
  - 1. Any deviations from the specifications must be approved 10 calendar days prior to the bid date. This includes changes to the scope of work, equipment substitutions, and changes to the general provision.
  - 2. Changes to the scope of work in the bid proposal are not acceptable. Any proposed change is to be submitted to the Designer for review. Any approved changes will be listed by addendum prior to the bid opening.
  - 3. Any proposed equipment substitution must be submitted 10 calendar days prior to the bid date. Accompanying the request, the contractor must provide manufacturer's product specifications for the exact model to be substituted. This literature must clearly state all specifications called for in the bidding documents, as well as performance characteristics not specified but inherent to the product listed in the specifications. Any items approved for substitution will be listed by addendum prior to the bid opening. Substitutions after the award of bid will only be considered in case of discontinued equipment, or if an item of equal or better quality (from same manufacturer) is available and will not affect the contract cost of the system.
  - 4. Changes to the general provisions are not acceptable. Any proposed change is to be submitted to the Designer for review. Any approved changes will be listed by addendum prior to the bid opening.
  - 5. When a specified item is found to be discontinued or obsolete by the manufacturer, the contractor is required to substitute the manufacturer recommended equivalent for that product. If an equivalent is not available, the contractor is instructed to notify the Designer in writing prior to bid time.

## 2.3 MANUFACTURED PRODUCTS

- A. Materials and equipment furnished shall be of current production by manufacturers regularly engaged in the manufacture of such items, for which replacement parts are readily available.
- B. Equipment Assemblies and Components
  - 1. All components of an assembled unit need not be products of the same manufacturer; however, all components must be acceptable to the Designer.
  - 2. Manufacturers of equipment assemblies, which include components made by others, shall assume complete responsibility for the final assembled unit.
  - 3. When more than one unit of the same class of equipment or material is required, such units shall be the products of a single manufacturer.
  - 4. Components shall be compatible with each other and with the total assembly for the intended service.
  - 5. Constituent parts which are similar shall be the product of a single manufacturer.

- C. All factory wiring shall be identified on or provided with the equipment being furnished and on all wiring diagrams and included with O & M manuals.
- D. When factory testing is specified
  - 1. The Designer shall have the option of witnessing factory tests. The contractor shall notify the Designer a minimum of 15 working days prior to the manufacturers making the factory tests.
  - 2. Four copies of certified test reports containing all test data shall be furnished to the Designer prior to final inspection and not more than 90 days after completion of tests.
  - 3. When equipment fails to meet factory test and reinspection is required, the CONTRACTOR shall be liable for all additional expenses.

## 2.4 EQUIPMENT IDENTIFICATION

- A. In addition to the requirements of the National Electrical Code, install an identification sign which will clearly indicate information required for use and maintenance of items such as cabinets, control devices and other significant equipment.
- B. Nameplates shall be laminated black phenolic resin with a white core and engraved lettering, a minimum of 1/4-inch high. Nameplates that are furnished by manufacturer, as a standard catalog item, or where other methods of identification are herein specified, are exceptions.
- C. All inputs and outputs are to be clearly labeled. Inputs to include the source location and signal type. Outputs should indicate location signal is sent to.
- D. All custom input plates labeling shall be engraved and paint filled or laser etched with a contrasting color as shown on the specification.
- E. Any and all user serviceable devices shall be clearly labeled.

#### PART 3 - EXECUTION

#### 3.1 INSPECTION

- A. Before installing electronic equipment, carefully inspect the installed Work of all other Trades. Verify that all such Work is complete to the point where the installation of electronic equipment may properly commence. Verify that all Audio/Visual Equipment spaces are free of airborne contaminants prior to the installation of electronic equipment.
- B. Verify that all equipment is installed in accordance with all pertinent codes and regulations, the original design, and the referenced standards.
- C. In the event of discrepancy, immediately notify the Designer.
- D. Do not proceed with installation in areas of discrepancy until such discrepancies have been fully resolved.
- E. Return to original (preconstruction) condition any work disturbed during system installation.

#### 3.2 INSTALLATION

- A. Install all equipment in strict accordance with the manufacturer's recommendations, reviewed shop drawings and TIA standards.
- B. Do not attach electrical materials to roof decking, removable or knockout panels, or temporary walls and partitions, unless indicated otherwise.
- C. Secure equipment with fasteners suitable for the use, materials, and loads encountered. If requested, submit evidence proving suitability.
- D. National Electrical Code requirements are applicable to all work.
- E. Working spaces shall be not less than specified in the National Electrical Code for all spaces.
- F. Where the Designer determines that the Contractor has installed equipment not conveniently accessible for operation and maintenance, equipment shall be removed and reinstalled as directed at no additional cost to the Owner/User. "Conveniently accessible" is defined as being capable of being reached without the use of ladders, or without climbing or crawling under or over obstacles such as motors, pumps, belt guards, transformers, piping, and duct work.
- G. Cabling must not be supported by building systems equipment, ductwork, mechanical system supports, ceiling grid system or supports. All cable support hardware shall be independently supported by hardware and installation methods as dictated on building or Design drawings.
- H. Cabling must not be attached to any part of a Fire Sprinkler System and must not obstruct sprinkler heads.
- I. Cabling must be supported at a maximum interval of 5 feet.
- J. Cabling must be grouped together in pathways where possible.
- K. Latch and hook type straps shall be used when bundling cables. Nylon ZIP ties are prohibited.
- L. All programming of digital signal processors and integrated control equipment is to be performed in the contractor's shop prior to delivery to the job site. All equipment is to be fully tested.
- M. All equipment racks are to be fully assembled and wired in the contractor's shop prior to delivery to the job site. All electronics are to be fully tested.

#### 3.3 WORK PERFORMANCE

- A. Coordinate location of equipment with other trades to minimize interferences.
- B. Holes through concrete and masonry in new and existing structures shall be cut with a diamond core drill or concrete saw. Pneumatic hammer, impact electric, hand or manual hammer type drills shall not be allowed, except where permitted by the Designer as required by limited working space.
- C. Holes shall not affect structural sections such as ribs or beams.

- D. Holes shall be laid out in advance. The Designer shall be advised prior to drilling through structural sections for determination of proper layout.
- E. Any holes created in walls, floors, or ceilings by the Contractor are to be sealed with a fire rated caulking according to all national, state, and local codes.
- F. Hangers and other supports shall support only equipment and materials. Provide not less than a safety factory of 5, which shall conform to any specific requirements in the Construction Documents.
- G. The Contractor is responsible for repairing and or replacing any damage caused by their workforce at no additional cost to the Owner/User, or the Owner/User's representatives.

#### 3.4 PROTECTION AND CLEANING OF SYSTEMS AND EQUIPMENT

- A. Protect all materials and equipment from damage during storage at the Site and throughout the construction period. Equipment and materials shall be protected during shipment and storage against physical damage, dirt, moisture, cold and rain.
- B. Prevent damage from rain, dirt, sun and ground water by storing equipment on elevated supports and covering all sides with securely fastened protective rigid or flexible waterproof coverings.
- C. Protect piping by storing it on elevated supports and capping the ends with suitable closure material to prevent dirt accumulation in the piping.
- D. During construction, cap the top of all conduits and raceway installed vertically.
- E. During installation, protect equipment against entry of foreign matter on the inside, and vacuum clean both inside and outside before testing and operating.
- F. Damaged equipment, as determined by the Designer, shall be replaced.
- G. Protect painted surfaces with removable heavy kraft paper, sheet vinyl or equal, installed at the factory and removed prior to final inspection.
- H. Repaint damaged "FINISH" paint on equipment and materials with painting equipment and finished with same quality of paint and workmanship as used by the original manufacturer so repaired areas are not obvious.
- I. Conduit back boxes, floor boxes, and poke thru's shall be vacuumed clean prior to the installation of cable.

#### 3.5 IDENTIFICATION

- A. Nameplates shall be laminated black phenolic resin with white core and engraved lettering, a minimum of ¼ inch high. Nameplates that are furnished by manufacturer, as a standard catalog item, or where other methods of identification are herein specified, are exceptions.
- B. Uppercase letters of uniform height; centered on device, cover plate, or enclosure; engraved letters filled with a contrasting color; and all characters made clearly and distinctly.

C. Use abbreviations defined in the contract documents whenever possible. Use plan designations for labeling unless indicated otherwise.

#### 3.6 LABELING

A. All cables shall be properly identified using an industrial quality thermal transfer labeling device. Labels shall be high contrast labels with white background and black lettering. Handwritten labels are prohibited.

#### B. Cable

- 1. Provide typewritten labels on both ends of all audio-visual system cabling. Locate label within 6" of cable termination. Cover label with clear heat shrink tubing.
- 2. Label designation shall consist of letter indicating type of cable (i.e. S for Speaker, L for Line Level, C Control, M Microphone etc.) and a number. Numerical designations shall be sequential.
- C. Power Outlets
  - 1. Power outlet labels are to be mechanically generated.
  - 2. All power outlets designated for audiovisual equipment shall be labeled "AUDIO/VISUAL EQUIPMENT ONLY". On top.
  - 3. Provide a second label on the bottom of the outlet cover plate indicating service panel number and circuit breaker number.
  - 4. Text lettering to be 1/8" high.
- D. Rack Mounted Electronic Components
  - 1. Electronic component labels are to be mechanically generated.
  - 2. All inputs are to be labeled identifying source location of signal.
  - 3. All outputs are to be labeled identifying signal destination.
  - 4. Provide ¼" diameter indicator dot showing level setting for all rotary knobs, sliders, and pushbutton switches.
  - 5. Power switches shall be clearly labeled indicating switch is to be left in the on position at all times.
- E. Portable Electronic Components
  - 1. Electronic component labels are to be mechanically generated.
  - 2. All inputs are to be labeled identifying source location of signal.
  - 3. All outputs are to be labeled identifying signal destination.
  - 4. Provide ¼" diameter indicator dot showing level setting for all rotary knobs, sliders, and pushbutton switches.
  - 5. Power switches shall be clearly labeled.
  - 6. Provide drawing illustrating hookup of portable equipment. Show required interconnection with input panel. Drawing should clearly indicate type of patch cable required for termination.
- F. Labeling Throughout DSP Software
  - 1. Sufficient labeling shall be provided within the software of all digital signal processors.

- 2. Labels shall be provided for each component of the signal chain. Label shall define type of component and system being fed. Ex. "8 input mixer for Gymnasium".
- 3. Inputs and outputs of all devices shall be clearly labeled defining the source feeding into a device, and the location where an output is being fed to. Ex. The first input of a mixer is fed by the microphone input for a paging system. Input should be labeled "Page Mic Input".

## 3.7 CABLE TERMINATIONS AND DRESS

- A. Installation of audio/visual conductors shall adhere to the following:
  - 1. Cables shall be installed in Panduit wire duct (or approved equal) in all cabinets and racks for wire and cable management.
  - 2. Cables shall be secured to equipment cabinet backboards, console members or to other system components using Panduit wire duct (or approved equal). Contractor shall furnish and install cable support posts, cable clamps or wraps, if required, to facilitate system installation where plastic wire duct use is not possible.
  - 3. All cables and/or conductors shall be terminated with approved cable termination connectors compatible with the specific termination.
  - 4. Label all cables on both ends and on all termination points.

## 3.8 CLEANING

- A. Daily during construction and prior to Owner/User acceptance of the building, remove from the premises and dispose of all packing material and debris caused by work performed under Division 274100 series specifications.
- B. Remove all dust and debris from interiors and exteriors of electrical equipment. Clean accessible current carrying elements prior to being energized.
- C. Upon completion of all work, remove excess debris, materials, equipment, apparatus, tools, and the like and leave the premises clean, neat, and orderly.
- D. All bright metal or plated work shall be thoroughly polished. All pasted labels, dirt and stains shall be removed from the devices.

## 3.9 TESTING EQUIPMENT

- A. The following minimum list of equipment is required
  - 1. 1/3rd octave real-time analyzer. NTI Audio XL2 with M4260. Ivie IE-45, Goldline DSP30B, or equivalent.
  - 2. Software based dual FFT real-time transfer function analyzer allowing for frequency domain comparison of two signals yielding precise frequency (magnitude and phase) response for the device or system under test in real time. TEF, Smaart, EASERA, or equivalent.
  - 3. High impedance multi-meter. Typical of Fluke or Simpson.
  - 4. Clamp on ammeter, peak and average measurement capability. Typical of Fluke or Simpson.
  - 5. 400 MHZ dual trace oscilloscope. Typical of Tektronix.
  - 6. Copper UTP Cable tester. Fluke DSX 5000 Cable Analyzer or equivalent.
  - 7. Fiber Optic Cable tester. Fluke OptiFIBER Pro OTDR or equivalent.

- 8. Loudspeaker impedance meter. Capable of swept impedance versus frequency plots. Typical of Smaart, TEF-net, or LinearX LMS.
- 9. Omni-directional test microphone. Typical of Audix TR40A, Earthworks M-30BX, or equivalent.
- 10. Laptop computer. Laptop performance requirements meet the operational requirements of all testing, digital signal processors, integrated control systems, and video processing equipment. Minimum requirements include Windows 10. Intel Pentium Quad Core processor, 2.7 GHz, 8 GB ram, 1366x768 display, 500 GB 5400 RPM SATA Hard Drive, Intel HD Graphics 3000 video card, and CD/DVD RW.
- 11. Test Microphone Preamp. Two channels. 24-bit A/D converters, 106 dB dynamic range (24-bit recording mode). 48-volt phantom power. High impedance low-noise instrument DI. Line or tape level inputs. Zero-latency analog monitoring. Bus powered from host computer. Sound Devices USBpre 2 or Sound Technologies Model 90.
- 12. Cable Tester. Tests NL4, 5 pin DIN, BNC, XLR, TRS, RCA, and 3.5 mm type connectors. Tests for continuity and wiring configuration. Whirlwind, Mackie, Pyle.
- 13. Polarity Tester. Galaxy Cricket, Gold Line, or equivalent.

## 3.10 COMPLETION

- A. Results Expected
  - 1. All equipment and materials shall be in place and all systems shall be demonstrated to be operationally complete.
  - 2. All testing, start-up and cleaning work shall be complete.
  - 3. All documented testing results are submitted and approved by the Designer. ANY COMPONENT OF THE SYSTEM THAT FAILS TO MEET TEST PERFORMANCE STANDARDS SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST.
  - 4. The Contractor shall provide test equipment to the Designer to spot check test result documentation.
  - 5. All O & M Manuals and Record Documents are reviewed and accepted.
  - 6. Substantial Completion inspection is performed and granted. The Substantial Completion inspection punch list is completed by the Contractor.
  - 7. All facility training shall be complete and DVD of the training sessions are reviewed.
  - 8. All warranties are received.
  - 9. Transmittal letter listing delivery of complete spare parts inventory.

## 3.11 DEMONSTRATION/INSPECTION

- A. Upon completion of approved testing procedure and submittal of testing documentation as described above, the contractor shall notify the Designer, who will visit the project for a demonstration of the systems and an inspection of the completed work in conformance with the Construction Documents. It is mandatory for a representative from the Contractor directly responsible for the project to be present during demonstration and inspection periods. Demonstration and inspection of all systems by the Designer shall take place prior to turning over the system to the Owner/User.
- B. Items which do not comply with the Contract Documents, or which function incorrectly, will be listed and the list will be submitted by the Designer to the Contractor.
- C. After all corrections have been made, the Contractor shall notify the Designer who will recheck the system for compliance of all items listed. IF THE DESIGNER IS REQUIRED TO RETURN TO THE SITE FOR

FURTHER INSPECTIONS, ALL LABOR AND TRAVEL EXPENSES SHALL BE REIMBURSED BY THE CONTRACTOR.

#### 3.12 TRAINING

- A. Provide training after all final tests and adjustments have been completed. Instruct the Owner/User's personnel according to the approved Training Plan specified above in "Training Plan and Documentation." Training shall cover all aspects of systems operation, maintenance and programming, and will be provided by the responsible Contractor technical representatives.
- B. Provide written operating instructions specific to the basic operation of the system. Basic instructions should cover all operational aspects of the system required for basic operation including system powering, signal patching and routing, and level control. These instructions are to be laminated and located with the main system power control.
- C. Schedule training sessions to meet the needs of facility personnel as determined by the Owner/User. Provide training during second and third shifts if the Owner/User determines it is necessary.
- D. Provide a minimum of 16 hours of training. All training is to be completed during the time frame established during scheduling with the Owner/User and training may not necessarily be in continuous periods.
- E. Contractor is required to be in attendance during the Owner's first two major uses of the system.
- F. Refer to individual sections for system specific training requirements.

#### 3.13 MAINTENANCE MATERIALS

A. Provide spare materials as indicated in Contract Documents and as required for proper maintenance of systems.

#### 3.14 WARRANTY, WARRANTY SERVICE AND MAINTENANCE

- A. Warranty
  - 1. The Division 274100 series audio/visual system shall be fully guaranteed for a period of two (2) years beginning on the date of Owner/User acceptance.
  - 2. The guarantee shall include the entire Division 274100 series scope of work including all equipment, devices, materials, cable/wire, software and installation.
  - 3. Work shall be guaranteed to be free from defects. Any defective materials or workmanship, as well as damage to the Work of all other Trades resulting from same, shall be replaced or repaired as directed by the Owner/User for a period of two (2) years from the date of Owner/User final acceptance. The Contractor shall provide written warranties for all systems and all buildings to the Owner/User.
  - 4. The guarantee shall exclude acts of God, vandalism, physical abuse or operator misuse.
  - 5. Acceptance by a manufacturer of an order for equipment for this contract signifies acceptance of this warranty. During the warranty period there shall be no charge to the Owner/User for equipment, material, software, etc. for guaranteed work.

- 6. During the warranty period, there shall be no charges to the Owner/User for service calls (mileage, labor, travel, expenses, etc.) for guaranteed work.
- B. Warranty Service
  - 1. Warranty service shall be provided as part of this Contract during the warranty period.
  - 2. Warranty service agreement must be submitted separately and must contain the name, voice phone number, facsimile phone number and pager number of the service provider capable of meeting the response time as defined by the Designer.
  - 3. This service shall consist of the following:
    - a. 24-hour phone number.
    - b. Technician's factory trained by the manufacturers of the system's components.
    - c. Authorized representation of the manufacturer via an agreement of factory support.
    - d. Five years experience (minimum) servicing systems of the type included in this project.
    - e. Capability of making additions or changes to the software systems used in this project.
    - f. Capability of servicing the individual system components and the total audio/visual system.
    - g. Equipment and knowledge to test all specified equipment and devices.
    - h. Current system documentation including but not limited to the following:
      - 1) Wiring diagrams.
      - 2) Operation and maintenance manuals.
      - 3) Software programs.
      - 4) Other documentation as required to aid the Owner/User in the operation and maintenance of the systems.
      - 5) All documents shall be made available to Owner/User upon request.
      - 6) Upon termination of maintenance agreement all system documents shall be furnished to Owner/User for maintenance continuity.
  - 4. The Owner/User and/or Designer shall notify the Contractor in writing, outlining operational malfunctions or defects in the Division 274100 series Audio/Visual system. This report shall be emailed to the service provider which will establish the date and time or problem notification.
  - 5. Upon successful completion of warranty service, the responsible technician shall return a copy of the original service request to the facility with a detailed description of the problem found, and corrective action taken including a list of equipment/parts/software repaired or replaced. The technician shall also sign the on-site service log at the facility.
  - 6. The Contractor shall maintain a repair parts inventory sufficient to maintain the response times specified. All parts used from the Owner/User's spare parts inventory for warranty service shall be replaced at no cost to the Owner/User.
  - 7. Response Times:
    - a. Telephone Call Response: Within 1 hour of request
    - b. On-Site Response:
      - 1) M-F 8:00 a.m. to 5:00p.m. Within 48 hours of request.
      - 2) Saturday or Sunday Within 48 hours of request.

#### END OF SECTION 27 4100

#### SECTION 27 41 50

#### AUDIOVISUAL SYSTEMS

#### PART 1 - GENERAL

#### 1.1 SYSTEM DESCRIPTION

- A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
  - 1. In addition to displaying user generated content, displays may be used to stream audio/video content generated from the owner provided workstation.
  - 2. Unless otherwise noted herein or on system drawings, all Laser projectors, large format LED TV displays and their associated ceiling and wall mounts, shall be Contractor Furnished/Contractor Installed.
  - 3. Audiovisual systems may include, but not be limited to: projectors, large format TV displays, ceiling and wall mounts, projection screens, audio DSPs, audio amplifiers, program speakers, wired and wireless microphones, HDMI inputs/outputs, matrix switchers, conferencing cameras, control system software, touch screen control panels, assisted listening systems, cables, wires, connectors, adapters and licenses.

#### 1.2 QUALITY ASSURANCE

- A. Audiovisual devices shall be mounted using compatible mounts and accessories.
- B. Audiovisual devices shall be of the latest technology. No discontinued or end-of-life products are acceptable.
- C. Contractor qualifications:
  - 1. Minimum of Five years of system design, engineering supervision, and installation experience in the audiovisual integration business.
  - 2. Maintain a local office within 200 miles of project location, with a service center staffed by trained technicians and adequately equipped to provide emergency phone service within 24 hours on a 24-hour, 365 days per year basis, whether or not the Owner purchases a maintenance contract with the Contractor.
  - 3. Maintain an inventory of spare parts and other items critical to system operation, as necessary to meet the emergency service requirements.
  - 4. Maintain an in-house engineering and project management capability consistent with the requirements of this project.
  - 5. Provide a project manager who is actively engaged in the project. This person shall be the same individual throughout the course of the project and shall be the person responsible for the scheduling of the system programming, preparation of the submittals and project close-out documentation, training programs, system testing and report documentation, and the coordination of all subcontract labor. The Owner reserves the right to approve the Contractor's project manager.

#### 1.3 DELIVERY, STORAGE, AND HANDLING

- A. Ship equipment in original packaging to prevent damage. All handling shall be in accordance with manufacturer recommendations. Inspect all products and materials for any damage immediately upon delivery to the project site.
- B. Provide protective covering during construction.
- C. Replace equipment and products damaged during shipping, handling, distribution, storage, installation, or construction with new equipment and products.

D. Equipment and products stored at the project site or at an off-site location shall be protected from dust, dirt, and foreign matter. Protect equipment and products from water, damage, dents, bumps, and scratches.

## 1.3.1 SCHEDULING

- A. Submit proposed construction schedule detailing the task milestones, durations, and sequences for the project for review and approval prior to commencement of work.
- B. When work is performed in a sensitive area or in an area occupied with ongoing business activities coordinate with the Owner and the affected department's representative to determine the best time to perform the work required.

## 1.3.2 WARRANTY

- A. Provide two-year parts and labor project warranty. Parts and labor shall be guaranteed against defects in materials and workmanship for two years from written notification of acceptance.
- B. All hardware shall be backed by a minimum 5-year limited warranty.

## PART 2 - PRODUCTS

## 2.1 PROJECTOR MOUNTS

- A. Specifications
  - 1. Up to 150lb capacity
  - 2. Color: white
  - 3. Independent Roll-Pitch-Yaw, Micro-Adjustable
  - 4. Universal interface
- B. Acceptable Manufacturers
  - 1. Chief (Legrand)
  - 2. Crimson AV
  - 3. Peerless
  - 4. Approved equivalent
- C. Provide appropriate ceiling mount and extension pole in white.

## 2.2 PROJECTION SCREENS

- A. Specifications
  - 1. Format: 16:10
  - 2. Da-Mat surface
  - 3. Ceiling mounted (flush)
  - 4. Standard 120V/60Hz power
  - 5. Diagonal screen size(s) as indicated on system drawings
  - 6. Low-voltage and video projector interface control options
- B. Acceptable Manufacturer
  - 1. Da-Lite (Legrand): Tensioned Advantage Series
  - 2. Draper
  - 3. Elite Screens
  - 4. Approved Equivalent
- C. Provide required strut channel, threaded rod and miscellaneous mounting hardware required.

## 2.3 LASER PROJECTORS

- A. Specifications for Large Conference Room
  - 1. Resolution

WUXGA

- 2. **Brightness**
- 3. Light Source
- 4. Lens(es)
- 5. Case/body color
- Β. Provide the required, optional lens based on throw distance and screen size.
- C. Manufacturers
  - Epson EB-PU2010W with ELPLL08 long throw lens 1.
  - 2. BenQ
  - Christie 3.
  - Panasonic 4.

#### **DISPLAY MOUNTS** 2.4

- Specifications Α.
  - 1. Depth
  - 2. Height
  - 3. Max. weight capacity
  - 4. Typical Screen size
  - Width 5.
  - 6. Application
  - 7. Color
  - 8. Swivel
  - Tilt 9.
  - 10. **VESA Mount Pattern compatible**
- Β. Approved Manufacturer
  - Legrand (Chief/Sanus) VLF728 series 1.
  - 2. Crimson AV
  - 3. Peerless
  - 4. Approved equivalent

#### 2.5 LED TV DISPLAYS

- A. **Specifications** 
  - Sizes (Diagonal) 1.
  - 2. **Duty Rating**
  - 3. Warranty
  - 4. Resolution
  - 5. Mounting
  - 6. Inputs

- 55, 65, 75 and 85-Inch Class 16 x 7 x 365 **Commercial series** 3-year, on-site Up to 3840 x 2160 **VESA** standard HDMI x 2, Ethernet **F-Coaxial**
- 7. Confirm all display sizes with indicated install locations prior to procurement. Ensure display will fit within the space(s) indicated on drawings.

10,000 lumens 20,000 hour virtually Maintenance free laser Optional short/long throw White

- 2.15 28.00 inches 17.68 inches 125 lbs. 42-90 inch 33.8 inches Wall Mount Black + 57 to -57 degrees
- + 5 to -15 degrees

- Β. Approved Manufacturer
  - 1. Samsung
  - LG 2.
  - 3. Panasonic
  - Sharp 4.

#### 2.6 **UPS (Uninterruptable Power Supply)**

#### Α. Specifications

- Line Interactive 1.
- 2. On-Line
- 3. Output Voltage Distortion:
- Output Frequency (sync to mains): 4.
- 5. Input voltage range for main operations:
- 6. Input Connection:
- 7. **Output Connections:**
- 8. Rack mountable (provide rail kits)
- Β. Approved Manufacturer
  - APC Smart-UPS SRT2200XLA for Sound Room 138 AV rack 1.

750VA

2.2KVA

Less than 5%

82 - 143V

50/60Hz +/- 3 Hz

NEMA 5-15P and 5-20P

NEMA 5-15R and 5-20R

- 2. APC Smart-UPS SMT750C for Closet 220 AV rack
- 3. Eaton
- 4. Vertiv
- 5. Approved equivalent

#### 2.7 **PoE AUDIOVISUAL SWITCH**

Specifications Α.

1.	Total 10/100/1000 Ethernet Ports:	24 and 48 port PoE
2.	Available PoE Power:	715W AC
3.	Power Supply:	(2) power supplies
4.	Stacking Bandwidth:	160 Gbps
5.	Total Number of MAC Addresses:	32,000
6.	Total number of IPv4 routes:	24,000
7.	FNF Entries:	48,000
8.	DRAM:	4 GB
9.	Flash:	4 GB
10.	VLAN ID's	4,094
11.	Total Switched Virtual Interfaces:	1,000
12.	Jumbo Frame:	9198 bytes
13.	Total Routed Ports Per 3650 Stack:	208
14.	4x1 Gigabit Ethernet Uplink-Models:	41.66 Mpps
Acceptable Manufacturer		
1.	Cisco with IP base licensing	

- 2. Aruba

Β.

- NetGear 3.
- 4. Ubiquity

## 2.8 CONTROL PROCESSOR

- A. Acceptable Manufacturer
  - 1. Extron IPCP PRO 555Q XI
  - 2. Atlona
  - 3. Crestron
  - 4. Approved equivalent

## 2.9 CONTROL PROCESSOR EXPANDER

- Acceptable Manufacturer
  - 1. Extron IPL EXP RIO8
  - 2. Atlona

Α.

- 3. Crestron
- 4. Approved equivalent

# 2.10 DIGITAL MATRIX PROCESSOR

- A. Acceptable Manufacturer
  - 1. Extron DMP 128 PLUS C AT
  - 2. Extron DMP 64 PLUS C AT
  - 3. Atlona
  - 4. Crestron
  - 5. Approved equivalent

# 2.11 AV OVER IP ENCODER/DECODER

- A. Acceptable Manufacturer
  - 1. Extron NAV E 501 (Encoder)
  - 2. Extron NAV SD 101 (Decoder)
  - 3. Atlona
  - 4. Crestron
  - 5. Approved equivalent

## 2.12 TWISTED PAIR AV EXTENDER

- A. Acceptable Manufacturer
  - 1. Extron DTP T and DPT R
  - 2. Atlona
  - 3. Crestron
  - 4. Approved equivalent

## 2.13 USB SCALING BRIDGE

- A. Acceptable Manufacturer
  - 1. Extron MEDIAPORT 300
  - 2. Atlona
  - 3. Crestron
  - 4. Approved equivalent

# 2.14 AUDIO AMPLIFIER

Α.

- Acceptable Manufacturer
  - 1. Extron XPA U 358C-70V
  - 2. Biamp
  - 3. QSC
  - 4. Approved equivalent

## 2.15 AV OVER IP SYSTEM MANAGER

- A. Acceptable Manufacturer
  - 1. Extron Navigator
  - 2. Atlona
  - 3. Crestron
  - 4. Approved equivalent

## 2.16 TOUCH SCREEN CONTROL PANELS

- A. Acceptable manufacturer
  - 1. Extron TLP PRO 1230 WTG for Council Chamber 130 Dais
  - 2. Extron TLP PRO 525M for Training/Break Room 218
  - 3. Atlona
  - 4. Crestron
  - 5. Approved equivalent
- B. Provide required brackets, stands and adapters for wall mounting and desktop/lectern mounting as indicated on drawings.

## 2.17 BLUETOOTH RECEIVER

- A. Approved manufacturer
  - 1. Atlas IED
  - 2. Q-Sys Atterotech
  - 3. Approved equivalent

## 2.18 STREAMING/VIDEO CONFERENCING CAMERA

- Approved manufacturer
  - 1. Atlona Basis of Design
  - 2. Logitech
  - 3. Sony

Α.

Α.

- 4. Vaddio
- 5. Approved equivalent
- B. Provide all adapters, cables and mounts for each camera.
- C. Coordinate installation, configuration and camera settings with Owner's IT staff.

#### 2.19 PROGRAM AUDIO SPEAKERS

- Acceptable manufacturer
  - 1. Extron SF 26CT
  - 2. Biamp
  - 3. JBL
  - 4. Q-Sys
  - 5. Approved equivalent

## 2.20 HEARING ASSISTANCE SYSTEMS

- A. Provide complete systems to include transmitter, neck loops, antennas, coaxial cables and signage. Install signage per direction of the Designer and General Contractor.
- B. Provide quantity 2 for Council Chamber 130.
- C. Acceptable manufacturers
  - Listen Technologies LT-800 stationary transmitter with LA-123 rack mount antennae. Include (2) LR-5200 receivers. Provide (2) LA161 single ear bud and (1) LA166 neck loop for each receiver. Remote mount antennae as shown on plans. Provide all required mounting hardware for transmitter and antennae as well as cables for remote antenna installation.

- 2. Williams
- 3. Approved equivalent

## 2.21 WIRELESS MICROPHONES

- A. Acceptable manufacturers
  - 1. Shure QLXD 124/85 Series wireless microphone system. System to include QLXD4 receiver and QLXD1 body pack with lavalier and handheld wireless microphones.
  - 2. AKG
  - 3. Sennheiser
  - 4. Approved equivalent

## 2.22 WIRELESS ANTENNA SYSTEM

- A. Acceptable manufacturers
  - 1. Shure UA8 series ½ wave UHF antenna and Shure UA844+SWB antenna distribution system. Provide PS45US power supplies as required.
  - 2. KG
  - 3. Sennheiser
  - 4. Approved equivalent

## 2.23 GOOSENECK MICROPHONE

- A. Acceptable manufacturers
  - 1. Shure MX412 with preamp, mute switch and LED indicator.
  - 2. AKG

3.

- 3. Sennheiser
- 4. Approved equivalent

## 2.24 AUDIO, VIDEO AND MISCELLANEOUS CABLES

- 1. Microphone cable low capacitance 22 AWG shielded, twisted pair
  - a. West Penn 25291(plenum) and 77291 (non-plenum)
  - b. Belden
  - c. Liberty
  - d. Approved equivalent
- 2. Line level cable 22 AWG shielded, twisted pair
  - a. West Penn 25291B (plenum) and 291 (non-plenum)
  - b. Belden
  - c. Liberty
  - d. Approved equivalent
  - Speaker level cable 12 to 18 AWG stranded, unshielded
  - a. West Penn 2522xB series (plenum) and 22x series (non-plenum)
  - b. Belden
  - c. Liberty
  - d. Approved equivalent
- 4. Long distance, speaker level cable 10 AWG stranded, unshielded
  - a. West Penn 25210 (plenum) and HA210 (non-plenum)
  - b. Belden
  - c. Liberty
  - d. Approved equivalent

- 5. 50 Ohm Antenna Cable, RG-8/U Coax
  - a. West Penn 25810 (plenum) and 810 (non-plenum)
  - b. Belden
  - c. Liberty
  - d. Approved equivalent
- 6. 75 Ohm Antenna Cable, RG6/U Coax
  - a. West Penn 25806 (plenum) and 806 (non-plenum)
  - b. Belden
  - c. Liberty
  - d. Approved equivalent
  - 75 Ohm General Video Cable, RG-59/u Coax
    - a. Belden 8281F
    - b. West Penn
    - c. Liberty
    - d. Approved equivalent
- 8. Control cable 18 AWG to 22 AWG, 2-conductor to 8 conductor
  - a. Belden
  - b. West Penn
  - c. Liberty
  - d. Approved equivalent

## 2.25 PRETERMINATED VIDEO CABLES

## A. Specifications

7.

- 1. Molded, pre-terminated connectivity
- 2. Refer to plans for connectivity requirements.
- 3. Typical of cables between pass through wall plates and displays.
- 4. Typical of cables for connection to AV connectivity in flip top tabletop boxes. 3' length.
- 5. Active connectivity for HDMI cables exceeding 15'
- B. Acceptable Manufacturers
  - 1. Extron
  - 2. Comprehensive
  - 3. Legrand/C2G
  - 4. Liberty
  - 5. Approved equivalent

# 2.26 CONNECTORS, AS REQUIRED

- A. In-line Cable Connectors. Provide quantity and type as needed
  - 1. 3 pin XLR male:
  - 2. 3 pin XLR female:
  - 3. TS 1/4" male plug:
  - 4. TRS 1/4" male plug:
  - 5. TRS 1/4" female plug:
  - 6. 4 pole speakon:
  - 7. Phono (RCA) plug:
  - 8. 3.5mm TRS plug:
  - 9. 75 Ohm BNC Crimp Plug:
  - 10. 75 Ohm F-Connectors:

- Neutrik NC3MX-B Neutrik NC3FX-B Neutrik NP2C-BAG Neutrik NP3C-BAG Neutrik NJ3FC6-BAG Neutrik NL4FC-B Neutrik NF2CB//2 Neutrik NYS231AV Canare BCP-C4B
- Canare FP series

- B. Chassis Mount Connectors. All chassis mount connectors are to be isolated from the panel. Provide quantity and type as needed
  - 1. 3 pin XLR male:
  - 2. 3 pin XLR female:
  - 3. 4 pole speakon:
  - 4. TRS 1/4" female:
  - 5. BNC feed through:
  - 6. F feed through:
  - 7. RCA (audio) feed through:
  - 8. RCA (video) feed through:
  - 9. HD15 to Terminal:
  - 10. DB9 to Terminal:
  - 11. Category 6:
- C. Adapters. Provide quantity and type as needed
  - 1. 3 pin XLR female to 3 pin XLR Female:
  - 2. 3 pin XLR male to 3 pin XLR male:
  - 3. 3 pin XLR female to TRS 1/4" locking jack:
  - 4. 3 pin XLR male to TRS 1/4" locking jack:
  - 5. 3 pin XLR female to TRS 1/4" plug:
  - 6. 3 pin XLR male to TRS 1/4" plug:
  - 7. 3 pin XLR female to phone jack:
  - 8. 3 pin XLR male to phone jack:
  - 9. 3 pin XLR female to phono plug:
  - 10. 3 pin XLR male to phono plug:
  - 11. HD15 to BNC Breakout:

Neutrik NC3MPP Neutrik NC3FPP Neutrik NL4MP-B Neutrik NJ3FP6P-BAG Neutrik NBB75DFI Canare FJ-JRU Canare RJ-RU Canare RJ-RU BTX CD-HD15 BTX CD-DB9 Match Cable Solution

Neutrik NA3FF Neutrik NA3FJ Neutrik NA3FJ Neutrik NA3FP Neutrik NA3FP Neutrik NA3FP Neutrik NA2FPMF Neutrik NA2FPMM Neutrik NA2FPMM Neutrik NA2MPMM BTX YV-EZVGA

#### 2.27 CUSTOM CONNECTOR PLATES, WALL AND RACK MOUNT

- A. Specifications
  - 1. Wall Plates/Floor Box Inserts
    - a. Custom input panels are to be manufactured of 1/8" aluminum plate.
    - b. All panels are to be computer machined using precision CNC or laser tooling.
    - c. Silver anodized finish.
    - d. Beveled edges.
    - e. Engraved lettering, black paint filled.
    - f. Engraved lettering to be 1/8" high, Helvetica font.
    - g. Connectors are to be mounted using screws and lock nuts. No rivets shall be used.
    - h. Wall plate width and height shall be sized ¼" larger than the size of the back box to which it is mounted.
  - 2. Rack Panels
    - a. Custom rack panels are to be manufactured with .09" 5052 aluminum.
    - b. All panels are to be computer machined using precision CNC or laser tooling.
    - c. Black anodized finish.
    - d. Bent flanged edges.
    - e. Engraved lettering, white paint filled.
    - f. Engraved lettering to be 1/8" high, Helvetica font.
    - g. Connectors are to be mounted using screws and lock nuts. No rivets shall be used.
- B. Acceptable Manufacturers
  - 1. Proco Manufacturing. Refer to drawings for quantity, size, and configuration of panels needed.
  - 2. Whirlwind
  - 3. Wireworks

#### PART 3 - EXECUTION

## 3.1 INSTALLATION

- A. All rack assembly shall be done at the contractor's facility prior to installation on site.
- B. All system programming shall be done at the contractor's facility prior to installation on site.
- C. The System shall be installed by qualified personnel in strict compliance with manufacturer's instructions.
- D. Wiring shall be color coded, uniform and in accordance with national electric codes and manufacturer's instructions.
- E. Equipment shall be firmly secured, plumb, and level.
- F. All cable runs to the main equipment rack shall be tagged and identified.
- G. Coordinate all work with other trades and Contractors.
- H. Grounding and bonding of cables and peripheral equipment shall be performed per manufacturer's direction to eliminate noise induction and achieve optimum system performance.
- I. All unused tap-off and splitter outputs are to be terminated according to manufactures guidelines.
- J. Properly align and balance all video projection systems and monitors.
- K. Set limit switches on motorized projection screens.
- L. Install and program AV local area network as required for control and communication between system devices. When required, provide necessary coordination, termination, and programming associated with integrating AV local area network with facility network.

## 3.2 RIGGING

- A. Suspended and wall mount projectors and displays will be installed in accordance with seismic guidelines.
  - 1. Seismic bracing to be provided in accordance with specified guidelines.
  - 2. Shop drawings to include detailed installation guidelines. Drawings to be approved and sealed by contractors Licensed Structural Designer.
- B. Suspension systems must be designed for a minimum design factor of 5.
- C. Suspension systems to be designed and manufactured in compliance with the following standards-
  - 1. ASME B30.20
  - 2. ANSI E1.2-2000
  - 3. OSHA 1910.184
  - 4. OSHA 1926.251
  - 5. UBC 16xx
  - 6. UL 1480 31.3
- D. Use manufacturer-supplied hardware when applicable.
- E. Hardware supplied shall have appropriate ratings and certified standards compliance for use in overhead suspension applications. Utilize thread lock adhesive on all bolts.
- F. Where applicable, only manufacturer certified forged shouldered eyebolts are allowed.
- G. Limit load angles of eyebolts to 45 degrees.
- H. Only forged anchor pin shackles are allowed.
- I. Shackles are to be equipped with a safety wire that prevents the accidental removal of the pin.
- J. Where applicable, 7x19 galvanized aircraft cable is to be utilized.
- K. Cable to be sized as required providing design factor of 5:1 for the load supported.
- L. Chain and lag bolts shall not be utilized.
- M. Termination of wire rope slings shall utilize compression sleeves with heavy thimbles.
- N. Slings must be manufactured using a specialized compression tool and associated check gauge.
- O. All suspended projection equipment must be designed and assembled for rigging applications.
- P. Mounting hardware will be designed to attach directly to the internal bracing of the suspended device.

Q. Attachment to structure must be done using manufacturer certified clamps rated for the suspended load and capable of a minimum design factor of 5.

## 3.3 SYSTEM INITIALIZING AND PROGRAMMING

- A. The System shall be turned on and adjustment made to meet requirements of the specification and onsite conditions.
- B. The system shall be programmed to function as specified.
- C. Scalers and scan converters shall be programmed to optimize image resolution.
- D. Any special programming shall be documented and a written copy given to the Owner/User.
- E. All audio levels shall be tested, adjusted and set for normal operation.

## 3.4 SYSTEM TEST PROCEDURES

- A. Testing to be performed in the Contractors shop prior to delivery-
  - 1. Test 120VAC power equipment and hardware internal to all equipment racks. Test all conductors for shorts, opens, and polarity.
  - 2. When sequencing applies to multiple power controllers, verify all controllers sequence in the desired order when activated by the master power control switch. All source level control and signal processing sequences first, amplifiers last. Reverse order for power down.
  - 3. Fully charge all UPS systems. Test unit by removing power thereby causing the unit to switch to battery reserve.
  - 4. Test routing of AV signals between devices.
  - 5. Verify video signal resolution is optimized for intended display.
  - 6. Verify all switchers route inputs to intended outputs.
- B. Testing to be performed at the job site prior to powering the system.
  - 1. Verify all signal and control cables are free of shorts and opens prior to termination of head-end electronics.
  - 2. Test all 120VAC power sources for correct polarity and voltage. Test grounding system for continuity. Notify Electrical Contractor of any problems.
- C. The System shall be completely tested to assure that all components are hooked up and in working order. Inspect system for defects. Correct all causes of such defects. If the cause is outside of the scope of this division, promptly notify the Designer in writing, indicating the cause of the defect and suggested corrective procedures.
- D. The system shall be capable of operating free of interference, hum bars, and distortion under normal operating conditions.
- E. The System shall be pre-tested by the Contractor and certified, in writing, to function in accordance with the plans and specification.
- F. Test all cabling for continuity. Verify all lines are free from shorts and opens. Testing shall include all passive components including tap-offs and splitters.
- G. Test all cables; verifying that all cables are terminated accordingly.
- H. All outlet signal level readings shall be within +/-2 db of manufacturers recommended signal level for that component.
- I. Verify display systems are operating free of banding, bending, blooming, chroma delay, convergence, ghosting, humbars/ground loops, jitter, luma display, smearing, and all other symptoms of defective equipment, incorrect termination, and incomplete system setup.
- J. Verify all components are responding to all integrated control system commands.
- K. Confirm operating software is installed on workstation and that all control connectivity between workstation and display is installed.
- L. Provide written documentation showing all test results.
- M. The System shall be final tested in the presence of the Architect/Engineer.
#### 3.5 WARRANTY

- A. The audiovisual system materials and labor shall be warranted for a period of 2 years from the date of documented Owner acceptance.
- B. Warranty shall cover materials, labor and workmanship during the 2-year warranty period.
- C. Provide an 8-hour on-site support time block to be utilized by Owner during the first, beneficial uses of the audiovisual system. This 8-hour time block shall be divided into separate, 2 or 4-hour, non-concurrent sessions per the Owner's schedule. The on-site AV support technician shall be thoroughly knowledgeable of the installed system in order to provide technical support and general assistance during the Owner's use of the system.
- D. During the 2-year warranty period, provide bi-annual (every 6 months) site visits to perform routine maintenance, adjustments and system check-ups as necessary to keep the system in proper working order. Schedule visits with the Owner a minimum of 30-days in advance.

#### 3.6 TRAINING

- A. Contractor is responsible for providing operational and maintenance training applicable to the entire video system. Training is to include, but not be limited to the following-
  - 1. Review all O+M manuals with Owner/User's representatives present for training.
  - 2. Perform a tour of the entire facility. During the tour, the trainer shall point out all video equipment and provide a brief description of its purpose and use. This is to include but not be limited to all projectors, screens, interface panels, equipment rack, field devices, and control locations.
  - 3. Explain and demonstrate the powering sequence of the system. Note all locations from which the system can be powered. Note any devices that are required to remain on at all times.
  - 4. Explain and demonstrate signal routing as it applies to all interface panels and patch panels. Note origination and destination for all signal cabling.
  - 5. Note all control locations. Describe the basic operation and purpose of all components associated with each control location.
  - 6. Explain and demonstrate the operation of all control equipment. This is to include all source selection and signal routing.
  - 7. Explain and demonstrate the operation of all video source devices such as CATV, PC workstation, Tablet, Laptop, Document Camera, etc.
  - 8. Explain and demonstrate the operation of all video recording devices.
  - 9. Explain and demonstrate the operation of all computer interfaces.
- B. Provide 16 hours of training, to be broken into minimum, two-hour, non-concurrent sessions that are scheduled and coordinated based on the Owner's availability during normal business hours.
  - 1. Training shall be performed on the installed systems.
  - 2. Training shall be programmed and divided into general user sessions and more technical/administrative sessions per the Owner's preference.

END OF SECTION 27 4130

#### SECTION 28 1000

#### ACCESS CONTROL

#### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Access control system requirements.
- B. Access control units and software.
- C. Access control point peripherals, including readers.
- D. Accessories.

#### 1.02 RELATED REQUIREMENTS

- A. Division 07 Firestopping.
- B. Division 08 Door Hardware: Electrically operated door hardware, for interface with access control system.
  - 1. Includes door hardware with integral request to exit devices.
- C. Division 26 Grounding and Bonding for Electrical Systems.
- D. Division 26 Conduit for Electrical Systems.
- E. Division 26 Identification for Electrical Systems: Identification products and requirements.
- F. Division 27 Structured Cabling: Data cables for access control system IP network connections.
- G. Division 28 Video Surveillance: For interface with access control system.
- H. Division 28 Fire Detection and Alarm: For interface with access control system.

#### **1.03 REFERENCE STANDARDS**

- A. NECA 1 Standard for Good Workmanship in Electrical Construction 2015.
- B. NFPA 70 National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. NFPA 101 Life Safety Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. UL 294 Access Control System Units Current Edition, Including All Revisions.
- E. UL 1076 Proprietary Burglar Alarm Units and Systems Current Edition, Including All Revisions.

#### **1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate the work with other installers to provide suitable door hardware as required for both access control functionality and code compliance.
  - 2. Coordinate the placement of readers with millwork, furniture, equipment, etc. installed under other sections or by others.
  - 3. Coordinate the work with other installers to provide power for equipment at required locations.

- 4. Notify Dewberry of any conflicts with or deviations from the contract documents. Obtain direction before proceeding with work.
- B. Preinstallation Meetings:
  - 1. Conduct meeting with facility representative to review reader and equipment locations.
  - 2. Conduct meeting with facility representatives and other related equipment manufacturers to discuss access control system interface requirements.

#### 1.05 SUBMITTALS

- A. See Division 01 Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Include plan views indicating locations of system components and proposed size, type, and routing of conduits and/or cables. Include elevations and details of proposed equipment arrangements. Include system interconnection schematic diagrams. Include requirements for interface with other systems.
- C. Product Data: Provide manufacturers' standard catalog pages and data sheets for each system component. Include ratings, configurations, standard wiring diagrams, dimensions, finishes, service condition requirements, and installed features.
- D. Design Data: Standby battery/UPS calculations.
- E. Certify that proposed system design and components meet or exceed specified requirements.
- F. Evidence of qualifications for installer.
- G. Evidence of qualifications for maintenance contractor (if different entity from installer).
- H. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and operation of product.
- I. Manufacturer's detailed field-testing procedures.
- J. Field quality control test reports.
- K. Maintenance contracts.
- L. Project Record Documents: Record actual locations of system components and installed wiring arrangements and routing.
- M. Operation and Maintenance Data: Include detailed information on system operation, equipment programming and setup, replacement parts, and recommended maintenance procedures and intervals.
  - 1. Include contact information for entity that will be providing contract maintenance and trouble call-back service.
- N. Warranty: Submit sample of manufacturer's warranty and documentation of final executed warranty completed in Owner's name and registered with manufacturer.
- O. Software: One copy of software not resident in read-only memory.
- P. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Division 01 Product Requirements, for additional provisions.
  - 2. Deliver blank credentials to Owner as directed.

#### 1.06 QUALITY ASSURANCE

- A. Comply with the following:
  - 1. NFPA 70.
  - 2. NFPA 101 (Life Safety Code).
  - 3. The requirements of the local Authorities Having Jurisdiction.
  - 4. Applicable TIA/EIA standards.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- D. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience with access control systems of similar size, type, and complexity and providing contract maintenance service as a regular part of their business; authorized manufacturer's representative.
  - 1. Contract maintenance office located within 100 miles of project site.
- E. Maintenance Contractor Qualifications: Same entity as installer.
- F. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.
- B. Store products in manufacturer's unopened packaging, keep dry and protect from damage until ready for installation.

#### 1.08 FIELD CONDITIONS

A. Maintain field conditions within manufacturer's required service conditions during and after installation.

#### 1.09 WARRANTY

- A. See Division 01 Closeout Submittals, for additional warranty requirements.
- B. Provide minimum two-year (24 month) manufacturer warranty covering repair or replacement due to defective materials or workmanship.

#### PART 2 PRODUCTS

#### 2.01 MANUFACTURERS

- A. Access Control System Acceptable Manufacturers:
  - 1. Basis of Design: Isonas
  - 2. <u>https://us.allegion.com/en/products/brands/isonas.html</u>

- B. Substitutions: Must be approved by Architect/Engineer a minimum of 7 days prior to bid date.
- C. Products other than those listed are subject to compliance with specified requirements and prior approval of Engineer. By using products other than those listed, Contractor accepts responsibility for costs associated with any necessary modifications to related work, including any design fees.
- D. Source Limitations: Where possible, furnish system components and accessories produced by a single manufacturer and obtained from a single supplier.

#### 2.02 ACCESS CONTROL SYSTEM REQUIREMENTS

- Provide new access control system consisting of all required equipment, conduit, junction boxes, wiring, connectors, reader credential hardware, cable supports, accessories, software, system programming, PoE switches, etc. as necessary for a complete operating system that provides the functional intent indicated.
- B. System Battery Backup: Provide batteries/uninterruptible power supplies (UPS) as required for a minimum 15 minutes of full operation.
- C. Surge Protection:
  - 1. Provide equipment power surge protection where electrical distribution system surge protection is not provided.
- D. Computers Required:
  - 1. See article "ACCESS CONTROL UNITS AND SOFTWARE" below for product descriptions.
  - 2. Server(s):
    - a. Quantity: One, or one network appliance per manufacturer system specifications.
    - b. Location(s): As directed by Owner, typically in the IT/Comm/Server room.
    - c. Peripherals required for each server:
      - 1) Mouse and keyboard.
      - 2) Monitor(s): One.
      - 3) Speakers (where not integral with monitor).
  - 3. Workstation Computer(s):
    - a. OFOI, contractor to provide licenses and installation for 2 OFOI workstations.
    - b. Location(s): by Owner.
  - 4. Contactless Credential Encoder:
    - a. Provide 1 credential encoder and connect to OFOI workstation as directed by Owner.
    - b. Specifications: Desk top encoder with dual color LEDs. Supports multiple access control formats and programming of hid or third-party credential cards. USB 2.0 host interface connectivity. Uses ISO14443A/B ISO15693 smart card technology.
    - PC driver support: compliant with native OS CCID drivers (in CCID mode). HID proprietary PC/SC. Drivers available for: Windows<sup>®</sup> XP / Vista / 7 (32 bit / 64 bit), 2003 Server, 2008 R2 Server, Linux<sup>®</sup> (32 / 64-bit, incl. Debian 6.0, Fedora 15, OpenSUSE 11.4, Ubuntu 11.04) & Mac<sup>®</sup> OS X (10.5 Leopard and higher, Intel 32 / 64 bit). Two-year warranty

- d. Basis of Design: HID CP1000 iCLASS SE Encoder or approved equal.
- E. Interface with Other Systems:
  - 1. Provide products compatible with other systems requiring interface with access control system.
  - 2. Interface with electrically operated door hardware as specified in Division 08.
    - a. Capable of locking/unlocking/releasing controlled doors.
    - b. Capable of receiving input from integral door hardware switches.
  - 3. Interface with video surveillance system as specified in Division 28.
    - a. Capable of affecting camera/video operation for selected access control system events.
  - 4. Interface with fire alarm system as specified in Division 28.
    - a. Capable of affecting access for designated doors for selected fire alarm system events.
- F. Provide products listed, classified, and labeled as suitable for the purpose intended.
  - 1. Access Control Units and Readers: Listed and labeled as complying with UL 294.

#### 2.03 ACCESS CONTROL UNITS AND SOFTWARE

- A. Provide access control units and associated software compatible with readers to be connected.
- B. Computers:
  - Workstation Computers: Unless otherwise indicated, workstation computer hardware and associated peripherals not furnished by access control system manufacturer to be provided by Contractor as part of work of this section, meeting access control system equipment manufacturer's recommended requirements.
  - 2. Servers: Unless otherwise indicated, server hardware and associated peripherals not furnished by access control system manufacturer to be provided by Contractor as part of work of this section, meeting access control system equipment manufacturer's recommended requirements.
- C. Software:
  - 1. Unless otherwise indicated, provide all software and licenses required for fully operational system.

#### 2.04 ACCESS CONTROL POINT PERIPHERALS

- A. Provide devices compatible with control units.
- B. Provide devices suitable for operation under the service conditions at the installed location.
- C. Provide readers compatible with credentials to be used.
- D. Reader Color: Mfg. standard color choice(s). Confirm color choice with Architect.
- E. Keypad Smart Card Readers:
  - 1. PoE (IEE 802.3af) and 12VDC
  - 2. Outputs: 8-wire pigtail
  - 3. Inputs: 2 configurable inputs; Door sense and Gen Purpose REX or AUX

- 4. Utilizes 13.56 MHz and 125kHZ RF communication with compatible credentials.
- 5. Supports Bluetooth Low Energy (BLE) to accommodate use of the PureMobile application in a smartphone device for credentials.
- 6. Utilizes 64bit authentication keys.
- 7. Supports ISO compliant credentials.
- 8. Supports data encryption.
- 9. Basis of Design: Isonas Pure IP Reader-Controller w/Keypad
- F. Door Position Switches:
  - 1. Magnetic Contacts: Encapsulated reed switch(es) and separate magnet; designed to monitor opened/closed position of doors. (Typically provided by division 08. Refer to access control schedule in T-sheets and Division 08.)
- G. Request to Exit Devices: (Typically provided by division 08. Refer to access control schedule in T-sheets and division 08.)
  - 1. Pushbuttons:
    - a. Basis of Design Product(s):
      - 1) Securitron EEB2.
  - 2. Motion Sensors: Passive infrared.
    - a. Basis of Design Product(s):
      - 1) Bosch DS160.
  - 3. Door Hardware with Integral Request to Exit Switches: Comply with Division 08. (Typically provided by division 08. refer to access control schedule in T-sheets and Division 08.)
- H. Door Locking Devices (Electric Strikes and Magnetic Locks): Comply with Division 08. (Typically provided by division 08. Refer to access control schedule in T-sheets and Division 08.)
- I. Alarm Sounders: (Typically provided by division 08. Refer to access control schedule in T-sheets and Division 08.)
  - 1. Minimum Sound Output: 85 db.

#### 2.05 ACCESS CONTROL CABLING AND WIRING

- A. Provide all required cabling and wiring for a complete system.
  - 1. Category 6 Twisted Pair Cable: Four-pair, balanced -twisted pair cable certified to meet transmission characteristics of Category 6 cable at frequencies up to 250 MHz.
  - 2. Basis of Design: Commscope Uniprise
    - a. Belden
    - b. Berk-Tek (Leviton)
    - c. General Cable (Prysmian)
    - d. Panduit
    - e. Superior-Essex

- 3. Standard: Comply with NEMA WC 66/ICEA S-116-732 and TIA-568-C.2 for Category 6 cables.
- 4. Conductors: 100-ohm, 23 AWG solid copper.
- 5. Cable Rating: Plenum (CMP).
- 6. Color: YELLOW
- B. Other multi-conductor, twisted pair cable for Door Contacts, REX (PIR's), etc.
  - 1. Belden
  - 2. Windy City Wire
  - 3. Approved equivalent

#### 2.06 ACCESSORIES

- A. Provide components as indicated or as required for connection of access control system to devices and other systems indicated.
- B. Unless otherwise indicated, credentials to be provided by Contractor.
  - 1. Provide credentials compatible with readers and control units/software to be used.
  - 2. Credential Type: 13.56 MHz, min 64-bit contactless, blank, printable on two sides.
    - a. Basis of Design Product(s):
      - 1) Hirsch uTrust series.
    - b. Quantity: 200
- C. Unless otherwise indicated, dedicated network switches required for access control connectivity shall be furnished and installed by Contractor.
- D. Provide cables as indicated or as required for connections between system components.
  - 1. Data Cables for IP Network Connections: Unshielded twisted pair (UTP), minimum Category 6, Color: yellow and complying with Section 271000.
  - 2. Patch cords: Cat6 UTP, lengths as required. Color: Yellow.
- E. Provide rack-mounted, UPS battery back-ups dedicated to the access control devices and switches. Provide UPS in each IT Server/Telecom room.
  - 1. Basis of Design: APC Smart-UPS SRT2200XLA
  - 2. Approved equivalents from Eaton, Middle-Atlantic and Vertiv
  - 3. Provide IP cards for remote monitoring on Owner's LAN.

#### PART 3 EXECUTION

#### 3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that ratings and configurations of system components are consistent with the indicated requirements.
- C. Verify that mounting surfaces are ready to receive system components.

- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to system.
- E. Verify that conditions are satisfactory for installation prior to starting work.

#### INSTALLATION

- F. Install access control system in accordance with NECA 1 (general workmanship).
- G. Install products in accordance with manufacturer's instructions.
- H. Wiring Method: Unless otherwise indicated, use wiring in conduit.
  - 1. Use suitable listed cables in wet locations, including underground raceways.
  - 2. Use suitable listed cables for vertical riser applications.
  - 3. Use listed plenum rated cables in spaces used for environmental air.
  - 4. Install wiring in conduit for the following:
    - a. Where required for rough-in.
    - b. Where required by authorities having jurisdiction.
    - c. Where exposed to damage.
    - d. Where installed outside the building.
    - e. For exposed connections from outlet boxes to devices.
  - 5. Conduit: Comply with Division 26.
  - 6. Conceal all cables unless specifically indicated to be exposed.
  - 7. Use power transfer hinges complying with Division 08 for concealed connections to door hardware.
  - 8. Cables in the following areas may be exposed, unless otherwise indicated:
    - a. Equipment closets.
    - b. Within joists in areas with no ceiling.
  - 9. Route exposed cables parallel or perpendicular to building structural members and surfaces.
  - 10. Do not exceed manufacturer's recommended maximum cable length between components.
- I. Provide grounding and bonding in accordance with Division 26.
- J. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Division 07.
- K. Identify system wiring and components in accordance with Division 26.

#### 3.02 FIELD QUALITY CONTROL

- A. See Division 01 Quality Requirements, for additional requirements.
- B. Provide services of a manufacturer's authorized representative to observe installation and assist in inspection and testing. Include manufacturer's detailed testing procedures and field reports with submittals.
- C. Prepare and start system in accordance with manufacturer's instructions.
- D. Program system parameters according to requirements of Owner.

- E. Test for proper interface with other systems.
- F. Correct defective work, adjust for proper operation, and retest until entire system complies with contract documents.
- G. Submit detailed reports indicating inspection and testing results and corrective actions taken.

#### 3.03 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

#### 3.04 CLOSEOUT ACTIVITIES

- A. See Division 01 Closeout Submittals, for closeout submittals.
- B. See Division 01 Demonstration and Training, for additional requirements.
- C. Demonstration:
  - 1. Provide a knowledgeable senior technician on site to demonstrate the system and assist the design engineer during punch list and final inspections.
  - 2. Demonstrate proper operation of system to Owner, correct deficiencies and adjust as directed.
- D. Training: Train Owner's personnel on operation, adjustment, and maintenance of system.
  - 1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
  - 2. PROVIDE 8 HOURS OF OWNER TRAINING, BROKEN INTO 4 EACH, SESSIONS ON NON-CONSECUTIVE DAYS, COORDINATED WITH THE OWNER'S SCHEDULE.
  - 3. Instructor: Manufacturer's authorized representative.
  - 4. Location: At project site.

#### 3.05 PROTECTION

A. Protect installed system components from subsequent construction operations.

#### 3.06 MAINTENANCE

- A. See Division 01 Execution and Closeout Requirements, for additional requirements relating to maintenance service.
- B. During the 2-year warranty period, conduct semi-annual site visits to perform inspection, testing, and preventive maintenance. Submit report to Owner indicating maintenance performed along with evaluations and recommendations.
- C. Provide trouble call-back service upon notification by Owner:
  - 1. During the 2-year warranty period, include allowance for call-back service during normal working hours at no extra cost to Owner.

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END OF SECTION 28 1000

#### PART 1 - GENERAL

#### 1.01 SUMMARY

#### A. Section Includes:

- 1. Video surveillance solution including:
  - a. Management platform
  - b. Edge-based video analytics
  - c. Indoor Dome Series cameras
  - d. Outdoor Dome Series cameras
  - e. Multi-sensor Series cameras
  - f. PoE Switches
  - g. Camera mounts, adapters, and accessories
  - h. Video storage server appliance (AKA: VMS Server, NVR Server)
- B. Related Sections
  - 1. 281000 Access Control

#### 1.02 REFERENCES

- A. Published specifications, standards, tests, Codes, or recommended standards of trade, industry, or governmental organizations apply to work in these Sections, including:
  - 1. ADA Americans with Disabilities Act
  - 2. ANSI American National Standards Institute
  - 3. ASCII American Standard Code for Information Interchange
  - 4. ASTM American Society for Testing and Materials
  - 5. IBC International Building Code
  - 6. IEEE Institute of Electrical and Electronics Engineers
  - 7. ISO/IEC International Organization for Standardization / International Electrotechnical Commission
  - 8. NEC National Electrical Code
  - 9. NEMA National Electrical Manufacturers' Association
  - 10. NFPA National Fire Protection Association
  - 11. TIA/EIA Telecommunications Industry Association / Electronic Industries Alliance
  - 12. UL Underwriters Laboratories, Inc.

#### 1.03 DEFINITIONS

- A. Abbreviations:
  - 1. ACS Access Control System
  - 2. API Application Programming Interface
  - 3. CCD Charge Coupled Device
  - 4. CCTV Closed Circuit Television
  - 5. CMOS Complementary Metal-Oxide Semiconductor
  - 6. DHCP Dynamic Host Configuration Protocol
  - 7. DNS Domain Name System
  - 8. DPDT Double pole, double throw
  - 9. FPS Frames Per Second
  - 10. IP Internet Protocol
  - 11. LAN Local Area Network
  - 12. LPR License Plate Recognition
  - 13. MFA Multi-Factor Authentication
  - 14. NFC Near Field Communications
  - 15. NVR Network Video Recorder
  - 16. ODBC Open Database Connectivity
  - 17. PoE Power Over Ethernet
  - 18. RAM Random Access Memory

- 19. SPDT Single pole, double throw
- 20. SSL Secure Sockets Layer
- 21. SSO Single sign-on
- 22. TCP Transport Control Protocol
- 23. UPS Uninterruptible Power Supply
- 24. VMS Video Management System
- 25. VsaaS Video Surveillance as a Service
- 26. WDR Wide Dynamic Range

#### 1.04 SYSTEM DESCRIPTION

- A. A video surveillance system with image processing on edge devices and physical server storage, archival and retrieval.
- B. Video Management Interface
  - 1. Access and management for all cameras and users across all sites. Management functions include:
    - a. Set up new cameras.
    - b. Create and manage sites.
    - c. Device installation:
      - i. Add devices without assigning a site or configuring the device upfront.
      - ii. New devices will be added to and "Unassigned Devices" list.
      - iii. Immediately check if device is online and see live data.
    - d. Manage camera device and system settings.
    - e. Access live and archived footage.
    - f. Manage users.
  - 2. Security and Permissions:
    - a. SAML/OAuth support for single sign-on
    - b. 2-factor authentication options
    - c. User permissions can be controlled at camera, site, and organization levels.
  - 3. Remote Access
    - a. Web app access.
    - b. Native apps for iOS, Android and Camera Station.
  - 4. Archiving and Sharing:
    - a. Export footage in MP4 format.
    - b. Create and share Live Links via text or email.
- C. Analytics:
  - 1. People Analytics:
    - a. Intelligent edge-based video processing to identify individuals in a scene.
    - b. Filter identified individuals by attributes, including:
      - i. Date
      - ii. Time
      - iii. Appearance
      - iv. Clothing color
      - v. Backpack detection
      - vi. Facial matches
  - 2. AI-Powered Search: Use freeform text queries to search for people and vehicles.
  - 3. Face Search: Quickly search for matching people by selecting an existing face from organizational records uploaded image.
  - 4. Masking
    - a. Selective masking of field of view area(s) to block portions of recorded image(s).
  - 5. Face Blur:
    - a. Live Face Blur:
      - i. Blur faces of individuals detected in camera live streams for privacy.

- ii. Admins can enable Live Face Blur by default for all cameras while also giving users the option to unblur faces in case of an incident.
- b. Selective Face Blur:
  - i. Choose which archived faces to blur to support the privacy of individuals stored in an archive.
- 6. Person History:
  - a. Browse through snapshots of people detected in frame.
  - b. Save snapshots or access associated full-resolution video.
- 7. Occupancy Trends:
  - a. Estimate how many people cross a designated line in a camera field of view.
- 8. Cross-Camera Tracking:
  - a. Search video from different cameras of the same identified individual.
- 9. Person Line Crossing: trigger an alarm if a person crosses a predetermined digital line in a specified direction.
- 10. Direction of Travel: trigger an alarm by specified direction of travel detection.
- 11. Person or Vehicle Loitering: trigger an alarm if a person or vehicle is continuously detected in a pre-selected region beyond a certain time threshold.
- 12. Person of Interest (POI) and License Plate of Interest (LPOI):
  - a. Receive real-time POI alerts on the live feed when viewing a single camera page.
  - b. POI alerts display associated LPOI and vice versa.
- D. Vehicle Analytics:
  - 1. Intelligent edge-based video processing to identify vehicles in a scene.
  - 2. Filter identified vehicles by attributes, including:
    - a. Date.
    - b. Time.
    - c. Vehicle make.
    - d. Color.
    - e. Vehicle body type.
  - 3. Vehicle History:
    - a. Browse through snapshots of vehicles detected in-frame.
    - b. Save snapshots or associated full-resolution video
  - 4. Cross-Camera Tracking:
    - a. Search video from different cameras of the same identified vehicle.
  - 5. Vehicle Number Tracking: draw a digital line on the video feed and get an estimate of how many vehicles crossed that line.
  - 6. Vehicle Line Crossing: trigger an alarm if a vehicle crosses a predetermined digital line in a specified direction.
  - 7. Vehicle Loitering: trigger an alarm if a vehicle is continuously detected in a pre-selected region beyond a certain time threshold.
- E. Unified Alerts:
  - 1. Set up and configure alerts for access control, cameras, alarms, and environmental sensors from the Alerts page in Command.
- F. Enhanced Sensor Alerts:
  - 1. All sensors paired with a context camera to display:
    - a. People detection thumbnails show all people detected before, during, and after a sensor alert.
    - b. People activity overlay on the sensor alert graph to mark people's activity.
- G. Shortcuts Navigation Tool:
  - 1. Available for both live streams and historic views:
    - a. Instantly jump between neighboring camera feeds to quickly track moving subjects during live investigations.
    - b. Trace a subject's movements from camera to camera to review and archive a subject's path in historic views.

- H. Adaptive Quality with Variable Bitrates: Cameras use variable bitrates for both SQ and HQ video allowing for video recording at a lower bitrate during less complex scenes and a higher bitrate during more complex scenes.
- I. PTZ Sentry Mode:
  - 1. Patrol multiple scenes when a live operator is not available.
  - 2. Select up to 25 preset views.
  - 3. Configure how long Sentry Mode dwells on each scene (30 seconds to 24 hours).
- J. Verify:
  - 1. Browser-based tool that allows anyone in possession of footage from a camera to verify its authenticity.
  - 2. Verify recorded footage by uploading the file.
- K. Enterprise Bandwidth Manager (EBM):
  - 1. Set bandwidth limits for all camera upload traffic, including video archiving, cloud backup, and timelapse.
  - 2. Monitor real-time bandwidth usage and selectively terminate active video streams to free up bandwidth.

#### 1.05 SUBMITTALS

- A. Provide the following submittals for review and approval:
  - 1. Product Data with complete Bill of Materials
  - 2. Shop Drawings
  - 3. System Programming
  - 4. Operation and Maintenance Manuals (O&M's)
  - 5. "As-Built" Record Drawings
- B. Submit Product Data and Shop Drawings submittals for review and approval prior to commencement of work:
  - 1. Manufacturer's name, brand name, exact part number, options, accessories, and catalog cutsheet references for all equipment supplied including cabling. Include manufacturer's published installation instructions. Indicate UL listings for system components.
  - Complete wiring diagrams for all components, including cable types and quantities, routings, floor plans indicating device locations, conduit sizes, and point-to-point termination and riser diagrams.
  - 3. Device legend on the shop drawings that identifies the symbols used for all devices including mounting heights, back box requirements, part and model numbers, operating voltages (if applicable), wire and cabling requirements, label text, and panel termination points.
  - 4. Fully dimensioned shop drawings including floorplans, enlarged plans, elevations, and installation details of all security devices, equipment rooms and closets, consoles, controllers, racks, enclosures, and fabricated equipment, showing locations of all major components including mounting details. Indicate UL system and rating listings for penetration firestop systems through rated partitions and floors.
  - 5. Bill of Materials.
  - 6. Material Safety Data Sheets (MSDS) for fire stopping materials and sealants.
- C. Submit System Programming submittals for review and approval prior to commencement of work:
  - 1. Proposed programming, including nomenclature conventions, device names and text descriptions, timings, camera call-up trigger alarms with associated cameras, and sequence of operations.
  - 2. Approved device names and text descriptions as programmed into the security systems shall be reflected on the "As-Built" Record Drawings as well as on device and cable labels.
- D. Submit Operation and Maintenance Manuals (O&M's) submittals for review and approval prior to the completion of the project:
  - 1. Updated product data and shop drawings submittals, which reflect the final conditions.
  - 2. Warranty letter with start and end date.

- 3. Warranty service and maintenance contact information: including names, address, phone number, and website address. Provide specific instructions or forms as required to initiate a trouble ticket or work order request.
- 4. Letter indicating that all software and licensing is the sole property of the Owner.
- 5. Troubleshooting checklist information.
- 6. Replacement parts and consumables ordering information including the contact information for local sources.
- 7. Provide an updated System Programming submittal including:
  - a. Final listing of doors, locations, and normal status in CSV format.
  - b. System administration and management operating instructions.
  - c. Setting up Users, User Groups, Access Levels, Doors, Door Schedules, and Exceptions
  - d. Assigning Access Groups to all Users.
  - e. Monitoring system activity.
  - f. Running standard reports.
  - g. Setting up logins and permissions.
- E. Submit "As-Built" Record Drawings submittals for review and approval prior to the completion of the project:
  - 1. Maintain a complete set of "As-Built" Record Drawings at the project site updated with markups of the actual installation conditions.
  - 2. Prior to the completion of the project transfer all installation conditions mark-ups to electronic drawings and submit to the Owner in CAD and PDF formats.

#### 1.06 QUALITY ASSURANCE

- A. Equipment shall be tested and found to comply with the limits for a Class A or B digital device, pursuant to part 15 of the FCC rules.
- B. Security technology devices shall be mounted using compatible mounts and accessories.
- C. Security technology devices shall be of the latest technology. No discontinued or end-of-life products are acceptable.
- D. Contractor qualifications:
  - 1. Minimum of Five years of system design, engineering supervision, and installation experience in the video surveillance industry.
  - 2. Maintain a local office within 200 miles of project location, with a service center staffed by trained technicians and adequately equipped to provide emergency phone service within 24 hours on a 24-hour, 365 days per year basis, whether or not the Owner purchases a maintenance contract with the Contractor.
  - 3. Maintain an inventory of spare parts and other items critical to system operation, as necessary to meet the emergency service requirements.
  - 4. Maintain an in-house engineering and project management capability consistent with the requirements of this project.
  - 5. Provide a project manager who is actively engaged in the project. This person shall be the same individual throughout the course of the project and shall be the person responsible for the scheduling of the system programming, preparation of the submittals and project close-out documentation, training programs, system testing and report documentation, and the coordination of all subcontract labor. The Owner reserves the right to approve the Contractor's project manager.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Ship equipment in original packaging to prevent damage. All handling shall be in accordance with manufacturer recommendations. Inspect all products and materials for any damage immediately upon delivery to the project site.
- B. Provide protective covering during construction.
- C. Replace equipment and products damaged during shipping, handling, distribution, storage, installation, or construction with new equipment and products.

D. Equipment and products stored at the project site or at an off-site location shall be protected from dust, dirt, and foreign matter. Protect equipment and products from water, damage, dents, bumps, and scratches.

#### 1.08 SCHEDULING

- A. Submit proposed construction schedule detailing the task milestones, durations, and sequences for the project for review and approval prior to commencement of work.
- B. When work is performed in a sensitive area or in an area occupied with ongoing business activities coordinate with the Owner and the affected department's representative to determine the best time to perform the work required.

#### 1.09 WARRANTY

- A. Provide two-year parts and labor project warranty. Parts and labor shall be guaranteed against defects in materials and workmanship for two years from written notification of acceptance.
- B. All hardware shall be backed by a minimum 5-year limited warranty.

#### PART 2 - PRODUCTS

#### 2.01 MANUFACTURER

- A. Basis of Design: Alibi Security.
  - 1. Website: <u>www.alibisecurity.com</u>
- B. Approved equivalents:
  - 1. Alibi Security is the Owner's standard for video surveillance hardware across all municipal sites and facilities. As such, no substitutes will be approved.

#### 2.02 LICENSING

- A. Provide all required licenses for the specified system components.
- B. All system component, server, device and software licenses shall be 3-year licenses.

#### 2.03 INDOOR/OUTDOOR DOME CAMERAS

- A. Alibi Security ALI-PD42-VUZAI, 4MP with AI Analytics, WDR, Optimized IR and 2.7~13.5mm Focal Length Image Sensor.
- B. Alibi Security ALI-FD20-VAW, 2MP with AI Analytics, WDR, Optimized IR and 2.9mm Focal Length Image Sensor.

#### 2.04 INDOOR/OUTDOOR 360 DEGREE CAMERA

A. Alibi Security ALI-PF51-VA-D, 5MP with IR, AI Analytics, Optimized IR, WDR, 1.4mm Focal Length Image Sensor.

#### 2.05 INDOOR/OUTDOOR 180 DEGREE CAMERA

A. Alibi Security ALI-PF80-VLUAI, 8MP with IR, AI Analytics, WDR, Optimized IR and 4mm Panoramic Focal Length Image Sensors.

#### 2.06 VIEWING/MONITORING WORKSTATION

A. PC workstation with keyboard, mouse and display(s) will be Owner-furnished, Owner-installed (OFOI).

#### 2.07 VMS SERVER

- A. Specifications
  - 1. 1 RU and 2RU rack mounting
  - 2. Windows 10 IoT Enterprise OS
  - 3. Support Windows Server 2016 and 2019.
  - 4. 16 GB DDR4 RAM
  - 5. RAID controller and configuration
  - 6. Storage: Up to 64 TB
  - 7. HDD connectivity: SATA3
  - 8. Max HDD capacity: 4 x 3.5" hot swappable

- 9. Maximum IP Camera Channels: 50
- Video throughput: up to 360 Mbps, based on 1080p video stream @ 30 FPS, 5-8 Mbps, per channel
- 11. Power Supply: Dual 450W, 94% efficient, hot plug redundant, 1725 BTU/h (max. theoretical)
- B. Acceptable Manufacturers
  - 1. Milestone Husky IVO series
  - 2. Axis
  - 3. Genetec
  - 4. Hanwha
- C. Provide necessary licensing/licenses for a complete system.
- D. Provide storage for the quantity of project cameras, based on all cameras at minimum 8 FPS, full resolution, for 45 days (while recording on motion plus 15 seconds) based on manufacturer's standard compression, plus 25% overhead.
- E. Coordinate installation with Owner's IT staff.

#### 2.08 POE SWITCHES

- A. Cisco Catalyst 9300 Series, 24 and 48 port, 60W with dual power supplies, 1G and 10G fiber uplink SFP options. Provide 3-year license(s) as required.
- B. Approved equivalents:
  - 1. HP/Aruba
  - 2. Netgear

#### 2.09 ACCESSORIES

- A. Provide all camera mounts as required, which may include pole, corner and wall mounts.
  - 1. ALI-UP06-B-IN Pole Mount for Bullet Cameras
  - 2. ALI-UP06-C-IN Pole Mount for Bullet Cameras
  - 3. ALI-UC08-C Corner Mount for Dome Cameras
  - 4. ALI-A01-IN Junction Box Waterproof Cable Gland Joint
  - 5. ALI-JB06-A-IN Junction Box for Bullet Cameras
  - 6. ALI-JB07-D-IN Junction Box for Bullet Cameras
- B. Provide Cat6/75V PoE surge protection for all exterior cameras.
  - 1. ITW Linx CAT6-75/POE RJ45
  - 2. Ditek
  - 3. approved equivalent.

#### PART 3 - EXECUTION

#### 3.01 INSTALLERS

A. Installation shall be performed by manufacturer-certified technicians.

#### 3.02 EXAMINATION

- A. Installation surfaces shall be clean and free from dust, dirt, and obstructions.
- B. Examine pathway elements intended for cables. Check raceways, cable trays, and other elements for compliance with space allocations, installation tolerances, hazards to cable installation, and other conditions affecting installation.
- C. Examine rough-in for LAN and control cable conduit systems to server, PCs, controllers, cameras, and other cable-connected devices to verify actual locations of conduit and back boxes before device installation.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.03 PREPARATION

- A. Pre-Installation Conference: Prior to installation arrange conference between supplier, Owner, and related trades to review materials, procedures, and coordinating related work.
- B. Furnish or coordinate any inserts required for building into concrete, masonry, and other work, to support and attach work of this Section. Furnish or coordinate in ample time to comply with schedule of work into which inserts are built.
- C. Verify that power and outlets are in correct locations.
- D. Verify that building structure is properly prepared for mounting, attachment, and support of equipment.
- Prior to installation of systems components and devices, verify all required preparations have been properly performed and that substrates are acceptable for installation.
   Verify all rough instand field dimensions.
  - 1. Verify all rough-ins and field dimensions.
- F. Report in writing to the Owner's representative any prevailing conditions that will adversely affect satisfactory execution of work in this Section.
  - 1. Owner or their representative reserves the right to review proposed construction methods, reject proposed methods, and have the installation done in a satisfactory method at the Contractor's cost.

#### 3.04 INSTALLATION

- A. Sequencing: The work shall be performed in the following sequence, unless directed otherwise by Owner or their representative:
  - 1. Installation of cables and network.
  - 2. Installation of new cameras.
  - 3. Installation of front-end equipment.
  - 4. Commissioning of the new system components.
  - 5. End User training
- B. Provide configuration and integration of video surveillance system with Access Control, Section 281000.
- C. Install work in accordance with manufacturer's recommendations and instructions as well as final shop drawings. All components should be installed so as to allow easy access for service in the future.
- D. Anchor components securely in place, plumb, level, and accurately aligned.
- E. For solution products located in equipment traffic areas, and that are exposed to damage due to collision or impact from forklifts, or manually moved carts, carriers, or other equipment used by the Owner, provide protective bollards, railings, coverings etc. to ensure that all products installed are properly protected from such damage.
- F. Provide fastenings, plates, and other incidental items required for complete and operational installation.
- G. Provide required electrical work in accordance with Code requirements.
- H. Security and protection:
  - 1. Maintain strict security during the installation of equipment and software. Rooms housing the control station, and workstations that have been powered up shall be locked and secured during periods when a qualified operator in the employ of Contractor is not present.
  - 2. Equipment protection: Provide protective covers, fenders, and barriers as necessary to maintain work of this Section in same condition as installed until time of substantial completion.
- I. Cable requirements:
  - 1. Cat6A, twisted, shielded, plenum-rated type cable shall be used.
  - 2. All exposed cables shall be in rigid conduit, electrical metallic tubing (EMT) raceway, or wire mold as approved by the Owner.
  - 3. All concealed cables routed in j-hook pathways shall be fastened to the structure at least every four feet.

#### 3.05 LABELING

- A. Equipment and product labels shall be printed on self-adhesive labels. Handwritten labels or writing directly on the equipment enclosures is not acceptable.
- B. Label equipment and products with the device address as programmed into the security systems and as reflected on the "As-Built" Record Drawings.
- C. Label networked equipment enclosures with the IP address.
- D. Cables shall be individually labeled at origin and termination.

#### 3.06 PROGRAMMING

- A. Contractor will coordinate with the Owner to ensure that new components have appropriate network connections.
- B. Coordinate with the Owner to ensure that new components will be properly programmed into the system.
- C. Change default passwords to new custom secure passwords as directed by the Owner.

#### 3.07 ACCEPTANCE TESTING

- A. Final Test and Acceptance Plan
  - 1. Develop a final test and acceptance plan to identify each new system component, intent of test, test method, and expected results.
  - 2. Each component listed in the plan shall include space for test part signatures, brief comments, time of test and pass/fail check boxes.
  - 3. Test all equipment, products, and devices in accordance with the plan to ensure completely operational and fully functional security systems. Submit a written final test and acceptance report for review and approval.
  - 4. The report shall be submitted to the Owner's representative at least 30 days prior to the scheduled system acceptance test.
  - 5. System acceptance of the access control system shall be conditioned upon successful completion and operational demonstration of all system functions and components as documented in the final test and acceptance report.
- B. System Acceptance
  - 1. System acceptance shall not occur until after the following activities have been successfully completed:
    - a. Correction of all deficiencies and punch list items noted on the final test and acceptance report.
    - b. Acceptance of final test and acceptance report.
    - c. Acceptance of all project close-out submittals.
    - d. Delivery of final project close-out documentation.
    - e. Successful training and demonstration, including operation of systems, systems administration, and system management.
    - f. Successful purge of Contractor user privileges (temp logins and passwords) and return of all physical credentials.

#### 3.08 OWNER PERSONNEL TRAINING

- A. On-site operator training:
  - 1. Instruct operating staff in proper operation, including hands-on training.
  - 2. Minimum of four, two-hour, non-concurrent sessions covering the operations for each system installed. Coordinate training schedule based on Owner's availability.
  - 3. Training sessions shall be provided to supervisors, end-user staff, security staff, maintenance personnel, IT personnel, and any other personnel designated by the Owner.
  - 4. Provide training sessions during normal business hours excluding publicly observed holidays.

- B. On-site administrator training:
  - 1. Instruct security system administrators for each system installed, including hands-on training.
  - 2. Minimum of four, two-hour sessions covering the administration of each system installed.
- C. All training shall cover all administrative and management functions, including features and controls, for each system.
- D. Training shall be performed on site and on the system that is installed.

END OF SECTION 28 2000

# GADSDEN CITY HALL

# **100% CONSTRUCTION DOCUMENTS** 11-25-2024 PROJECT NO:

# 23-083

DESIGN TEAM INFORMATION

ARCHITECT:

CIVIL ENGINEER:

LANDSCAPE ARCHITECT:

STRUCTURAL ENGINEER:

MECHANICAL/ P/ FP/ ELECT ENGINEER:

WILLIAMS BLACKSTOCK ARCHITECTS 2204 Ist AVENUE SOUTH, SUITE 200 BIRMINGHAM, AL 35233

CDG Engineering 224 Broad Street, Suite 201 GADSDEN, AL 35901

Johnson & Co. 2413 2nd Ave. South BIRMINGHAM, AL 35233

Structural Design Group 300 Chase Park S #125, HOOVER, AL 35244

Dewberry 2 Riverchase Office Plaza Suite 205 BIRMINGHAM, AL 35244

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12_TECH T-001 T-003 T-004 T-005 T-006 T-007 T-100 T-101 T-200 T-201 T-202 T-203 T-300 T-301 T-302 T-303 T-304 T-400	CHNOLOGYTECHNOLOGY - LEGEND AND NOTESTECHNOLOGY - SCHEDULES AND NOTESTECHNOLOGY - DETAILSTECHNOLOGY - DETAILSTECHNOLOGY - DETAILSTECHNOLOGY - DETAILSTECHNOLOGY - ACS SCHEDULES AND NOTESTECHNOLOGY - CAMERA SCHEDULETECHNOLOGY - SITE PLAN - DEMOLITIONTECHNOLOGY - SITE PLAN - DEMOLITION PLAN - CITY HALLTECHNOLOGY - SITE PLANTECHNOLOGY - SITE PLANTECHNOLOGY - SITE PLANTECHNOLOGY - SITE PLAN - DEMOLITION PLAN - CITY HALLTECHNOLOGY - SITE PLANTECHNOLOGY - TELECOM - SITE FLOOR PLAN - CITY HALLTECHNOLOGY - TELECOM - SITE FLOOR PLAN - CITY COUNCILTECHNOLOGY - TELECOM - SITE FLOOR PLAN - CITY COUNCILTECHNOLOGY - TELECOM - SITE FLOOR PLAN - CITY COUNCILTECHNOLOGY - TELECOM - SITE FLOOR PLAN - CITY COUNCILTECHNOLOGY - TELECOM - SITE FLOOR PLAN - CITY COUNCILTECHNOLOGY - TELECOM - SITE FLOOR PLAN - CITY COUNCILTECHNOLOGY - COMMUNICATION - IST & SUD FLOOR PLAN - CITY HALL
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FIRE PROTECTION - 2ND FLOOR PLAN - CITY COUNCIL

ELECTRICAL LEGEND AND NOTES

ELECTRICAL FIRE ALARM DETAILS

ELECTRICAL DETAILS

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CHAPTER 3	USE AND OCCUPANCY CLASS	SIFICATION				
	NONSEPARATED AND ACCESSORY	BUSINESS (B) 304.1 BUSINESS GROUP B	L			
		BUSINESS GROUP B OCCU PROFESSIONAL OR SERVIC	PANCY INCLUDES AMONG OTHERS, E TYPE TRANSACTIONS, INCLUDING	THE USE OF A BUILDING OR STRUCTURE, STORAGE OF RECORDS AND ACCOUNTS	OR A PORTION THEREOF, FO	
		ASSEMBLY GROUP (A-3) 303.1 ASSEMBLY GROUP	Δ.			
		ASSEMBLY GROUP A OCCU FOR PURPOSES SUCH AS C	JPANCY, AMONG OTHERS, THE USE CIVIC, SOCIAL OR RELIGIOUS FUNCTION	OF A BUILDING OR STRUCTURE, OR A PO DNS; RECREATION, FOOD OR DRINK CON	RTION THEREOF, FOR THE GA	
		STORAGE (S-1) 311 2 MODERATE-HAZAR				
		STORAGE GROUP S-1 OCC	UPANCIES ARE BUILDINGS OCCUPIE	D FOR STORAGE USES THAT ARE NOT CL/ CKS	ASSIFIED AS GROUP S-2, INCL	
CHAPTER 5	GENERAL BUILDING HEIGHT	S AND AREAS				
	BUSINESS (B): THE AREA INCLUDED WI	THIN SURROUNDING EXTERIO	DR WALLS EXCLUSIVE OF VENT SHAF	TS AND COURTS. AREAS OF THE BUILDIN	G NOT PROVIDED WITHIN SL	
	SHALL BE INCLUDED IN THE BUILDING	AREA SF SUCH AREAS ARE ING	CLUDED WITHIN THE HORIZONTAL P	ROJECTION OF THE ROOF.		
	TABLE 504.3 AND 504.4					
	ALLOWABLE BUILDING HEIGHT AND ST CONSTRUCTION TYPE IIB (SPRINKLEREE	ORIES 75 FEET		4 STORIES (B) 3 STORIES (A-3)		
	BUILDING HEIGHT: THE VERTICAL DIST	ANCE FROM GRADE PLANE TO	) THE AVERAGE HEIGHT OF THE HIG	HEST ROOF SURFACE		
	ACTUAL BUILDING HEIGHT	55 FEET		3 STORIES		
	TABLE 506.2		CLASSIFICATION	ACTUAL AREA	ALLOWABLI	
	FLOOR AREA ALLOWED CONSTRUCTIO	N TYPE IIB (SPRINKLERED)	В	52,464 SF	120,750 SF (69,	
	FLOOR AREA ALLOWED CONSTRUCTIO	N TYPE IIB (SPRINKLERED)	A-3	3,074 SF	49,875 SF (28,	
	*506.3 FRONTAGE INCREASE.	· · · ·				
	PERCENTAGE OF BUILDING PERIMETER OPEN SPACE:	t: 75 TO 100 30 OR GREATER = 0.7	5			
	508 MIXED USE AND OCCUPA	ANCY				
	508.3 NONSEPARATED OCCUPANCIES					
	508.3.1 OCCUPANCY CLASSIFICATION. TO EACH PORTION OF THE BUILDING B	NONSEPARATED OCCUPANCI ASED ON THE OCCUPANCY CI	ES SHALL BE INDIVIDUALLY CLASSIFI ASSIFICATION OF THAT SPACE. IN A	ED IN ACCORDANCE WITH SECTION 302. DDITION, THE MOST RESTRICTIVE PROVI	1. THE REQUIREMENTS OF T SIONS OF CHAPTER 9 THAT /	
	NONSEPARATED OCCUPANCIES SHALL 508.3.2. ALLOWABLE BUILDING AREA,	APPLY TO THE TOTAL NONSE HEIGHT AND NUMBER OF STO	PARATED OCCUPANCY AREA. DRIES.			
	THE ALLOWABLE BUILDING AREA, HEIG	GHT AND NUMBER OF STORIE	S OF THE BUILDING OR PORTION TH	EREOF SHALL BE BASED ON THE MOST R	ESTRICTIVE ALLOWANCES.	
CHAPTER 6	TYPES OF CONSTRUCTION					
	TABLE 601	TYPE IIB CONSTRU	CTION			
	FIRE RESISTANCE RATINGS STRUCTURAL FRAME				0 HOUR	
	EXTERIOR BEARING WALLS				0 HOUR 0 HOUR	
	NON-BEARING EXT. WALLS AND PARTI NON-BEARING INT. WALLS AND PARTI	tions fions			0 HOUR 1	
	FLOOR CONSTRUCTION ROOF CONSTRUCTION					
	TABLE 602	TYPE IIB CONSTRUC	TION			
	FIRE SEPARATION DISTANCE AT ALL PE	RIMETER WALLS OF GREATER	THAN 30 FEET (SITE PLAN) 0 HOURS	OF FIRE RESISTANCE IS REQUIRED. FOR	EXTERIOR WALL ADJACENT	
	BUILDING WHERE FIRE SEPARATION DI	STANCE IS LESS THAN 30 FEE	r (SITE PLAN) 1 HOUR FIRE RESISTAN	CE IS REQUIRED.		
CHAPTER 7	FIRE RESISTANCE RATED CO	NSTRUCTION				
	705 EXTERIOR WALLS					
	705.2.1 - TYPE IIB CONSTRUCTION-					
	705.3 - BLULDINGS ON THE SAME LOT-		BE NUNCOMBOSTIBLE MATERIALS	JR COMBOSTIBLE MATERIALS AS ALLOW	ED BY SECTIONS 1400.3 AND	
	WHERE A NEW BUILDING IS TO BE ERE	CTED ON THE SAME LOT AS A	N EXISTING BUILDING, THE LOCATIC	N OF THE ASSUMED IMAGINARY LINE W	ITH RELATION TO THE EXIST	
	EXCEPTIONS: 1. TWO OR MORE BUILDINGS ON THE S	SAME LOT SHALL BE EITHER R	EGULATED AS SEPARATE BUILDINGS	OR SHALL BE CONSIDERED AS PORTIONS	S OF ONE BUILDING IF THE A	
	SUCH BUILDINGS IS WITHIN THE LIMIT	S SPECIFIED IN CHAPTER 5 FO	R A SINGLE BUILDING.			
	705.5 - FIRE RESISTANCE RATINGS EXTERIOR WALLS SHALL BE FIRE RESIST	ANCE RATED IN ACCORDANC	E WITH TABLES 601 AND 602 AND T	HIS SECTION. THE REQUIRED FIRE-RESIS	TANCE RATING OF EXTERIOF	
	SEPARATION DISTANCE OF GRATER TH SEPARATION DISTANCE OF LESS THAN	AN 10 FEET SHALL BE RATED OR EQUAL TO 10 FEET SHALL	FOR EXPOSURE TO FIRE FROM THE II BE RATED FOR EXPOSURE TO FIRE F	NSIDE. THE REQUIRED FIRE-RESISTANCE I	RATING OF EXTERIOR WALLS	
	705.8.2 - PROTECTED OPENINGS					
	WHERE OPENINGS ARE REQUIRED TO E	BE PROTECTED , FIRE DOORS /	AND FIRE SHUTTERS SHALL COMPLY	WITH SECTION 716.5		
	705.11 - PARAPETS PARAPETS SHALL BE PROVIDED ON EXT	ERIOR WALLS OF BUILDINGS				
	EXCEPTIONS: A PARAPET NEED NOT BE 1 THE WALL IS NOT REQUIRED TO BE	PROVIDED ON AN EXTERIOR FIRE-RESISTANCE RATED IN A	WALL WHERE ANY OF THE FOLLOW	ING CONDITIONS EXIST: USE OF FIRE SEPARATION DISTANCE.		
	705.11.1 - PARAPET CONSTRUCTION THE HEIGHT OF THE PARAPET SHALL BI	E NOT LESS THAN 30 INCHES /	ABOVE THE POINT WHERE THE ROOF	SURFACE AND THE WALL INTERSECT.		
	707 FIRE BARRIERS					
	707 3 10 - FIDE ADEAS					
	707.3.10 - FIRE AREAS THE FIRE BARRIERS OR HORIZONTAL ASSEMBLIES, OR BOTH, SEPARATING A SINGLE OCCUPANCY INTO DIFFERENT FIRE AREAS SHALL HAVE A FIRE-RESISTANCE RATING OF NOT INDICATED IN TABLE 707.3.10 GROUP B OCCUPANCY HAS A FIRE-RESISTANCE RATING OF 2HRS (PER TABLE 707.3.10)					
				, 0, .3.10]		
	WHERE EXTERIOR WALLS	ART OF A REQUIRED FIRE-RES	SISTANCE-RATEDSEPARATION, SUC	H WALLS SHALL COMPLY WITH THE REQ	UIREMENTS OF SECTION 70!	
	AND THE FIKE-KESISTANCE-RATEDSE	raration kequirements si	TALL NUT APPLY.			
	707.5 - CONTINUITY FIRE BARRIERS SHALL EXTEND FROM T	HE TOP OF THE FOUNDATION	OR FLOOR/CEILING ASSEMBLY BELC	OW TO THE UNDER-SIDE OF THE FLOOR C	DR ROOF SHEATHING, SLAB (	
	SHALL BE SECURELY ATTACHED THERE	TO. SUCH FIRE BARRIERS SHA SECTIONS 707.8 AND 707.9	LL BE CONTINUOUS THROUGH CONG	EALED SPACE, SUCH AS THE SPACE ABO	VE A SUSPENDED CEILING. JC	
	OPENINGS IN A FIRE BARRIER SHALL BE		E WITH SECTION 716. OPENINGS SHA	ALL BE LIMITED TO A MAXIMUM AGGRE	GATE WIDTH OF 25 PERCENT	
		SHAGE OF LIVING SHALL N				
				RS WITH UNDERSIDE OF A FIRE-RESISTA	NCE-RATED FLOOR OR ROOI	
		INTERSECTION SH	ALL CONTELT WITH SECTION /15.			
	707.9 - VOIDS AT INTERSECTIONS THE VOIDS CREATED AT THE INTERSEC	TION OF A FIRE BARRIER AND	A NONFIRE-RESISTANCE-RATED ROO	DF ASSEMBLY OR A NONFIRE-RESISTANC		
	FILLED. AN APPROVED MATERIAL OR S DISLODGE, LOOSEN OR OTHERWISE IM	IPAIR ITS ABILITY TO ACCOM	L THE VOID, AND SHALL BE SECUREI NODATE EXPECTED BUILDING MOVE	T INSTALLED IN OR ON THE INTERSECTION MENTS AND TO RETARD THE PASSAGE O	איז אינא אוז ENTIRE LENGTH S F FIRE AND HOT GASES.	
	708 FIRF PARTITIONS					
	708 1 - GENIFRAL-					
		E FOLLOWING LOCATIONS - (	CORRIDOR WALLS AT VESTIBULE AND	DLOBBY. PER TABLE 1020.1, THESE WAL	LS ARE NOT REQUIRED TO B	
	722 CALCULATED FIRE RESIST	ANCE				
	TABLE 721.1(2) - RATED FIRE-RESISTAN		ALLS AND PARTITIONS-			
	EXISTING EXTERIOR WALL ADJACENT T NEEDS A MINIMUM THICKNESS OF 3.2	UTHE NEW BUILDING CONST TO BE RATED 2HRS. THE EX	KUCTION IS CONSTRUCTED OF 8" W ISTING WALL USES 8' THICK CMU, IN	ADDITION TO CLAY BRICK FACA	ADE. ACCORDING TO TABLE HE CALCULATED FIRE RESIST	
CHAPTER 8	INTERIOR FINISHES					
				R ASTM E 84 OR UL 723		
	TABLE 803.11 - SPRINKLERED - INTERIC	IR WALLAND CEILING FINISH	REQUIREMENTS BY OCCUPANCY PEI	ROOMS & ENCLOSED SPACES		
	IABLE 803.11 - SPRINKLERED - INTERIC       GROUP       B       B	LOSURES	REQUIREMENTS BY OCCUPANCY PEI CORRIDORS C	C		
	GROUP     EXIT ENC       B     B       806     DECORATIVE MATERIALS	AND TRIM	C	C		
	IABLE 803.11 - SPRINKLERED - INTERIC <u>GROUP</u> <u>EXIT ENC</u> B       B         806       DECORATIVE MATERIALS         806.2 NONCOMBUSTIBLE MATERIALS -	AND TRIM	C C C C DF NONCOMBUSTIBLE MATERIALS S	C HALL NOT BE LIMITED.		
APTER 9	IABLE 803.11 - SPRINKLERED - INTERIC         GROUP       EXIT ENC         B       B         806       DECORATIVE MATERIALS         806.2 NONCOMBUSTIBLE MATERIALS -         FIRE PROTECTION SYSTEMS	AND TRIM	CORRIDORS C	HALL NOT BE LIMITED.		
APTER 9	TABLE 803.11 - SPRINKLERED - INTERIC         GROUP       EXIT ENC         B       B         806       DECORATIVE MATERIALS         806.2 NONCOMBUSTIBLE MATERIALS -         FIRE PROTECTION SYSTEMS         903.3.1.1 PROVIDE NFPA 13 SPRINKLEF	AND TRIM THE PERMISSIBLE AMOUNT	CORRIDORS C C DF NONCOMBUSTIBLE MATERIALS S	C HALL NOT BE LIMITED.		
APTER 9	TABLE 803.11 - SPRINKLERED - INTERIC         GROUP       EXIT ENC         B       B         806       DECORATIVE MATERIALS         806.2 NONCOMBUSTIBLE MATERIALS       -         FIRE PROTECTION SYSTEMS       903.3.1.1 PROVIDE NFPA 13 SPRINKLEF         903.4 SPRINKLER SYSTEM MONITORING	AND TRIM THE PERMISSIBLE AMOUNT SYSTEM AT NEW BUILDING A G & ALARMS - SUPERVISORY S	CORRIDORS C DF NONCOMBUSTIBLE MATERIALS S AREA.	HALL NOT BE LIMITED.	4	

	CHAPTER 10	MEANS OF EGRESS
		1004       OCCUPANT LOAD         TABLE 1004.5 - MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT:       SEE OCCUPANT LOAD SUMMARY TABLE ON SHEET LS102
	_	1005 MEANS OF EGRESS SIZING
		1005.7.1 DOORS - DOORS, WHEN FULLY OPENED SHALL NOT REDUCE THE REQUIRED WIDTH BY MORE THAN 7 INCHES. DOORS IN ANY POSITION SHALL NOT REDUCE WIDTH BY MORE TO ONE-HALF
FOR OFFICE,		1006 NUMBER OF EXITS AND EXIT ACCESS DOORWAYS
GATHERING OF PERSONS TRANSPORT.		1006.1 GENERAL - THE NOMBER OF EXITS OR EXIT ACCESS DOORWATS REQUIRED WITHIN THE MEANS OF EGRESS STSTEM SHALL COMPLY WITH THE PROVISIONS OF SECTION 1006.2 A         1006.3 FOR STORIES.         TABLE 1006.2.1 FOR COMMON PATH OR TRAVEL DISTANCES: BUSINESS = 100FT, ASSEMBLY = 75FT         1007       EXIT AND EXIT ACCESS DOOR CONFIGURATION
CLUDING BUT NOT		1007.1.1 - TWO EXITS OR EXIT ACCESS DOORWAYS EXC 2. WHERE A BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1 OR 903.3.1.2 THE SEPARATION DISTANCE S LESS THAN ONE-THIRD OF THE LENGTH OF THE MAXIMUM OVERALL DIAGONAL DIMENSION OF THE AREA SERVED.
SURROUNDING WALLS		1009       ACCESSIBLE MEANS OF EGRESS         1009.1 - ACCESSIBLE MEANS OF EGRESS REQUIRED         ACCESSIBLE MEANS OF EGRESS SHALL COMPLY WITH THIS SECTION. ACCESSIBLE SPACES SHALL BE PROVIDED WITH NOT LESS THAN ONE ACCESSIBLE MEANS OF EGRESS. WHERE MORE         MEANS OF EGRESS ARE REQUIRED BY SECTION 1006.2 OR 1006.3 FROM ANY ACCESSIBLE SPACE, EACH ACCESSIBLE PORTION OF THE SPACE SHALL BE SERVED BY NOT LESS THAN TWO A         MEANS OF EGRESS.
		1009.7 - EXTERIOR AREAS FOR ASSISTED RESCUE EXTERIOR AREAS FOR ASSISTED RESCUE SHALL BE ACCESSED BY AN ACCESSIBLE ROUTE FROM THE AREA SERVED. WHERE THE EXIT DISCHARGE DOES NOT INCLUDE AN ACCESSIBLE ROU EXIT LOCATED ON THE LEVEL OF EXIT DISCHARGE TO A PUBLIC WAY, AN EXTERIOR AREA OF ASSISTED RESCUE SHALL BE PROVIDED ON THE EXTERIOR LANDING IN ACCORDANCE WITH 1009.7.1 THROUGH 1009.7.4.1010DOORS, GATES, AND TURNSTILES
BLE AREA 59,000 SF*)		1010.1.2 - DOOR SWING - DOORS SHALL SWING IN THE DIRECTION OF EGRESS TRAVEL WHEN SERVING AN OCCUPANT LOAD OF 50 OR MORE.
8,500 SF*)		1011       STAINWATS         1011.2 STAINWATS         1011.2 STAINWATS         1011.2 STAINWAY WIDTH AND CAPACITY (EXC 1) STAINWAYS SERVING AN OCCUPANT LOAD OF LESS THAN 50 SHALL HAVE A WIDTH OF NOT LESS THAN 36 INCHES         1017       EXIT ACCESS TRAVEL DISTANCE         BUSINESS = 300 FT, ASSEMBLY = 250 FT
	-	1026 HORIZONTAL EXITS
THIS CODE SHALL APPLY F APPLY TO THE		1026.2 - SEPARATION THE SEPARATION BETWEEN BUILDINGS OR REFUGE AREAS CONNECTED BY A HORIZONTAL EXIT SHALL BE PROVIDED BYA FIRE BARRIER COMPLYING WITH SECTION 707THE MINIMU RESISTANCE RATING OF THE SEPARATION SHALL BE 2 HOURS. OPENING PROTECTIVE IN HORIZONTAL EXITS SHALL ALSO COMPLY WITH SECTION 716. DUCT AND AIR TRANSFER OPENIN AFIRE BARRIER THAT SERVES AS A HORIZONTAL EXIT SHALL ALSO COMPLY WITH SECTION 717. EXCEPTION: HORIZONTAL EXITS CONSTRUCTED AS FIRE BARRIERS SHALL BE CONTINUOUS FROM EXTERIOR WALL TO EXTERIOR WALL SO AS TO DIVIDE COMPLETELY THE FLOOR SERVED HORIZONTAL EXIT.
		1028     EXIT DISCHARGE       1028.1 - GENERAL
	CHAPTER 11	EXC 3 HORIZONTAL EXITS COMPLYING WITH SECTION 1026 SHALL NOT BE REQUIRED TO DISCHARGE DIRECTLY TO THE EXTERIOR OF THE BUILDING.         ACCESSIBILITY         1104       ACCESSIBLE ROUTE
	-	1104.3 - CONNECTED SPACES EXC 1 - WHEN A BUILDING PORTION OF A BUILDING IS REQUIRED TO BE ACCESSIBLE, AT LEAST ONE ACCESSIBLE ROUTE SHALL BE PROVIDED TO EACH POR BUILDING, TO ACCESSIBLE BUILDING ENTRANCES CONNECTING ACCESSIBLE PEDESTRIAN WALKWAYS AND TO THE PUBLIC WAY.
IT TO EXISTING		1105 ACCESSIBLE ENTRANCES
		ACCESSIBLE.
		1405     INSTALLATION OF WALL COVERINGS
ND 1406.4	_	1405.4.2 MASONRY - FLASHING AND WEEP HOLES IN ANCHORED VENEER SHALL BE LOCATED IN THE FIRST COURSE OF MASONRY ABOVE FINISHED GROUND LEVEL ABOVE THE FOUR WALL OR SLAB, AND OTHER POINTS OF SUPPORT, INCLUDING STRUCTURAL FLOORS, SHELF ANGLES AND LINTELS WHERE ANCHORED VENEERS ARE DESIGNED IN ACCORDANCE WITH SI
STING BUILDING SHALL BE		1405.6.       1406       COMBUSTIBLE MATERIALS ON THE EXTERIOR SIDE OF EXTERIOR WALLS
AGGREGATE AREA OF	-	THE BUILDING IS OF NON-COMBUSTIBLE CONSTRUCTION EXCEPT FOR MATERIALS PERMITTED BY 1406
DR WALLS WITH A FIRE LS WITH A FIRE	CHAPTER 29	PLUMBING SYSTEMS         TABLE 2902.1 MINIMUM NUMBER OF PLUMBING REQUIREMENTS:       SEE PLUMBING TABLE ON SHEET LS102
		IPC 410 DRINKING FOUNTAINS
		410.3.1 MINIMUM NUMBER. NOT FEWER THAN TWO DRINKING FOUNTAINS SHALL BE PROVIDED. ONE DRINKING FOUNTAIN SHALL COMPLY WITH THE REQUIREMENTS FOR PEOPLE WHO USE A WHEELCHAIR AND O DRINKING FOUNTAIN SHALL COMPLY WITH THE REQUIREMENTS FOR STANDING PERSONS. EXCEPTIONS: 1. A SINGLE DRINKING FOUNTAIN WITH TWO SEPARATE SPOUTS THAT COMPLIES WITH THE REQUIREMENTS FOR PEOPLE WHO USE A WHEELCHAIR AND STANDING PERSONS SHALL BE
		410.3.2 MORE THAN THE MINIMUM NUMBER. WHERE MORE THAN THE MINIMUM NUMBER OF DRINKING FOUNTAINS SPECIFIED IN SECTION 410.3.1 IS PROVIDED, 50 PERCENT OF THE TOTAL NUMBER OF DRINKING FOUNTAINS PROVIDED SHALL COMPLY WITH THE REQUIREMENTS FOR PERSONS WHO USE A WHEELCHAIR AND 50 PERCENT OF THE TOTAL NUMBER OF DRINKING FOUNTAINS PROVIDED SHALL COMPLY WITH PERSONS WHO USE A WHEELCHAIR AND 50 PERCENT OF THE TOTAL NUMBER OF DRINKING FOUNTAINS PROVIDED SHALL COMPLY WITH THE REQUIREMENTS FOR PERSONS WHO USE A WHEELCHAIR AND 50 PERCENT OF THE TOTAL NUMBER OF DRINKING FOUNTAINS PROVIDED SHALL COMPLY WITH THE REQUIREMENTS FOR PERSONS WHO USE A WHEELCHAIR AND 50 PERCENT OF THE TOTAL NUMBER OF DRINKING FOUNTAINS PROVIDED SHALL COMPLY WITH THE REQUIREMENTS FOR PERSONS WHO USE A WHEELCHAIR AND 50 PERCENT OF THE TOTAL NUMBER OF DRINKING FOUNTAINS PROVIDED SHALL COMPLY WITH PERSONS WHO USE A WHEELCHAIR AND 50 PERCENT OF THE TOTAL NUMBER OF DRINKING FOUNTAINS PROVIDED SHALL COMPLY WITH PERSONS WHO USE A WHEELCHAIR AND 50 PERCENT OF THE TOTAL NUMBER OF DRINKING FOUNTAINS PROVIDED SHALL COMPLY WITH PERSONS WHO USE A WHEELCHAIR AND 50 PERCENT OF THE TOTAL NUMBER OF DRINKING FOUNTAINS PROVIDED SHALL COMPLY WITH PERSONS WHO USE A WHEELCHAIR AND 50 PERCENT OF THE TOTAL NUMBER OF DRINKING FOUNTAINS PROVIDED SHALL COMPLY WITH PERSONS WHO USE A WHEELCHAIR AND 50 PERCENT OF THE TOTAL NUMBER OF DRINKING FOUNTAINS PROVIDED SHALL COMPLY WITH PERSONS WHO WHEELCHAIR AND SO PERCENT OF THE TOTAL NUMBER OF DRINKING FOUNTAINS PROVIDED SHALL COMPLY WITH PERSONS WHO WHEELCHAIR AND SO PERCENT OF THE TOTAL NUMBER OF DRINKING FOUNTAINS PROVIDED SHALL COMPLY WITH PERSONS WHO WHEELCHAIR AND SO PERCENT OF THE TOTAL NUMBER OF DRINKING FOUNTAINS PROVIDED SHALL COMPLY WITH PERSONS WHO WHEELCHAIR AND SO PERCENT OF THE TOTAL NUMBER OF DRINKING FOUNTAINS PERSONS WHO WHEELCHAIR AND SO PERCENT OF THE TOTAL NUMBER OF DRINKING PERSONS WHO WHEELCHAIR AND SO PERCENT OF THE TOTAL NUMBER OF DRINKING PERSONS WHO WHEELCHAIR AND SO PERCENT OF THE TOTAL NUMBER OF DRINKING PERS
NOT LESS THAN THAT		410.4 SUBSTITUTION IN OCCUPANCIES OTHER THAN RESTAURANTS, WHERE THREE OR MORE DRINKING FOUNTAINS ARE REQUIRED, WATER DISPENSERS SHALL BE PERMITTED TO BE SUBSTITUTED FOR NOT 50 PERCENT OF THE REQUIRED NUMBER OF DRINKING FOUNTAINS.
05 FOR EXTERIOR WALLS		
3 OR DECK ABOVE AND JOINTS AND VOIDS AT	_	
NT OF THE LENGTH OF THE		
OF SHEATHING, SLAB OR	_	
ASSEMBLY SHALL BE H SO AS NOT TO		
BE FIRE PARTITIONS		
E 721.1(2), A CMU WALL STANCE IS 2HR MIN.		

THAN 2 AND SECTION \_\_\_\_\_ E SHALL BE NOT RE THAN ONE O ACCESSIBLE Route from an Th sections MUM FIRE D BY THE PORTION OF THE ALL BE OUNDATION H SECTION ID ONE BE PERMITTED S PROVIDED WITH THE DT MORE THAN























 OVERALL PLAN - ROOF PLAN

 SCALE:
 1/16" = 1'-0"

 REF:
 1 / A-200



SCALE: 1/16" = 1'-0"







**PARTITION PLAN GENERAL NOTES** NEW PARTITIONS ARE TO BE CONSTRUCTED AS INDICATED BY PARTITION TAGS. TENANT BUILD OUT TO CONFORM TO ALL APPLICABLE CODES IN CITY OF GADSDEN, AL & ETOWAH COUNTY, INCLUDING ADA. SEE LIFE SAFETY FOR MORE INFORMATION AND ADA EXCEPTION FOR STRUCTURAL IMPRACTICABILITY CONCERNING EXISTING RESTROOMS. WHERE EXISTING AND NEW CONSTRUCTION MEET, THE SURFACES SHALL BE FINISHED SO THE TRANSITION IS NOT VISIBLE. MILLWORK ITEMS, COUNTERS, WORK SURFACES, BASE CABINETS, AND OTHER ITEMS TO COMPLY WITH ADA. PARTITIONS TO BE PARALLEL OR PERPENDICULAR TO EXTERIOR PERIMETER OF WALL, U.N.O. 6. NEW PARTITIONS BUILT CONTIGUOUS TO EXISTING PARTITIONS ARE TO ALIGN WITH EXISTING PARTITIONS, U.N.O. DOORS TO BE 6" FROM ADJACENT PARTITION, U.N.O. 8. AT CONCEALED FIRE BARRIERS PROVIDE STENCIL ABOVE CEILING IDENTIFYING WALL TYPE & RATING. SEE LIFE SAFETY FOR MORE INFORMATION. 9. PROVIDE OVERALL FLOOR AND DUST PROTECTION AT AREAS NOT UNDER CONSTRUCTION, BUT AFFECTED BY CONSTRUCTION INCLUDING BUT NOT LIMITED TO LOBBIES AND CORRIDORS. 10. PROVIDE FIRE RETARDANT BLOCKING IN PARTITIONS RECEIVING MILLWORK. 11. MILLWORK COUNTER DEPTH 25", U.N.O. 12. ALL EXISTING HOLES OR OPENINGS EXPOSED DURING CONSTRUCTION IN RATED WALLS ARE REQUIRED TO BE SEALED. MOCK-UP NOTES: . INSTALL MOCK-UP CURTAINWALL TO BE PERFORMANCE TESTED PER THE SPECIFICATIONS. REFER TO SPECIFICATION SECTION 01 4310 - QUALITY ASSURANCE MOCK-UP REQUIREMENTS FOR ADDITIONAL INSTALLATION REQUIREMENTS AND THE INDIVIDUAL SPEC SECTIONS FOR ALL MATERIALS ASSOCIATED WITH THE MOCK-UP. THE GC IS RESPONSIBLE FOR COORDINATED THE MOCK-UP WITH ALL ASSOCIATED TRADES. EXTERIOR MOCK-UP LOCATION TO BE COORDINATED W/ THE GC, ARCHITECT, AND OWNER DURING THE PRE-CONSTRUCTION MEETING. THE MOCK-UP IS TO REMAIN IN PLACE AND REPRESENT THE STANDARD OF ACCEPTABLE CONSTRUCTION ON THE BUILDING. DO NOT REMOVE THE MOCK-UP UNTIL DIRECTED TO DO SO IN WRITING BY THE ARCHITECT.

- CONT. MOISTURE BARRIER ON

ARCHITECTURAL PRECAST CONCRETE













CITY HALL - 3RD FLOOR PLAN SCALE: 1/8" = 1'-0"

## PARTITION PLAN GENERAL NOTES

- NEW PARTITIONS ARE TO BE CONSTRUCTED AS INDICATED BY PARTITION TAGS.
   TENANT BUILD OUT TO CONFORM TO ALL APPLICABLE CODES IN <u>CITY OF GADSDEN, AL & ETOWAH COUNTY</u>, INCLUDING ADA. SEE LIFE SAFETY FOR MORE INFORMATION AND ADA
- EXCEPTION FOR STRUCTURAL IMPRACTICABILITY CONCERNING EXISTING RESTROOMS. 3. WHERE EXISTING AND NEW CONSTRUCTION MEET, THE SURFACES SHALL BE FINISHED SO THE TRANSITION IS NOT VISIBLE.
- MILLWORK ITEMS, COUNTERS, WORK SURFACES, BASE CABINETS, AND OTHER ITEMS TO COMPLY WITH ADA.
   PARTITIONS TO BE PARALLEL OR PERPENDICULAR TO EXTERIOR PERIMETER OF WALL, U.N.O.
- NEW PARTITIONS BUILT CONTIGUOUS TO EXISTING PARTITIONS ARE TO ALIGN WITH EXISTING PARTITIONS, U.N.O.
   DOORS TO BE 6" FROM ADJACENT PARTITION, U.N.O.
- AT CONCEALED FIRE BARRIERS PROVIDE STENCIL ABOVE CEILING IDENTIFYING WALL TYPE & RATING. SEE LIFE SAFETY FOR MORE INFORMATION.
   PROVIDE OVERALL FLOOR AND DUST PROTECTION AT AREAS NOT UNDER CONSTRUCTION, BUT AFFECTED BY CONSTRUCTION INCLUDING BUT NOT LIMITED TO LOBBIES AND CORRIDORS.
- 10. PROVIDE FIRE RETARDANT BLOCKING IN PARTITIONS RECEIVING MILLWORK. 11. MILLWORK COUNTER DEPTH 25", U.N.O.
- 12. ALL EXISTING HOLES OR OPENINGS EXPOSED DURING CONSTRUCTION IN RATED WALLS ARE REQUIRED TO BE SEALED.



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CEILING PLAN KEY					
ТҮРЕ	CODE	DESCRIPTION	ТҮРЕ	DESC	RIPTION
	А	1X4 LIGHT FIXTURE	TYPE	CEILING	TAG
	B4	2X4 LIGHT FIXTURE		CEILING	SERVICE PANELS
	B2	2X2 LIGHT FIXTURE		AIR SUPP	PLY
0	C2 C4	2" DOWNLIGHT RECESSED CAN LIGHT FIXTURE 4" DOWNLIGHT RECESSED CAN LIGHT FIXTURE		AIR SUPP	PLY
	D	EDGE LIT 2X2 LIGHT FIXTURE		AIR RETU	JRN
	L4	4' RECESSED 4" LINEAR LIGHT FIXTURE		AIR RETU	JRN
	L6	6' RECESSED 4" LINEAR LIGHT FIXTURE	٢	LIGHT SE	NSOR
	L8	8' RECESSED 4" LINEAR LIGHT FIXTURE		SECTION	DETAIL TAG
	M4	4' CEILING MOUNTED LINEAR LIGHT FIXTURE		TL	COVE TAPE LIGHT
0	Ν	DECRATIVE PENDANT FIXTURE		RS	ROLLER SHADE
$\bigcirc$	P1 P2	1' PENDANT LIGHT FIXTURE 2' PENDANT LIGHT FIXTURE	-		
$\odot$	Q	CLUSTER OF 3 NANO CAN LIGHTS			
$\bigcirc$	S	CURVED DECRATIVE LIGHT FIXTURE			
	R8	8' RECESSED 2" LINEAR LIGHT FIXTURE			
	Т	CURVED PENDANT LIGHT FIXTURE			
$\bigcirc$	XL1	EXIT SIGN (LIGHTED FACE SHADED)			
	XL2	EXIT SIGN (LIGHTED FACE SHADED)			
	р		1	1	1



# **CEILING PLAN LEGEND**

ТҮРЕ	MFR.	DESCRIPTION	NOTES
ACT-1	ARMSTRONG	24" X 24" X 1" TH. CEILING TILE CALLA #2824 TEGULAR 9/16", WHITE ON 9/16" INTERLUDE XL GRID SYSTEM	
ACT-2	ARMSTRONG	24" X 24" X 5/8" TH. CEILING TILE <b>KITCHENZONE #673, WHITE</b> ON 15/16" PRELUDE GRID SYSTEM	
GWB	GYPSUM WALL BOARD (PAINTED FINISH)	PAINTED 5/8" TH. GYPSUM BOARD ON ARMSTRONG CEILING GRID SYSTEM AND/OR TRADITIONAL METAL STUD FRAMING AS DETAILED	PAINT TO BE PNT-1 IN FLAT FINISH, NOTE: GYPSUM WALL BOARD TO RETURN VERTICALLY AT ALL TRANSITIONS TO EXPOSED CEILING CONDITION
WDC-1	-	WOOD VENEER CEILING TO MATCH ARMSTRONG WOODWORKS GRILLE - WHITE OAK - MATCH ARCHITECT'S SAMPLE	
EXP	EXPOSED CEILING	ALL EXPOSED SURFACES OF BUILDING STRUCTURE AND M,E,P, FP SYSTEMS SHALL BE PRIMED AND PAINTED	PAINT TO BE PNT-1 IN FLAT FINISH
EX. GWB	-	EXISTING DRYWALL	
	NOT IN SCOPE		



# CEILING NOTES

1. TYPICAL CEILING HEIGHT IS <u>9'-6"</u>, U.N.O. FIELD VERIFY MAXIMUM CEILING HEIGHT THAT CAN BE ACHIEVED.

2. ANY SUBSTITUTIONS FOR THE LIGHT FIXTURES AS SPECIFIED SHALL BE SUBMITTED TO ARCHITECT DURING THE BID PROCESS FOR REVIEW AND APPROVAL. ARCHITECT TO HAVE A MINIMUM OF 5 BUSINESS DAYS TO REVIEW ANY SUBSTITUTIONS.

3. UNLESS NOTED OR INDICATED OTHERWISE, ALL RECESSED LIGHT FIXTURES SHALL BE CENTED IN 2X2 ACOUSTICAL CEILING TILES.

4. UNLESS NOTED OR INDICATED OTHERWISE, ALL ACOUSTICAL CEILING GRIDS SHALL BE CENTERED IN ROOMS AS INDICATED.

5. GENERAL CONRACTOR SHALL CONFIRM EXACT LOCATIONS FOR ALL LIGHT FIXTURES WITH ARCHITECT PRIOR TO ROUGH-INS OCCURING.

6. GENERAL CONTACTOR SHALL CONFIRM EXACT HEIGHT TO BOTTOM EDGE OF PENDANT FIXTURES ABOVE FINISH FLOOR LEVEL AND EXACT LOCATIONS FOR ALL PENDANT FIXTURES WITH ARCHITECT PRIOR TO ROUGH-INS OCCURING.

7. PROVIDE CONTINUOUS SOUND BATT INSULATION ABOVE THE FINISHED CEILINGS ADJACENT TO PARTITIONS TO A MIMIMUM OF 4'-0" FROM THE TOP OF PARTITIONS IN BOTH DIRECTIONS. SEE PARTITION SCHEDULE ON AI701.

8. PROVIDE DIMMING CONTROLS IN ALL CONFERENCE, MEETING AND HUDDLE ROOMS. DIFFERENT FIXTURE TYPES TO BE CONTROLLED INDIVIDUALLY.

9. PROVIDE DIMMING CONTROLS FOR ALL COVER LIGHT FIXTURES.

10. PROVIDE DIMMING CONTROLS FOR ALL DECORATIVE PENDANTS AND DECORATIVE SCONCES.



CEILING PLAN KEY					
ТҮРЕ	CODE	DESCRIPTION	ТҮРЕ	DESC	RIPTION
	A	1X4 LIGHT FIXTURE	TYPE	CEILING	TAG
	B4	2X4 LIGHT FIXTURE		CEILING	SERVICE PANELS
	B2	2X2 LIGHT FIXTURE		AIR SUPI	ΡΙΥ
0	C2 C4	2" DOWNLIGHT RECESSED CAN LIGHT FIXTURE 4" DOWNLIGHT RECESSED CAN LIGHT FIXTURE		AIR SUP	ΡΙΥ
	D	EDGE LIT 2X2 LIGHT FIXTURE		AIR RETU	JRN
	L4	4' RECESSED 4" LINEAR LIGHT FIXTURE		AIR RETU	JRN
	L6	6' RECESSED 4" LINEAR LIGHT FIXTURE	٢	LIGHT SE	ENSOR
	L8	8' RECESSED 4" LINEAR LIGHT FIXTURE		SECTION	I DETAIL TAG
	M4	4' CEILING MOUNTED LINEAR LIGHT FIXTURE		TL	COVE TAPE LIGHT
0	N	DECRATIVE PENDANT FIXTURE		RS	ROLLER SHADE
0	P1	1' PENDANT LIGHT FIXTURE			
	P2	2' PENDANT LIGHT FIXTURE			
٢	Q	CLUSTER OF 3 NANO CAN LIGHTS			
$\bigcirc$	S	CURVED DECRATIVE LIGHT FIXTURE			
	R8	8' RECESSED 2" LINEAR LIGHT FIXTURE			
	Т	CURVED PENDANT LIGHT FIXTURE			
Q	XL1	EXIT SIGN (LIGHTED FACE SHADED)			
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	-1	1		1	1



CEILING PLAN LEGEND					
ТҮРЕ	MFR.	DESCRIPTION	NOTES		
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ACT-2	ARMSTRONG	24" X 24" X 5/8" TH. CEILING TILE <b>KITCHENZONE #673, WHITE</b> ON 15/16" PRELUDE GRID SYSTEM			
Band and a second secon	GYPSUM WALL BOARD (PAINTED FINISH)	PAINTED 5/8" TH. GYPSUM BOARD ON ARMSTRONG CEILING GRID SYSTEM AND/OR TRADITIONAL METAL STUD FRAMING AS DETAILED	PAINT TO BE PNT-1 IN FLAT NOTE: GYPSUM WALL BOA AT ALL TRANSITIONS TO EX		
WDC-1	-	WOOD VENEER CEILING TO MATCH ARMSTRONG WOODWORKS GRILLE - WHITE OAK - MATCH ARCHITECT'S SAMPLE			
EXP	EXPOSED CEILING	ALL EXPOSED SURFACES OF BUILDING STRUCTURE AND M,E,P, FP SYSTEMS SHALL BE PRIMED AND PAINTED	PAINT TO BE PNT-1 IN FLAT		
EX. GWB	-	EXISTING DRYWALL			
	NOT IN SCOPE				
	1		1		



ТҮРЕ	CODE	DESCRIPTION	ТҮРЕ	DESC	RIPTION
	A	1X4 LIGHT FIXTURE	TYPE	CEILING	TAG
	B4	2X4 LIGHT FIXTURE		CEILING	SERVICE PANELS
	B2	2X2 LIGHT FIXTURE		AIR SUP	ΡĹΥ
0	C2	2" DOWNLIGHT RECESSED CAN LIGHT FIXTURE		AIR SUPP	PLY
	D	EDGE LIT 2X2 LIGHT FIXTURE		AIR RETU	JRN
[]	L4	4' RECESSED 4" LINEAR LIGHT FIXTURE		AIR RETU	JRN
	L6	6' RECESSED 4" LINEAR LIGHT FIXTURE	Ô	LIGHT SE	INSOR
	L8	8' RECESSED 4" LINEAR LIGHT FIXTURE		SECTION	DETAIL TAG
	M4	4' CEILING MOUNTED LINEAR LIGHT FIXTURE		TL	COVE TAPE LIGHT
0	N	DECRATIVE PENDANT FIXTURE		RS	ROLLER SHADE
	P1	1' PENDANT LIGHT FIXTURE			
0	P2	2' PENDANT LIGHT FIXTURE			
$\odot$	Q	CLUSTER OF 3 NANO CAN LIGHTS			
$\bigcirc$	S	CURVED DECRATIVE LIGHT FIXTURE			
	R8	8' RECESSED 2" LINEAR LIGHT FIXTURE			
	Т	CURVED PENDANT LIGHT FIXTURE			
Q	XL1	EXIT SIGN (LIGHTED FACE SHADED)			
	XL2	EXIT SIGN (LIGHTED FACE SHADED)			



CEILIN	EILING PLAN LEGEND						
YPE	MFR.	DESCRIPTION	NOTES				
ACT-1	ARMSTRONG	24" X 24" X 1" TH. CEILING TILE CALLA #2824 TEGULAR 9/16", WHITE ON 9/16" INTERLUDE XL GRID SYSTEM					
ACT-2	ARMSTRONG	24" X 24" X 5/8" TH. CEILING TILE <b>KITCHENZONE #673, WHITE</b> ON 15/16" PRELUDE GRID SYSTEM					
GWB	GYPSUM WALL BOARD (PAINTED FINISH)	PAINTED 5/8" TH. GYPSUM BOARD ON ARMSTRONG CEILING GRID SYSTEM AND/OR TRADITIONAL METAL STUD FRAMING AS DETAILED	PAINT TO BE PNT-1 IN FLAT FINISH, NOTE: GYPSUM WALL BOARD TO RETURN VERTICALLY AT ALL TRANSITIONS TO EXPOSED CEILING CONDITION				
WDC-1	-	WOOD VENEER CEILING TO MATCH ARMSTRONG WOODWORKS GRILLE - WHITE OAK - MATCH ARCHITECT'S SAMPLE					
EXP	EXPOSED CEILING	ALL EXPOSED SURFACES OF BUILDING STRUCTURE AND M,E,P, FP SYSTEMS SHALL BE PRIMED AND PAINTED	PAINT TO BE PNT-1 IN FLAT FINISH				
EX. GWB	-	EXISTING DRYWALL					
	NOT IN SCOPE						



CEILIN	G PL	AN KEY			
ТҮРЕ	CODE	DESCRIPTION	ТҮРЕ	DESC	RIPTION
	A	1X4 LIGHT FIXTURE	TYPE HEIGHT	CEILING	TAG
	B4	2X4 LIGHT FIXTURE		CEILING	SERVICE PANELS
	B2	2X2 LIGHT FIXTURE		AIR SUPF	ΡLΥ
0	C2 C4	2" DOWNLIGHT RECESSED CAN LIGHT FIXTURE 4" DOWNLIGHT RECESSED CAN LIGHT FIXTURE		AIR SUPF	ΡLΥ
	D	EDGE LIT 2X2 LIGHT FIXTURE		AIR RETU	JRN
	L4	4' RECESSED 4" LINEAR LIGHT FIXTURE		AIR RETU	JRN
	L6	6' RECESSED 4" LINEAR LIGHT FIXTURE	٢	LIGHT SE	INSOR
	L8	8' RECESSED 4" LINEAR LIGHT FIXTURE		SECTION	I DETAIL TAG
	M4	4' CEILING MOUNTED LINEAR LIGHT FIXTURE		TL	COVE TAPE LIGHT
0	N	DECRATIVE PENDANT FIXTURE		RS	ROLLER SHADE
0	P1	1' PENDANT LIGHT FIXTURE			
	P2	2' PENDANT LIGHT FIXTURE			
$\odot$	Q	CLUSTER OF 3 NANO CAN LIGHTS			
$\bigcirc$	S	CURVED DECRATIVE LIGHT FIXTURE			
	R8	8' RECESSED 2" LINEAR LIGHT FIXTURE			
	т	CURVED PENDANT LIGHT FIXTURE			
Q	XL1	EXIT SIGN (LIGHTED FACE SHADED)			
	XL2	EXIT SIGN (LIGHTED FACE SHADED)			
	,			•	•

CEILING PLAN LEGEND					
ТҮРЕ	MFR.	DESCRIPTION	NOTES		
ACT-1	ARMSTRONG	24" X 24" X 1" TH. CEILING TILE CALLA #2824 TEGULAR 9/16", WHITE ON 9/16" INTERLUDE XL GRID SYSTEM			
ACT-2	ARMSTRONG	24" X 24" X 5/8" TH. CEILING TILE <b>KITCHENZONE #673, WHITE</b> ON 15/16" PRELUDE GRID SYSTEM			
Since the second	GYPSUM WALL BOARD (PAINTED FINISH)	PAINTED 5/8" TH. GYPSUM BOARD ON ARMSTRONG CEILING GRID SYSTEM AND/OR TRADITIONAL METAL STUD FRAMING AS DETAILED	PAINT TO BE PNT-1 IN FLAT FINISH, NOTE: GYPSUM WALL BOARD TO RETURN VERTICALLY AT ALL TRANSITIONS TO EXPOSED CEILING CONDITION		
WDC-1	-	WOOD VENEER CEILING TO MATCH ARMSTRONG WOODWORKS GRILLE - WHITE OAK - MATCH ARCHITECT'S SAMPLE			
EXP	EXPOSED CEILING	ALL EXPOSED SURFACES OF BUILDING STRUCTURE AND M,E,P, FP SYSTEMS SHALL BE PRIMED AND PAINTED	PAINT TO BE PNT-1 IN FLAT FINISH		
EX. GWB	-	EXISTING DRYWALL			
	NOT IN SCOPE				



 CITY COUNCIL - IST FLOOR RCP

 SCALE:
 1/8" = 1'-0"

 REF:
 1/11 × 17 P

### **CEILING NOTES**

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1. TYPICAL CEILING HEIGHT IS **<u>9'-6"</u>**, U.N.O. FIELD VERIFY MAXIMUM CEILING HEIGHT THAT CAN BE ACHIEVED.

- 2. ANY SUBSTITUTIONS FOR THE LIGHT FIXTURES AS SPECIFIED SHALL BE SUBMITTED TO ARCHITECT DURING THE BID PROCESS FOR REVIEW AND APPROVAL. ARCHITECT TO HAVE A MINIMUM OF 5 BUSINESS DAYS TO REVIEW ANY SUBSTITUTIONS.
- . UNLESS NOTED OR INDICATED OTHERWISE, ALL RECESSED LIGHT FIXTURES SHALL BE CENTED IN 2X2 ACOUSTICAL CEILING TILES.
- UNLESS NOTED OR INDICATED OTHERWISE, ALL ACOUSTICAL CEILING GRIDS SHALL BE CENTERED IN ROOMS AS INDICATED.
- . GENERAL CONRACTOR SHALL CONFIRM EXACT LOCATIONS FOR ALL LIGHT FIXTURES WITH ARCHITECT PRIOR TO ROUGH-INS OCCURING.
- 6. GENERAL CONTACTOR SHALL CONFIRM EXACT HEIGHT TO BOTTOM EDGE OF PENDANT FIXTURES ABOVE FINISH FLOOR LEVEL AND EXACT LOCATIONS FOR ALL PENDANT FIXTURES WITH ARCHITECT PRIOR TO ROUGH-INS OCCURING.
- ". PROVIDE CONTINUOUS SOUND BATT INSULATION ABOVE THE FINISHED CEILINGS ADJACENT TO PARTITIONS TO A MIMIMUM OF 4'-0" FROM THE TOP OF PARTITIONS IN BOTH DIRECTIONS. SEE PARTITION SCHEDULE ON AI701.
- 8. PROVIDE DIMMING CONTROLS IN ALL CONFERENCE, MEETING AND HUDDLE ROOMS. DIFFERENT FIXTURE TYPES TO BE CONTROLLED INDIVIDUALLY.
- 9. PROVIDE DIMMING CONTROLS FOR ALL COVER LIGHT FIXTURES.
- 10. PROVIDE DIMMING CONTROLS FOR ALL DECORATIVE PENDANTS AND DECORATIVE SCONCES.




PE	CODE	DESCRIPTION	ТҮРЕ	DESC	RIPTION
	A	1X4 LIGHT FIXTURE	TYPE	CEILING	TAG
	B4	2X4 LIGHT FIXTURE		CEILING	SERVICE PANELS
	B2	2X2 LIGHT FIXTURE		AIR SUP	PLY
	C2	2" DOWNLIGHT RECESSED CAN LIGHT FIXTURE			
0	C4	4" DOWNLIGHT RECESSED CAN LIGHT FIXTURE		AIR SUPI	2μγ
	D	EDGE LIT 2X2 LIGHT FIXTURE		AIR RETU	JRN
	L4	4' RECESSED 4" LINEAR LIGHT FIXTURE		AIR RETU	JRN
	L6	6' RECESSED 4" LINEAR LIGHT FIXTURE	٢	LIGHT SE	INSOR
	L8	8' RECESSED 4" LINEAR LIGHT FIXTURE		SECTION	DETAIL TAG
	M4	4' CEILING MOUNTED LINEAR LIGHT FIXTURE		TL	COVE TAPE LIGHT
$\bigcirc$	N	DECRATIVE PENDANT FIXTURE		RS	ROLLER SHADE
$\frown$	P1	1' PENDANT LIGHT FIXTURE			
$\odot$	P2	2' PENDANT LIGHT FIXTURE			
$\odot$	Q	CLUSTER OF 3 NANO CAN LIGHTS			
$\bigcirc$	S	CURVED DECRATIVE LIGHT FIXTURE			
]	R8	8' RECESSED 2" LINEAR LIGHT FIXTURE			
	т	CURVED PENDANT LIGHT FIXTURE			
$\bigcirc$	XL1	EXIT SIGN (LIGHTED FACE SHADED)			
	XL2	EXIT SIGN (LIGHTED FACE SHADED)			

CEILING PLAN LEGEND					
ТҮРЕ	MFR.	DESCRIPTION	NOTES		
ACT-1	ARMSTRONG	24" X 24" X 1" TH. CEILING TILE <b>CALLA #2824 TEGULAR 9/16", WHITE</b> ON 9/16" INTERLUDE XL GRID SYSTEM			
ACT-2	ARMSTRONG	24" X 24" X 5/8" TH. CEILING TILE <b>KITCHENZONE #673, WHITE</b> ON 15/16" PRELUDE GRID SYSTEM			
GWB	GYPSUM WALL BOARD (PAINTED FINISH)	PAINTED 5/8" TH. GYPSUM BOARD ON ARMSTRONG CEILING GRID SYSTEM AND/OR TRADITIONAL METAL STUD FRAMING AS DETAILED	PAINT TO BE PNT-1 IN FLAT FINISH, NOTE: GYPSUM WALL BOARD TO RETURN VERTICALLY AT ALL TRANSITIONS TO EXPOSED CEILING CONDITION		
WDC-1	-	WOOD VENEER CEILING TO MATCH ARMSTRONG WOODWORKS GRILLE - WHITE OAK - MATCH ARCHITECT'S SAMPLE			
EXP	EXPOSED CEILING	ALL EXPOSED SURFACES OF BUILDING STRUCTURE AND M,E,P, FP SYSTEMS SHALL BE PRIMED AND PAINTED	PAINT TO BE PNT-1 IN FLAT FINISH		
EX. GWB	-	EXISTING DRYWALL			
	NOT IN SCOPE				

 	19
 	17
 	16
	14

	B4 B	
B4, B4, B4, B4, B4, CA, CA, CA, CA, CA, CA, CA, CA, CA, CA		
158 B4 B4 B4 B4 B4		
B4 B4 B4	B4 B4 B4 B4 B4 B4 B4 B4 B4 B4 B4 B4 B4 B	
ELEV 1 3 B4		
2 B4 B4 B4 B4 B4 B4 B4 B4 B4 B4 B4 B4 B4	OFFICE       ACT-1       9' - 0 3/4"       ACT-1       9' - 0 3/4"         B4       B4       B4       CONFERENCE ROOM       9' - 0 3/4"       B4         9' - 0 3/4"       B4       CONFERENCE ROOM       9' - 0 3/4"       B4         9' - 0 3/4"       B4       CONFERENCE ROOM       9' - 0 3/4"       B4         9' - 0 3/4"       B4       CONFERENCE ROOM       9' - 0 3/4"       B4         9' - 0 3/4"       B4       CONFERENCE ROOM       9' - 0 3/4"       B4         9' - 0 3/4"       B4       CONFERENCE ROOM       9' - 0 3/4"       B4         9' - 0 3/4"       B4       CONFERENCE ROOM       9' - 0 3/4"       B4         9' - 0 3/4"       B4       CONFERENCE ROOM       9' - 0 3/4"       B4         9' - 0 3/4"       B4       CONFERENCE ROOM       9' - 0 3/4"       B4	

## CITY COUNCIL - 2ND FLOOR RCP SCALE: 1/8" = 1'-0" REF: 1 /A-200

## CEILING NOTES

1. TYPICAL CEILING HEIGHT IS <u>9'-6"</u>, U.N.O. FIELD VERIFY MAXIMUM CEILING HEIGHT THAT CAN BE ACHIEVED.

2. ANY SUBSTITUTIONS FOR THE LIGHT FIXTURES AS SPECIFIED SHALL BE SUBMITTED TO ARCHITECT DURING THE BID PROCESS FOR REVIEW AND APPROVAL. ARCHITECT TO HAVE A MINIMUM OF 5 BUSINESS DAYS TO REVIEW ANY SUBSTITUTIONS.

- 3. UNLESS NOTED OR INDICATED OTHERWISE, ALL RECESSED LIGHT FIXTURES SHALL BE CENTED IN 2X2 ACOUSTICAL CEILING TILES.
- 4. UNLESS NOTED OR INDICATED OTHERWISE, ALL ACOUSTICAL CEILING GRIDS SHALL BE CENTERED IN ROOMS AS INDICATED.
- 5. GENERAL CONRACTOR SHALL CONFIRM EXACT LOCATIONS FOR ALL LIGHT FIXTURES WITH ARCHITECT PRIOR TO ROUGH-INS OCCURING.
- 6. GENERAL CONTACTOR SHALL CONFIRM EXACT HEIGHT TO BOTTOM EDGE OF PENDANT FIXTURES ABOVE FINISH FLOOR LEVEL AND EXACT LOCATIONS FOR ALL PENDANT FIXTURES WITH ARCHITECT PRIOR TO ROUGH-INS OCCURING.
- 7. PROVIDE CONTINUOUS SOUND BATT INSULATION ABOVE THE FINISHED CEILINGS ADJACENT TO PARTITIONS TO A MIMIMUM OF 4'-0" FROM THE TOP OF PARTITIONS IN BOTH DIRECTIONS. SEE PARTITION SCHEDULE ON AI701.
- 8. PROVIDE DIMMING CONTROLS IN ALL CONFERENCE, MEETING AND HUDDLE ROOMS. DIFFERENT FIXTURE TYPES TO BE CONTROLLED INDIVIDUALLY.
- 9. PROVIDE DIMMING CONTROLS FOR ALL COVER LIGHT FIXTURES.
- 10. PROVIDE DIMMING CONTROLS FOR ALL DECORATIVE PENDANTS AND DECORATIVE SCONCES.



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PLUMBING LEGEND				
TOILET A	CCESSORIES			
CODE	PRODUCT	DESCRIP		
SK-1	TOILET SINK	MANUF		
SK-2	KITCHEN SINK	MANUF		
FC-1	TOILET FAUCET	MANUF		
FC-2	KITCHEN FAUCET	MANUF		
SD-1	SOAP DISPENSOR	MANUF		
TL-1	TOILET	SEE PLU		
UR-1	URINAL	SEE PLU		
WC-1	WATER COOLER	MANUF		











2 ENLARGED FINISH PLAN - CONFRENCE ROOM 333 SCALE: 3/8" = 1'-0" REF: 1/A-702





TOIL
TOILET ACC
CODE
GB-1
GB-2
GB-3
GB-4
HD-1
SN-1
TP-1
MI-1
MI-2
MI-3
US-1
TLT-1
BC-1

SORIES	
PRODUCT	DESCRIPTION
GRAB BAR - 36"	MANUFACTURER: BOBRICK, MODEL #: B-6806-36
GRAB BAR - 42"	MANUFACTURER: BOBRICK, MODEL #: B-6806-42
GRAB BAR - 18"	MANUFACTURER: BOBRICK, MODEL #: B-6806-18
GRAB BAR - 24"	MANUFACTURER: BOBRICK, MODEL #: B-6806-24
HAND DRYER	MANUFACTURER: DYSON, AIRBLADE V (NICKEL) HAND DRYER
SANITARY NAPKIN DISPOSAL	MANUFACTURER: MANUTACTURER BOBRICK, MODEL #: B-35139
TOILET PAPER	MANUFACTURER: MANUTACTURER BOBRICK, MODEL #: B-2890
MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 30027, SIZE: CUSTOM MIRROR 2' X 4', CUSTOM FRAMELESS "FLOATING" MIRROR ON 3/4" THICK PAINTED BLOCKING (OFFSET EDGES OF PLYWOOD SO THEY ARE CONCEALED FROM VIEW) POLISHED EDGE
MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 30027, SIZE: CUSTOM MIRROR 2' X 4', CUSTOM FRAMELESS "FLOATING" MIRROR ON 3/4" THICK PAINTED BLOCKING (OFFSET EDGES OF PLYWOOD SO THEY ARE CONCEALED FROM VIEW) POLISHED EDGE
MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 15161 NELLY, COLOR: CHROME, SIZE: CUSTOM 24" X 72"
URINAL SCREEN	MANUFACTURER: BOBRICK. 1045 WALL HUNG DESIGNER SERIES (HPDL-2)
TOILET PARTITION	MANUFACTURER: KOALA KARE. KB310-SSRE HORIZONTAL STAINLESS STEEL RECESSED-MOUNT
BABY CHANGING	MANUFACTURER: BOBRICK. 1042 OVERHEAD-BRACED (HPDL-2 )

## PLUMBING LEGEND

TOILET ACCE	SSORIES	
CODE	PRODUCT	DESCRIPTION
SK-1	TOILET SINK	MANUFACTURER: KOHLER, VERTICYL 19 3/
SK-2	KITCHEN SINK	MANUFACTURER: KOHLER, VAULT 24" UNE
FC-1	TOILET FAUCET	MANUFACTURER: SLOAN ETF-410-BOX-BDI
FC-2	KITCHEN FAUCET	MANUFACTURER: KOHLER, CRUE, K-22972-
SD-1	SOAP DISPENSOR	MANUFACTURER: SLOAN, ESD-410-CP, COE
TL-1	TOILET	SEE PLUMBING DRAWINGS
UR-1	URINAL	SEE PLUMBING DRAWINGS
WC-1	WATER COOLER	MANUFACTURER: ELKAY; LZWS-LRPBM28K





7 / A-722 ⊾

EQEQ

GB-1

 INTERIOR ELEVATION - TOILET 345

 SCALE:
 3/8" = 1'-0"

 REF:
 1 / A-605

GB-3

GB-2

TP-1

EQEC

MI-1

3-0"











AP	APPLIANCE LEGEND				
TOILET A	CCESSORIES				
CODE	PRODUCT	DESCRIPTION			
IC-1	ADA ICE MACHINE	MANUFACTURER: WHIRLPOOL, MODEL #: WUI75X15HZ, COLOR: STAINLESS STEEL			
DW-1	ADA DISH WASHER	MANUFACTURER: WHIRLPOOL, MODEL #: WDT550SAPZ, COLOR: STAINLESS STEEL			
MW-1	MICROWAVE	MANUFACTURER: WHIRLPOOL, MODEL #: WMCS7022RZ, COLOR: STAINLESS STEEL			
RF-1	REFRIDGERATOR	MANUFACTURER: WHIRLPOOL, MODEL #: WRFF3236RZ, COLOR: STAINLESS STEEL			







2 ENLARGED RCP - BREAKROOM 343, JAN. 344 & TOILET 345 SCALE: 3/8" = 1'-0" REF: 1/A-123



 ENLARGED FLOOR PLAN - BREAKROOM 343, JAN. 344 & TOILET 345

 SCALE:
 3/8" = 1'-0"

 REF:
 1/A-106















![](_page_187_Figure_1.jpeg)

![](_page_187_Figure_2.jpeg)

![](_page_187_Figure_3.jpeg)

![](_page_187_Figure_4.jpeg)

![](_page_187_Figure_5.jpeg)

- MECHANICAL GRILL SYSTEM SEE MECHANICAL DRAWINGS -ALUMINUM STOREFRONT SYSTEM –

![](_page_187_Picture_22.jpeg)

![](_page_188_Picture_0.jpeg)

![](_page_188_Picture_1.jpeg)

2 INTERIOR ELEVATION - LOBBY 125 SCALE: 3/8" = 1'-0" REF: 1 /A-109

![](_page_188_Figure_3.jpeg)

![](_page_188_Picture_5.jpeg)

![](_page_189_Picture_0.jpeg)

![](_page_189_Figure_1.jpeg)

![](_page_189_Figure_2.jpeg)

![](_page_189_Picture_3.jpeg)

![](_page_190_Figure_0.jpeg)

![](_page_190_Figure_3.jpeg)

![](_page_191_Figure_0.jpeg)

![](_page_191_Figure_4.jpeg)

B ENLARGED RCP - LOBBY 257 & RECEPTION 256 SCALE: 3/8" = 1'-0" REF: 1/A-125

![](_page_191_Figure_7.jpeg)

![](_page_191_Picture_8.jpeg)

**CINERARGED RCP - CONFERENCE ROOM 240** SCALE: 3/8" = 1'-0" REF: 1 /A-125

![](_page_191_Figure_11.jpeg)

![](_page_191_Picture_12.jpeg)

 ENLARGED PLAN - LOBBY 257 & RECEPTION 256

 SCALE:
 3/8" = 1'-0"

 REF:
 1/A-108

![](_page_191_Figure_14.jpeg)

![](_page_191_Figure_15.jpeg)

ENLARGED FINISH PLAN - CONFERENCE ROOM 240 SCALE: 3/8" = 1'-0" REF: 1 /A-704

![](_page_191_Picture_18.jpeg)

WALL MOUNTED MONITOR - SEE AV: PROVIDE REQUIRED CONCEALED WALL

![](_page_192_Figure_0.jpeg)

![](_page_192_Figure_1.jpeg)

![](_page_192_Figure_2.jpeg)

![](_page_192_Figure_3.jpeg)

![](_page_192_Figure_4.jpeg)

SPACE RESERVED FOR COUNTERTOP
POSTAGE PRINTERS

![](_page_192_Figure_8.jpeg)

![](_page_193_Figure_0.jpeg)

## 2 ENLARGED RCP - IST FLOOR CITY HALL SCALE: 3/8" = 1'-0" REF: 1 /A-121

![](_page_193_Figure_2.jpeg)

TILE WAINSCOT

ON ALL WALLS -

NOT FULLY TILED

![](_page_193_Figure_3.jpeg)

3' - 6"

![](_page_193_Figure_4.jpeg)

![](_page_193_Figure_5.jpeg)

![](_page_193_Figure_6.jpeg)

![](_page_193_Figure_7.jpeg)

![](_page_193_Figure_8.jpeg)

![](_page_193_Figure_9.jpeg)

![](_page_193_Figure_10.jpeg)

![](_page_193_Figure_11.jpeg)

![](_page_193_Figure_12.jpeg)

то	TOILET ACCESSORY LEGEND				
TOILET A					
CODE	PRODUCT	DESCRIPTION			
GB-1	GRAB BAR - 36"	MANUFACTURER: BOBRICK, MODEL #: B-6806-36			
GB-2	GRAB BAR - 42"	MANUFACTURER: BOBRICK, MODEL #: B-6806-42			
GB-3	GRAB BAR - 18"	MANUFACTURER: BOBRICK, MODEL #: B-6806-18			
GB-4	GRAB BAR - 24"	MANUFACTURER: BOBRICK, MODEL #: B-6806-24			
HD-1	HAND DRYER	MANUFACTURER: DYSON, AIRBLADE V (NICKEL) HAND DRYER			
SN-1	SANITARY NAPKIN DISPOSAL	MANUFACTURER: MANUTACTURER BOBRICK, MODEL #: B-35139			
TP-1	TOILET PAPER	MANUFACTURER: MANUTACTURER BOBRICK, MODEL #: B-2890			
MI-1	MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 30027, SIZE: CUSTOM FRAMELESS "FLOATING" MIRROR ON 3/4" THICK PAINTED BLOCKING PLYWOOD SO THEY ARE CONCEALED FROM VIEW) POLISHED EDGE			
MI-2	MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 30027, SIZE: CUSTOM FRAMELESS "FLOATING" MIRROR ON 3/4" THICK PAINTED BLOCKING PLYWOOD SO THEY ARE CONCEALED FROM VIEW) POLISHED EDGE			
MI-3	MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 15161 NELLY, COLOR: ( 24" X 72"			
US-1	URINAL SCREEN	MANUFACTURER: BOBRICK. 1045 WALL HUNG DESIGNER SERIES (HP			
TLT-1	TOILET PARTITION	MANUFACTURER: KOALA KARE. KB310-SSRE HORIZONTAL STAINLESS			
BC-1	BABY CHANGING	M <sup>/</sup> 7 / A-722URER: BOBRICK. 1042 OVERHEAD-BRACED (HPDI-2 ) 2" X 10" PORCELAI			

![](_page_193_Picture_14.jpeg)

# - REMOVABLE PANEL

## - ARCHITECT TO PROVIDE ROUGH IN DIMENSIONS FOR SCONCES PRIOR TO ELECTRICAL ROUGH IN

- WALL TILE HERRINGBONE

SEE ELECTRICAL

- FOR ADDITIONAL INFORMATION

SEE PLUMBING FOR ADDITIONAL

INFORMATION

IPDL-2) S STEEL RECESSED-MOUNTED

CHROME, SIZE: CUSTOM

MIRROR 2' X 4', CUSTOM G (OFFSET EDGES OF

IG (OFFSET EDGES OF

![](_page_193_Picture_23.jpeg)

![](_page_193_Picture_24.jpeg)

![](_page_194_Figure_0.jpeg)

ΤΟΙ	LET ACCESS	ORY LEGEND
TOILET A	CCESSORIES	
CODE	PRODUCT	DESCRIPTION
GB-1	GRAB BAR - 36"	MANUFACTURER: BOBRICK, MODEL #: B-6806-36
GB-2	GRAB BAR - 42"	MANUFACTURER: BOBRICK, MODEL #: B-6806-42
GB-3	GRAB BAR - 18"	MANUFACTURER: BOBRICK, MODEL #: B-6806-18
GB-4	GRAB BAR - 24"	MANUFACTURER: BOBRICK, MODEL #: B-6806-24
HD-1	HAND DRYER	MANUFACTURER: DYSON, AIRBLADE V (NICKEL) HAND DRYER
SN-1	SANITARY NAPKIN DISPOSAL	MANUFACTURER: MANUTACTURER BOBRICK, MODEL #: B-35139
TP-1	TOILET PAPER	MANUFACTURER: MANUTACTURER BOBRICK, MODEL #: B-2890
MI-1	MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 30027, SIZE: CUSTOM M FRAMELESS "FLOATING" MIRROR ON 3/4" THICK PAINTED BLOCKING ( PLYWOOD SO THEY ARE CONCEALED FROM VIEW) POLISHED EDGE
MI-2	MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 30027, SIZE: CUSTOM M FRAMELESS "FLOATING" MIRROR ON 3/4" THICK PAINTED BLOCKING ( PLYWOOD SO THEY ARE CONCEALED FROM VIEW) POLISHED EDGE
MI-3	MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 15161 NELLY, COLOR: CH 24" X 72"
US-1	URINAL SCREEN	MANUFACTURER: BOBRICK. 1045 WALL HUNG DESIGNER SERIES (HPDI
TLT-1	TOILET PARTITION	MANUFACTURER: KOALA KARE. KB310-SSRE HORIZONTAL STAINLESS S
BC-1	BABY CHANGING	MANUFACTURER: BOBRICK. 1042 OVERHEAD-BRACED (HPDL-2 )

![](_page_194_Picture_5.jpeg)

![](_page_195_Figure_0.jpeg)

ENLARGED	FLOOR PLAN	- WOMENS	RESTROOM	317 &	MENS RE	STROOM	314
SCALE: 3/8" = 1'-0"	REF: 1/A-106						

TOILET A	CCESSORIES	
CODE	PRODUCT	DESCRIPTION
GB-1	GRAB BAR - 36"	MANUFACTURER: BOBRICK, MODEL #: B-6806-36
GB-2	GRAB BAR - 42"	MANUFACTURER: BOBRICK, MODEL #: B-6806-42
GB-3	GRAB BAR - 18"	MANUFACTURER: BOBRICK, MODEL #: B-6806-18
GB-4	GRAB BAR - 24"	MANUFACTURER: BOBRICK, MODEL #: B-6806-24
HD-1	HAND DRYER	MANUFACTURER: DYSON, AIRBLADE V (NICKEL) HAND DRYER
SN-1	SANITARY NAPKIN DISPOSAL	MANUFACTURER: MANUTACTURER BOBRICK, MODEL #: B-35139
TP-1	TOILET PAPER	MANUFACTURER: MANUTACTURER BOBRICK, MODEL #: B-2890
MI-1	MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 30027, SIZE: CUSTOM MIR FRAMELESS "FLOATING" MIRROR ON 3/4" THICK PAINTED BLOCKING (OF PLYWOOD SO THEY ARE CONCEALED FROM VIEW) POLISHED EDGE
MI-2	MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 30027, SIZE: CUSTOM MIR FRAMELESS "FLOATING" MIRROR ON 3/4" THICK PAINTED BLOCKING (OF PLYWOOD SO THEY ARE CONCEALED FROM VIEW) POLISHED EDGE
MI-3	MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 15161 NELLY, COLOR: CHR 24" X 72"
US-1	URINAL SCREEN	MANUFACTURER: BOBRICK. 1045 WALL HUNG DESIGNER SERIES (HPDL-2
TLT-1	TOILET PARTITION	MANUFACTURER: KOALA KARE. KB310-SSRE HORIZONTAL STAINLESS STE
BC-1	BABY CHANGING	MANUFACTURER: BOBRICK. 1042 OVERHEAD-BRACED (HPDL-2 )

![](_page_196_Figure_0.jpeg)

2 ENLARGED RCP - MENS RESTROOM 128 & WOMENS RESTROOM 129 SCALE: 3/8" = 1'-0" REF: 1/A-124

C4

C4)

τοι	LET ACCESS	ORY LEGEND
TOILET A	CCESSORIES	
CODE	PRODUCT	DESCRIPTION
GB-1	GRAB BAR - 36"	MANUFACTURER: BOBRICK, MODEL #: B-6806-36
GB-2	GRAB BAR - 42"	MANUFACTURER: BOBRICK, MODEL #: B-6806-42
GB-3	GRAB BAR - 18"	MANUFACTURER: BOBRICK, MODEL #: B-6806-18
GB-4	GRAB BAR - 24"	MANUFACTURER: BOBRICK, MODEL #: B-6806-24
HD-1	HAND DRYER	MANUFACTURER: DYSON, AIRBLADE V (NICKEL) HAND DRYER
SN-1	SANITARY NAPKIN DISPOSAL	MANUFACTURER: MANUTACTURER BOBRICK, MODEL #: B-35139
TP-1	TOILET PAPER	MANUFACTURER: MANUTACTURER BOBRICK, MODEL #: B-2890
MI-1	MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 30027, SIZE: CUSTOM FRAMELESS "FLOATING" MIRROR ON 3/4" THICK PAINTED BLOCKING PLYWOOD SO THEY ARE CONCEALED FROM VIEW) POLISHED EDGE
MI-2	MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 30027, SIZE: CUSTOM FRAMELESS "FLOATING" MIRROR ON 3/4" THICK PAINTED BLOCKING PLYWOOD SO THEY ARE CONCEALED FROM VIEW) POLISHED EDGE
MI-3	MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 15161 NELLY, COLOR: 24" X 72"
US-1	URINAL SCREEN	MANUFACTURER: BOBRICK. 1045 WALL HUNG DESIGNER SERIES (HF
TLT-1	TOILET PARTITION	MANUFACTURER: KOALA KARE. KB310-SSRE HORIZONTAL STAINLES
BC-1	BABY CHANGING	MANUFACTURER: BOBRICK. 1042 OVERHEAD-BRACED (HPDL-2 )

![](_page_196_Figure_3.jpeg)

![](_page_196_Picture_4.jpeg)

AND ELEVATIONS

SHEET NUMBER:

**\-616** 

![](_page_197_Figure_0.jpeg)

![](_page_197_Picture_1.jpeg)

3 ENLARGED FINISH PLAN - WOMENS RESTROOM 260 & MENS RESTROOM 261 SCALE: 3/8" = 1'-0" REF: 1 /A-704

![](_page_197_Figure_3.jpeg)

![](_page_197_Picture_5.jpeg)

## TOILET ACCESSORY LEGEND

TOILET A	CCESSORIES	
CODE	PRODUCT	DESCRIPTION
GB-1	GRAB BAR - 36"	MANUFACTURER: BOBRICK, MODEL #: B-6806-36
GB-2	GRAB BAR - 42"	MANUFACTURER: BOBRICK, MODEL #: B-6806-42
GB-3	GRAB BAR - 18"	MANUFACTURER: BOBRICK, MODEL #: B-6806-18
GB-4	GRAB BAR - 24"	MANUFACTURER: BOBRICK, MODEL #: B-6806-24
HD-1	HAND DRYER	MANUFACTURER: DYSON, AIRBLADE V (NICKEL) HAND DRYER
SN-1	SANITARY NAPKIN DISPOSAL	MANUFACTURER: MANUTACTURER BOBRICK, MODEL #: B-35139
TP-1	TOILET PAPER	MANUFACTURER: MANUTACTURER BOBRICK, MODEL #: B-2890
MI-1	MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 30027, SIZE: CUSTOM MIRROF FRAMELESS "FLOATING" MIRROR ON 3/4" THICK PAINTED BLOCKING (OFFSE PLYWOOD SO THEY ARE CONCEALED FROM VIEW) POLISHED EDGE
MI-2	MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 30027, SIZE: CUSTOM MIRROF FRAMELESS "FLOATING" MIRROR ON 3/4" THICK PAINTED BLOCKING (OFFSE PLYWOOD SO THEY ARE CONCEALED FROM VIEW) POLISHED EDGE
MI-3	MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 15161 NELLY, COLOR: CHROME 24" X 72"
US-1	URINAL SCREEN	MANUFACTURER: BOBRICK. 1045 WALL HUNG DESIGNER SERIES (HPDL-2)
TLT-1	TOILET PARTITION	MANUFACTURER: KOALA KARE. KB310-SSRE HORIZONTAL STAINLESS STEEL F
BC-1	BABY CHANGING	MANUFACTURER: BOBRICK. 1042 OVERHEAD-BRACED (HPDL-2 )

![](_page_197_Figure_10.jpeg)

![](_page_197_Figure_11.jpeg)

ENLARGED FLOOR PLAN - WOMENS RESTROOM 260 & MENS RESTROOM 261 SCALE: 3/8" = 1'-0" REF: 1 /A-110

![](_page_197_Picture_14.jpeg)

- REMOVABLE PANEL

INFORMATION

- FOR ADDITIONAL

SEE ELECTRICAL

ELECTRICAL ROUGH

ARCHITECT TO PROVIDE ROUGH IN DIMENSIONS FOR SCONCES PRIOR TO

2" X 10" PORCELAIN - WALL TILE HERRINGBONE

![](_page_198_Figure_0.jpeg)

![](_page_198_Figure_1.jpeg)

5 INTERIOR WALL SECTION SCALE: 3/4" = 1'-0" REF: 4/A-601

 INTERIOR WALL SECTION

 SCALE:
 3/4" = 1'-0"

 REF:
 3 /A-601

3 INTERIOR WALL SECTION SCALE: 3/4" = 1'-0" REF: 1/A109

2 INTERIOR WALL SECTION SCALE: 3/4" = 1'-0" REF: 3 /A-601

![](_page_198_Picture_8.jpeg)

![](_page_198_Picture_9.jpeg)

 SECTION DETAIL

 SCALE:
 | |/2" = |'-0"
 REF: 3 /A-621

![](_page_198_Picture_11.jpeg)

![](_page_199_Figure_0.jpeg)

![](_page_199_Picture_4.jpeg)

![](_page_200_Figure_0.jpeg)

![](_page_200_Picture_1.jpeg)

- SCHEDULED CEILING -SEE RCP

GYPSUM BOARD - 3-5/8" METAL STUD

CL" FIXTURE - SEE LIGHTING SCHEDULE. COORDINATE EXACT LOCATION W/ ARCHITECT PRIOR TO INSTALLATION

TO MATCH HPDL-1 ON Z-CLIPS WITH 3/4 PLYWOOD BACKER ON 2-1/2" METAL STUDS

— MITERED CORNERS TYP. - 3/4" STAINED BIRCH PLYWOOD

— 2-1/2" METAL STUD

FINI	SH LEGEND						
FLOOR FI	NISHES				WAI	L FINISHES	
CODE	PRODUCT	MANUFACTURER	DESCRIPTION	LOCATION	CODE	PRODUCT	MANUFACTURER
CPT-1	MODULAR CARPET (FIELD)	INTERFACE	COLLECTION: OPEN AIR, PRODUCT: 401, COLOR: 106780 LI	IEN, SIZE: 25CM X 1M, INSTALL PATTERN: ASHLAR, INSTALL PER MANUFACTURER STANDARDS, REP. NAME: LORI BAILEY, REP. EMAIL:	PNT-1	PAINT (GENERAL)	SHERWIN WILLIAMS
			LORI.BAILEY@INTERFACE.COM, REP. PHONE: 205-821-640.		PNT-2	PAINT (GENERAL)	SHERWIN WILLIAMS
CPT-2	MODULAR CARPET	INTERFACE	COLLECTION: OPEN AIR, PRODUCT: 420, COLOR: 107065 LII LORI.BAILEY@INTERFACE.COM, REP. PHONE: 205-821-640:	IEN, SIZE: 50CM X 50CM, INSTALL PATTERN: ASHLAR, INSTALL PER MANUFACTURER STANDARDS, REP. NAME: LORI BAILEY, REP. EMAIL: ., BACKING: CUSHIONBAC RENEW	PNT-3	PAINT (GENERAL)	SHERWIN WILLIAMS
					PNT-4	PAINT (GENERAL)	SHERWIN WILLIAMS
			EMAIL: LORI.BAILEY@INTERFACE.COM, REP. PHONE: 205-8	21-6401, BACKING: CUSHIONBAC RENEW	AWF-1	ACOUSTICAL PANELS (FIELD INSTALLED SYSTEM)	ACOUSTITIAL
CPT-4	MODULAR CARPET	INTERFACE	COLLECTION: OPEN AIR STRIA, PRODUCT: 418 STRIA, COLO MANUFACTURER STANDARDS, REP. NAME: LORI BAILEY, RI	R: 103292 LINEN (CUSTOM STRIPES: HICKORY, CAYENNE, COPPER), SIZE: 50CM X 50CM, INSTALL PATTERN: MONOLITHIC, INSTALL PER P. EMAIL: LORI.BAILEY@INTERFACE.COM, REP. PHONE: 205-821-6401, BACKING: CUSHIONBAC RENEW	PP-1	LARGE FORMAT PORCELAIN PANEL	CREATIVE MATERILS CORPORATION
CPT-5	MODULAR CARPET	INTERFACE	COLLECTION: OPEN ENDED, COLOR: 103183 CAYENNE, SIZE LORI.BAILEY@INTERFACE.COM, REP. PHONE: 205-821-6403	: 25CM X 1M, INSTALL PATTERN: ASHLAR, INSTALL PER MANUFACTURER STANDARDS, REP. NAME: LORI BAILEY, REP. EMAIL: , BACKING: CUSHIONBAC RENEW	PWT-1	WALL TILE	ERGON
CPT-6	MODULAR CARPET	INTERFACE	COLLECTION: OPEN AIR STRIA, PRODUCT: 401 STRIA, COLO MANUFACTURER STANDARDS, REP. NAME: LORI BAILEY, RI	R: 103232 LINEN (CUSTOM STRIPES: HICKORY, CAYENNE, COPPER), SIZE: 25CM X 1M, INSTALL PATTERN: ASHLAR, INSTALL PER P. EMAIL: LORI.BAILEY@INTERFACE.COM, REP. PHONE: 205-821-6401, BACKING: CUSHIONBAC RENEW	PWT-3	WALL TILE WALL TILE	ERGON
CPT-7	MODULAR CARPET	INTERFACE	COLLECTION: NIGHTLIGHTS, PRODUCT: SOFT GLOW, COLO REP. EMAIL: LORI.BAILEY@INTERFACE.COM, REP. PHONE: 2	R: 107260 IRON POPPY, SIZE: 25CM X 1M, INSTALL PATTERN: ASHLAR, INSTALL PER MANUFACTURER STANDARDS, REP. NAME: LORI BAILEY, 05-821-6401, BACKING: CUSHIONBAC RENEW	PWT-4	WALL TILE	ERGON
					PWT-5	WALL TILE	ERGON
CPT-8	MODULAR CARPET	INTERFACE	LORI.BAILEY@INTERFACE.COM, REP. PHONE: 205-821-640:	, BACKING: CUSHIONBAC RENEW	PWT-6	WALL TILE	GARDEN STTE TILE
CPT-9	MODULAR CARPET	INTERFACE	COLLECTION: KNITSTITCH, COLOR: 103340 CHARCOAL/CAY	ENNE, SIZE: 50CM X 50CM, INSTALL PATTERN: ASHLAR, INSTALL PER MANUFACTURER STANDARDS, REP. NAME: LORI BAILEY, REP. EMAIL:	VWG-1	VINYL WALL GRAPHIC	KOROSEAL
			LORI.BAILEY@INTERFACE.COM, REP. PHONE: 205-821-640:	, BACKING: CUSHIONBAC RENEW	MGB-1	MAGNETIC GLASS BOARD	CORONA GROUP INC
LVT-1	LUXURY VINYL TILE	INTERFACE	PRODUCT: EARTHEN FORMS COLLECTION, PRODUCT: ON G MANUFACTURER STANDARDS, REP. NAME: LORI BAILEY, RI	RAIN 4.5 MM, COLOR: A03304 OILED WALNUT, SIZE: 25CM X 1M, INSTALL PATTERN: ASHLAR, INSTALL PER P. EMAIL: LORI.BAILEY@INTERFACE.COM, REP. PHONE: 205-821-6401,			
PFT-1	PORCELAIN FLOOR TILE	ERGON	PRODUCT: LOMBARDA, COLOR: GRIGIO, SURFACE: LAPPAT	D, SIZE: 60CM X 60CM, INSTALL PER MANUFACTURER STANDARDS,	MISCI	LLANEOUS - MILLWORK FINISHE	S
PFT-2	PORCELAIN FLOOR TILE	ERGON	PRODUCT: ELEGANCE PRO, COLOR: DARK GREY, SURFACE:	APPATO, SIZE: 30CM X 60CM, INSTALL PER MANUFACTURER STANDARDS,	CODE	PRODUCT	MANUFACTURER
PFT-3	PORCELAIN FLOOR TILE	ERGON	REP. NAME: PAUL HYDE, REP. EMAIL:PHYDE@EMILAMERIC PRODUCT: ELEGANCE PRO, COLOR: GREY, SURFACE: LAPPA REP. NAME: PAUL HYDE, REP. EMAIL: PHYDE@EMILAMERIC	A.COM, REP. PHONE: 703-342-80410, WITH EPOXY GROUT, COLOR: TBD TO, SIZE: 30CM X 60CM, INSTALL PER MANUFACTURER STANDARDS, A.COM, REP. PHONE: 703-342-80410, WITH EPOXY GROUT, COLOR: TBD	HPDL-1	HIGH PRESSURE DECORATIVE LAMINATE	WILSONART
PSC-1	POLISHED SEALED CONCRETE	PROSOCO	PRODUCT: CONSOLIDECK LS		HPDL-2	HIGH PRESSURE DECORATIVE LAMINATE	WILSONART
RSN-1	RESINOUS FLOORING	ELITE CRETE SYSTEMS	PRODUCT: HERMETIC STOUT FLOORING SYSTEM, COLOR: T	BD	HPDL-3	HIGH PRESSURE DECORATIVE LAMINATE	WILSONART
TRZ-1	TERRAZZO	TERRAZZO AND MARBLE SUPPLY	PRODUCT: TERROXY RESIN SYSTEMS,MB20-015V, COLOR: # #3-5, CHIPS: 100 - SIZE1.2- CHINA WHITE, INSTALL PER MAI	8046 PASSIVE, GRIT: 200, FILLER ATF-20, SEALER:,MIX: VEN EXPOSURE 80%: 100% - CHINA WHITE IUFACTURER STANDARDS	HPDL-4	HIGH PRESSURE DECORATIVE LAMINATE	WILSONART
TRZ-2	TERRAZZO	TERRAZZO AND MARBLE SUPPLY	PRODUCT: TERROXY RESIN SYSTEMS,MB20-015V, COLOR: 1 CHIPS: 100 - SIZE1.2- CHINA WHITE, INSTALL PER MANUFA	BD, GRIT: 200, FILLER ATF-20, SEALER:,MIX: VEN EXPOSURE 80%: 100% - CHINA WHITE #3-5, CTURER STANDARDS	HPDL-5	HIGH PRESSURE DECORATIVE LAMINATE	WILSONART
TRZ-3	TERRAZZO	TERRAZZO AND MARBLE	PRODUCT: TERROXY RESIN SYSTEMS,MB20-015V, COLOR: T	BD, GRIT: 200, FILLER ATF-20, SEALER:,MIX: VEN EXPOSURE 80%: 100% - CHINA WHITE #3-5, TURER STANDARDS	WD -1 WD -2	WOOD VENEER	-
WOS-1	WALK OFF CARPET	INTERFACE	PRODUCT: STEP REPEAT COLLECTION, COLOR: TBD		07-1		
		DODDE			07-2		
KR1-1	RUBBER STAIR TREAD	KOPPE	PRODUCT: RUBBER STAIR TREAD, PROFILE: #93 TEXTURED	JESIGN, COLOR: COLOR: 174 SMOKE			WILSONART
BASE FIN	ISHES				STN -1	WOOD STAIN	-
CODE	PRODUCT	MANUFACTURER	DESCRIPTION		STN -2	WOOD STAIN	-
WDB-1	PAINT GRADE WOOD BASE	MILLWORK SUBCONTRACTOR	PAINTED WOOD BASE, COLOR: PNT-1		ACP-1	ACRYLIC PANEL	3FORM
WDB-2			-		FINISH	GENERAL NOTES:	
RB-1	RUBBER BASE	ROPPE	CONTOURS PROFILED WALL BASE SYSTEM. #85 FASHION P	/6085. 6-1/4" X 1/4". COLOR: 174 SMOKE. CONTINUOUS ROLL GOODS ONLY. NO PRE-MOLDED OR INSIDE CORNER UNITS	1. COI 2. ALL	ITRACTOR SHALL CAREFULLY INSPECT EXISTIN FINISH MATERIAL TRANSITIONS SHALL BE CEN	IG TO REMAIN SUBFLOOR TO DETERMINE ITERED AND COVERED BY DOORS IN THE
PTB-1	TILE BASE	ERGON	PRODUCT: LOMBARDA, COLOR: GRIGIO, SURFACE: LAPPAT MANUFACTURER STANDARDS, REP. NAME: PAUL HYDE, RE	D, SIZE: 60CM X 60CM, SIZE: 4" TALL CUT TILE (SEE CORRESPONDING ELEVATIONS AND DETAILS), INSTALL PER P. EMAIL: PHYDE@EMILAMERICA.COM, REP. PHONE: 703-342-80410, WITH EPOXY GROUT, COLOR: TBD	3. ALL	FINISH MATERIALS SHALL BE INSTALLED BASE	D ON EACH MANUFACTURER'S PUBLISHE
PTB-2	TILE BASE	ERGON	PRODUCT: ELEGANCE PRO, COLOR: GREY, SURFACE: LAPPA MANUFACTURER STANDARDS, REP. NAME: PAUL HYDE, RE	TO, SIZE: 60CM X 120CM, SIZE: 4" TALL CUT TILE (SEE CORRESPONDING ELEVATIONS AND DETAILS), INSTALL PER P. EMAIL: PHYDE@EMILAMERICA.COM, REP. PHONE: 703-342-80410, WITH EPOXY GROUT, COLOR: TBD			
PTB-3	TILE BASE	ERGON	PRODUCT: ELEGANCE PRO, COLOR: GREY, SURFACE: LAPPA MANUFACTURER STANDARDS, REP. NAME: PAUL HYDE, RE	TO, SIZE: 60CM X 120CM, SIZE: 4" TALL CUT TILE (SEE CORRESPONDING ELEVATIONS AND DETAILS), INSTALL PER P. EMAIL: PHYDE@EMILAMERICA.COM, REP. PHONE: 703-342-80410, WITH EPOXY GROUT, COLOR: TBD			
TZB-1	TERRAZZO BASE	TERRAZZO AND MARBLE SUPPLY	HEIGHT: 6" PRODUCT: TERROXY RESIN SYSTEMS,MB20-015 CHINA WHITE #3-5, CHIPS: 100 - SIZE1.2- CHINA WHITE, IN:	V, COLOR: #8046 PASSIVE, GRIT: 200, FILLER ATF-20, SEALER:,MIX: VEN EXPOSURE 80%: 100% - ITALL PER MANUFACTURER STANDARDS			
Tou							
		KY LEGEND				g legend	
TOILET ACC	SSORIES					DECODIDITION	

CCESSORIES	
PRODUCT	DESCRIPTION
GRAB BAR - 36"	MANUFACTURER: BOBRICK, MODEL #: B-6806-36
GRAB BAR - 42"	MANUFACTURER: BOBRICK, MODEL #: B-6806-42
GRAB BAR - 18"	MANUFACTURER: BOBRICK, MODEL #: B-6806-18
GRAB BAR - 24"	MANUFACTURER: BOBRICK, MODEL #: B-6806-24
HAND DRYER	MANUFACTURER: DYSON, AIRBLADE V (NICKEL) HAND DRYER
SANITARY NAPKIN DISPOSAL	MANUFACTURER: MANUTACTURER BOBRICK, MODEL #: B-35139
TOILET PAPER	MANUFACTURER: MANUTACTURER BOBRICK, MODEL #: B-2890
MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 30027, SIZE: CUSTOM MIRROR 2' X 4', CUSTOM FRAMELESS "FLOATING" MIRROR ON 3/4" THICK PAINTED BLOCKING (OFFSET EDGES OF PLYWOOD SO THEY ARE CONCEALED FROM VIEW) POLISHED EDGE
MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 30027, SIZE: CUSTOM MIRROR 2' X 4', CUSTOM FRAMELESS "FLOATING" MIRROR ON 3/4" THICK PAINTED BLOCKING (OFFSET EDGES OF PLYWOOD SO THEY ARE CONCEALED FROM VIEW) POLISHED EDGE
MIRROR	MANUFACTURER: MIRROR IMAGE, MODEL #: 15161 NELLY, COLOR: CHROME, SIZE: CUSTOM 24" X 72"
URINAL SCREEN	MANUFACTURER: BOBRICK. 1045 WALL HUNG DESIGNER SERIES (HPDL-2)
TOILET PARTITION	MANUFACTURER: KOALA KARE. KB310-SSRE HORIZONTAL STAINLESS STEEL RECESSED-MOUNTED
BABY CHANGING	MANUFACTURER: BOBRICK. 1042 OVERHEAD-BRACED (HPDL-2 )
	CCESSORIES         PRODUCT         GRAB BAR - 36"         GRAB BAR - 42"         GRAB BAR - 18"         GRAB BAR - 24"         HAND DRYER         SANITARY NAPKIN DISPOSAL         TOILET PAPER         MIRROR         MIRROR         URINAL SCREEN         TOILET PARTITION         BABY CHANGING

APPI	APPLIANCE LEGEND							
	SSORIES							
CODE	PRODUCT	DESCRIPTION						
C-1	ADA ICE MACHINE	MANUFACTURER: WHIRLPOOL, MODEL #: WUI75X15HZ, COLOR: STAINLESS STEEL						
DW-1	ADA DISH WASHER	MANUFACTURER: WHIRLPOOL, MODEL #: WDT550SAPZ, COLOR: STAINLESS STEEL						
WW-1	MICROWAVE	MANUFACTURER: WHIRLPOOL, MODEL #: WMCS7022RZ, COLOR: STAINLESS STEEL						
RF-1	REFRIDGERATOR	MANUFACTURER: WHIRLPOOL, MODEL #: WRFF3236RZ, COLOR: STAINLESS STEEL						

PLU	JMBING LEG	GEND
TOILET A	CCESSORIES	
CODE	PRODUCT	DESCRIPTION
SK-1	TOILET SINK	MANUFACTURER: KOHLER, VERTICYL 19 3/4" UNDERMOUNT S
SK-2	KITCHEN SINK	MANUFACTURER: KOHLER, VAULT 24" UNDERMOUNT SINGLE-
FC-1	TOILET FAUCET	MANUFACTURER: SLOAN ETF-410-BOX-BDM-CP-0.5GPM-MLM
FC-2	KITCHEN FAUCET	MANUFACTURER: KOHLER, CRUE, K-22972-CP
SD-1	SOAP DISPENSOR	MANUFACTURER: SLOAN, ESD-410-CP, CODE 3346160
TL-1	TOILET	SEE PLUMBING DRAWINGS
UR-1	URINAL	SEE PLUMBING DRAWINGS
WC-1	WATER COOLER	MANUFACTURER: ELKAY; LZWS-LRPBM28K EZH2O

D	ESCRIPTION
	COLOR: SW7626, ZURICH WHITE, 259-C2, FINISH: TYP. EGG SHELL, AT CEILINGS - FLAT, AT RESTROOMS EPOXY PAINT
	COLOR: SW7642, PAVESTONE, 283-C5, FINISH: EGG SHELL
	COLOR: SW6328, FIREWEED, 114-C7, FINISH: EGG SHELL
I	COLOR: SW7017, DORIAN GREY, 244-C3, FINISH: EGG SHELL
	FIELD APPLIED FABRIC WRAPPED ACOUSTICAL INFILL TRAC PROFILE: 1" DEEP SQUARE EDGE TRAC, WHISPERTONE WALLBOARD, RIGID FIBERGLASS BOARD, TACKABLE AND IMPACT RESISTANT FABRIC: CARNEGIE XOREL, LINEN, 6291W, 6
	PRODUCT: COLORBASE, COLOR: DOVE, FINISH: MATTE, THICKNESS: 9 MM, INSTALL PER MANUFACTURER STANDARDS,
	PRODUCT: LOMBARDA, COLOR: GRIGIO, SURFACE: LAPPATO, SIZE: 60CM X 60CM, PATTERN: OFFSET, INSTALL PER MANUFACTURER STANDARDS, REP. NAME: PAUL HYDE, REP. EMAIL: PHYDE@EMILAMERICA.COM, REP. PHONE: 703-342-80410, WITH EPOXY GROUT, COLOR: TBD
	PRODUCT: ELEGANCE PRO, COLOR: DARK GREY, SURFACE:LAPPATO, SIZE: 30CM X 60CM, PATTERN: OFFSET, INSTALL PER MANUFACTURER STANDARDS, REP. NAME: PAUL HYDE, REP. EMAIL:PHYDE@EMILAMERICA.COM, REP. PHONE: 703-342-80410, WITH EPOXY GROUT, COLOR: TBD
	PRODUCT: ELEGANCE PRO, COLOR: GREY, SURFACE: LAPPATO, SIZE: 30CM X 60CM, PATTERN: OFFSET, INSTALL PER MANUFACTURER STANDARDS, REP. NAME: PAUL HYDE, REP. EMAIL: PHYDE@EMILAMERICA.COM, REP. PHONE: 703-342-80410, WITH EPOXY GROUT, COLOR: TBD
	PRODUCT: ELEGANCE PRO, COLOR: DARK GREY, SURFACE: MURAL, SIZE: 30CM X 60CM, PATTERN: OFFSET, INSTALL PER MANUFACTURER STANDARDS, REP. NAME: PAUL HYDE, REP. EMAIL:PHYDE@EMILAMERICA.COM, REP. PHONE: 703-342-80410, WITH EPOXY GROUT, COLOR: TBD
	PRODUCT: ELEGANCE PRO, COLOR: GREY, SURFACE: MURAL, SIZE: 30CM X 60CM, PATTERN: OFFSET, INSTALL PER MANUFACTURER STANDARDS, REP. NAME: PAUL HYDE, REP. EMAIL: PHYDE@EMILAMERICA.COM, REP. PHONE: 703-342-80410, WITH EPOXY GROUT, COLOR: TBD PRODUCT: BEACON, COLOR: MIST, GLOSSY, GSW2034412E, SIZE: 2" X 10", PATTERN: HERRINGBONE, INSTALL PER MANUFACTURER STANDARDS, WITH EPOXY GROUT, COLOR: TBD
	VINYL WALL GRAPHIC DIGITAL WALLCOVERING, EGGSHELL SUBSTRATE, WHITE
	FRAMELESS GLASS, MAGNETIC, MARKERBOARDS, SIZE: SEE ELEVATIONS
	FRAMELESS GLASS, MAGNETIC, MARKERBOARDS, SIZE: SEE ELEVATIONS         DESCRIPTION
	FRAMELESS GLASS, MAGNETIC, MARKERBOARDS, SIZE: SEE ELEVATIONS         DESCRIPTION         PALISADES OAK 7987-38, FINISH: FINE VELVET , WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY
	FRAMELESS GLASS, MAGNETIC, MARKERBOARDS, SIZE: SEE ELEVATIONS
	FRAMELESS GLASS, MAGNETIC, MARKERBOARDS, SIZE: SEE ELEVATIONS
	FRAMELESS GLASS, MAGNETIC, MARKERBOARDS, SIZE: SEE ELEVATIONS
	FRAMELESS GLASS, MAGNETIC, MARKERBOARDS, SIZE: SEE ELEVATIONS         PALLESA GLASS, MAGNETIC, MARKERBOARDS, SIZE: SEE ELEVATIONS         DESCRIPTION         PALISADES OAK 7987-38, FINISH: FINE VELVET , WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         PEWTER MESH 4878-38, FINISH: FINE VELVET , WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         DOVE GREY, D92-60 MATTE FINISH, WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         ALUMASTEEL, 6277-00-419         HANDSPUN PEARL, 5033-38, FINISH: FINE VELVET TEXTURE, WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY
	FRAMELESS GLASS, MAGNETIC, MARKERBOARDS, SIZE: SEE ELEVATIONS         DESCRIPTION         PALISADES OAK 7987-38, FINISH: FINE VELVET , WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         PEWTER MESH 4878-38, FINISH: FINE VELVET , WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         DOVE GREY, D92-60 MATTE FINISH, WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         ALUMASTEEL, 6277-00-419         HANDSPUN PEARL, 5033-38, FINISH: FINE VELVET TEXTURE, WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         WOOD VENEER MILLWORK- RIFT SAWN WHITE OAK STAINED TO MATCH HPDL-1
	FRAMELESS GLASS, MAGNETIC, MARKERBOARDS, SIZE: SEE ELEVATIONS         DESCRIPTION         PALISADES OAK 7987-38, FINISH: FINE VELVET, WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         PEWTER MESH 4878-38, FINISH: FINE VELVET, WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         DOVE GREY, D92-60 MATTE FINISH, WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         ALUMASTEEL, 6277-00-419         HANDSPUN PEARL, 5033-38, FINISH: FINE VELVET TEXTURE, WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         WOOD VENEER MILLWORK- RIFT SAWN WHITE OAK STAINED TO MATCH HPDL-1         AFRICAN MAHOGANY, VENEER AND SOLIDS CUT TO PROVIDE WOOD GRAIN THAT MATCHES EXISTING TO REMAIN WOOD VENEER AND SOLIDS
	FRAMELESS GLASS, MAGNETIC, MARKERBOARDS, SIZE: SEE ELEVATIONS         PESCRIPTION         PALISADES OAK 7987-38, FINISH: FINE VELVET, WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         PEWTER MESH 4878-38, FINISH: FINE VELVET, WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         DOVE GREY, D92-60 MATTE FINISH, WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         ADVE GREY, D92-60 MATTE FINISH, WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         ADVE GREY, D92-60 MATTE FINISH, WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         ALUMASTEEL, 6277-00-419         HANDSPUN PEARL, 5033-38, FINISH: FINE VELVET TEXTURE, WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         WOOD VENEER MILLWORK- RIFT SAWN WHITE OAK STAINED TO MATCH HPDL-1         AFRICAN MAHOGANY, VENEER AND SOLIDS CUT TO PROVIDE WOOD GRAIN THAT MATCHES EXISTING TO REMAIN WOOD VENEER AND SOLIDS         PRODUCT: LOGAN PASS, Q4055 FINISH: POUSHED, THICKNESS: 3MM, EDGES: EASED, CONERS: ALL CORNERS MITERED, INSTALL PER MANUFACTURER STANDARDS, REP. NAME: SUZANVE KEETON KRAMER, REP. EMAIL: SKRAMAER, WURTHWOODGROUP.COM, REP. PHONE: 205-532-9500
	FRAMELESS GLASS, MAGNETIC, MARKERBOARDS, SIZE: SEE ELEVATIONS         DESCRIPTION         PALISADES OAK 7987-38, FINISH: FINE VELVET, WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         PEWTER MESH 4878-38, FINISH: FINE VELVET, WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         DOVE GREY, D92-60 MATTE FINISH, WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         ALUMASTEEL, 6277-00-419         HANDSPUN PEARL, 5033-38, FINISH: FINE VELVET TEXTURE, WITH ÆON™ WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT, SCRATCH RESISTANT TECHNOLOGY         WOOD VENEER MILLWORK- RIFT SAWN WHITE OAK STAINED TO MATCH HPDL-1         AFRICAN MAHOGANY, VENEER AND SOULDS CUT TO PROVIDE WOOD GRAIN THAT MATCHES EXISTING TO REMAIN WOOD VENEER AND SOULDS         PRODUCT: LOGAN PASS, Q4055 FINISH: POLISHED, THICKNESS: 3MM, EDGS: EASED, CONERS: AUL CORNERS MITERED, INSTALL PER MANUFACTURER STANDARDS, REP. NAME: SUZANNE KEETON KRAMER, REP. EMAIL: SKRAMER@WURTHWOODGROUP.COM, REP. PHONE: 205-532-9500         PRODUCT: UCGAN PASS, LINISH: EINS FUISHED, THICKNESS: 3MM, EDGS: EASED, CONERS: AUL CORNERS MITERED, INSTALL PER MANUFACTURER STANDARDS, REP. NAME: SUZANNE KEETON KRAMER, REP. EMAIL: SKRAMER@WURTHWOODGROUP.COM, REP. PHONE: 205-532-9500         PRODUCT: UCGAN PASS, Q4055 FINISH: POLISHED, THICKNESS: 3MM, EDGS: EASED, CONERS: AUL CORNERS MITERED, INSTALL PER MANUFACTURER STANDARDS, REP. NAME: SUZANNE KEETON KRAMER, REP. EMAIL: SKRAMER@WURTHWOODGROUP.COM, REP. PHONE: 205-532-9500         PRODUCT: UCGAN PASS, Q4055 FINISH: POLISHED, THICKNESS: SMM, EDGS: EASED, CONERS: AUL CORNERS MITERED, INSTALL PER MANUFACTURER STANDAR
	FRAMELESS GLASS, MAGNETIC, MARKERBOARDS, SIZE: SEE ELEVATIONS         DESCRIPTION         PALISADES OAK 7987-38, FINISH: FINE VELVET, WITH ÆON" WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         PEWTER MESH 4878-38, FINISH: FINE VELVET, WITH ÆON" WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         DOVE GREY, D92-60 MATTE FINISH, WITH ÆON" WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         ALUMASTEEL, 6277-00-419         HANDSPUN PEARL, 5033-38, FINISH: FINE VELVET TEXTURE, WITH ÆON" WEAR RESISTANT, SCUFF RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT, SCRATCH RESISTANT TECHNOLOGY         WOOD VENEER MILLWORK- RIFT SAWN WHITE OAK STAINED TO MATCH HPDL-1         AFRICAN MAHOGANY, VENEER AND SOLIDS CUT TO PROVIDE WOOD GRAIN THAT MATCHES EXISTING TO REMAIN WOOD VENEER AND SOLIDS         PRODUCT: LOGAN PASS, Q4055 FINISH: POLSHED, THICKNESS: SIMM, EDGES: EASED, CONERS: ALL CORNERS MITERED, INSTALL PER MANUFACTURER STANDARDS, REP. NAME: SUZANNE KEETON KRAMER, REP. EMAIL: SKRAME@WURTHWOODGROUP.COM, REP. PHONE: 205-532-9500         PRODUCT: DESERT VIEW, Q4043 FINISH: POLSHED, THICKNESS: SIMM, EDGES: EASED, CONERS: ALL CORNERS MITERED, INSTALL PER MANUFACTURER STANDARDS, REP. NAME: SUZANNE KEETON KRAMER, REP. EMAIL: SKRAME@WURTHWOODGROUP.COM, REP. PHONE: 205-532-9500         PRODUCT: DESERT VIEW, Q4043 FINISH: POLSHED, THICKNESS: SIMM, EDGES: EASED, CONERS: ALL CORNERS MITERED, INSTALL PER MANUFACTURER STANDARDS, REP. NAME: SUZANNE KEETON KRAMER, REP. EMAIL: SKRAME@WURTHWOODGROUP.COM, REP. PHONE: 205-532-9500         PRODUCT: DESERT VIEW, Q4043 FINISH: POLSHED, THICKNESS: SIMM, EDGES: EASED, CONERS: ALL CORNERS MITERED, INSTALL P
	FRAMELESS GLASS, MAGNETIC, MARKERBOARDS, SIZE: SEE ELEVATIONS         DESCRIPTION         PALISADES OAK 7987-38, FINISH: FINE VELVET, WITH ÆON" WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         PEWTER MESH 4878-38, FINISH: FINE VELVET, WITH ÆON" WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         DOVE GREY, D92-60 MATTE FINISH: WITH ÆON" WEAR RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         AUMASTEEL, 6277-00-419         HANDSPUN PEARL, 5033-38, FINISH: FINE VELVET TEXTURE, WITH ÆON" WEAR RESISTANT, SCUFF RESISTANT, SCUFF RESISTANT, SCRATCH RESISTANT TECHNOLOGY         WOOD VENEER MILLWORK- RIFT SAWN WHITE OAK STAINED TO MATCH HPDL-1         AFRICAN MAHOGANY, VENEER AND SOLIDS CUT TO PROVIDE WOOD GRAIN THAT MATCHES EXISTING TO REMAIN WOOD VENEER AND SOLIDS         PRODUCT: LOGAN PAS, Q4055 FINISH: POLISHED, THICKNESS: 3MM, EDGES: EASED, CONERS: ALL CORVERS MITRED, INSTALL PER MANUFACTURER STANDARDS,         REP. NAME: SUZANNE KEETON KRAMER, REP. EMAIL: SKRAMER@WURTHWOODGROUP.COM, REP. PHONE: 205-532-9500         TO MATCH HPDL-1, FINISH SHEEN; SEMI - GLOSS

JNT SINK, K-2882-U
IGLE-BOWL KITCHEN SINK K-3822-NA
MLM-BAA-FCT, CODE 3365794BT

![](_page_201_Picture_6.jpeg)

## FINISH PLAN SHEET NOTES

- 3" W TZ-1, TERRAZZO BORDER AT PERIMETER WALLS WITH 3/8 ZINC STRIP, TYP
   ALIGN TERRAZZO WITH FEATURE WALL PANELS, TYP.
   ALIGN TERRAZZO WITH EDGE OF COLUMM WRAPS, TYP.
   PAINT EXISTING WOOD BASE PNT-1, TYP. UNLESS OTHERWISED NOTED
   SEE DETAIL 2/A-724 FOR WALL MARKED BOTH AWP-1/MGB-1

![](_page_202_Figure_7.jpeg)

	CORRIDOR         STOR         STOR           119         117         120           PNT-1         PNT-1         PNT-1           RB-1         RB-1         RB-1           CPT-1         CPT-1         CPT-1	
RBAGE     3       111     A-613       PNT-1     A-613       PDT-1     MEN       114     MEN       PT-1     MEN       114     MEN       PT-1     MEN       PT-2     MEN       PT-3     MEN	ENG STORAGE 116	
ALLS WITH 3/8 ZINC STRIP, TYP TRZ-1	PNT-1 RB-1 CPT-1 STOR ELEV. 118 PNT-1 RB-1 PNT-1 RB-1 PNT-1 RB-1 PNT-1 RB-1 PNT-1 RB-1 PNT-1 RB-1 PT-3 PT-3 PT-	CORRIDOR CORRIDOR PNT-1 TZB-1 TZB-1
LIGN TERRAZZO WITH FEATURE WALL, TYP. $\downarrow QBBY$ IRZ-1 $\downarrow QBBY$ IRZ-1 $\downarrow IRZ-1, 2, 3$ $\downarrow IRZ-1$ $\downarrow IRZ-1, 2, 3$ $\downarrow IRZ-1$ $\downarrow IRZ-1$	RZ-1 A A A A A A A A A A A A A A A A A A A	
IRZ-1 A A A A A A A A A A A A A	RZ-1) A A A A A A A A A A A A A A A A A A A	
VESTIBULE 100 PNT-1 TZB-1 TRZ-1 A A A A A A A A A A A A A		
WOS-1 CPT-1 WOS-1 CPT-2 PNT-2 PNT-2 PNT-2 PNT-2 PNT-2 PNT-2 PNT-1 106 CPT-2 PNT-1 RB-1 CPT-2 PNT-1 CPT-2 PNT-2 PNT-1 CPT-2 PNT-2	/ENUE & GARBAGE         COLLECTION         108         S2         PNT-1         WB-1         CPT-1         RB-1         RBF-1	

![](_page_202_Picture_9.jpeg)

 TELECOM

 123

 PNT-1

 RB-1

 PSC-1

## FINISH PLAN SHEET NOTES

- 1. 3" W TZ-1, TERRAZZO BORDER AT PERIMETER WALLS WITH 3/8 ZINC STRIP, TYP
- 2. ALIGN TERRAZZO WITH FEATURE WALL PANELS, TYP.
- ALIGN TERRAZZO WITH EDGE OF COLUMM WRAPS, TYP.
   PAINT EXISTING WOOD BASE PNT-1, TYP. UNLESS OTHERWISED NOTED
- 5. SEE DETAIL 2/A-724 FOR WALL MARKED BOTH AWP-1/MGB-1

![](_page_203_Figure_5.jpeg)

![](_page_203_Picture_7.jpeg)

![](_page_204_Figure_0.jpeg)

![](_page_204_Picture_1.jpeg)

![](_page_205_Figure_0.jpeg)

![](_page_205_Picture_1.jpeg)

![](_page_206_Figure_0.jpeg)

![](_page_207_Figure_0.jpeg)

![](_page_207_Picture_1.jpeg)

![](_page_208_Figure_0.jpeg)

![](_page_208_Figure_3.jpeg)

![](_page_208_Figure_4.jpeg)

![](_page_208_Figure_5.jpeg)

7 MILLWORK DTL - ADA SLOPED SINK BASE W/ SHELF SCALE: 1 1/2" = 1'-0" REF: 1 /A109

![](_page_208_Figure_7.jpeg)

![](_page_208_Figure_8.jpeg)

1' - 3"

# 6 MILLWORK DTL - ADA SLOPED SINK BASE SCALE: | 1/2" = 1'-0" REF: | /A109

- LINE OF FINISHED CEILING

- REVEAL PAINTED TO MATCH CEILING

-+-

11" MIN. CLEAR

![](_page_208_Figure_10.jpeg)

CONCEALED FROM VIEW HPDL SLOPED BASE ON 3/4" SUBSTRATE, PROVIDE REMOVABLE PANEL W/ FULLY CONCEALED HARDWARE FOR EACH ACCESS TO PLUMBING - SEE ELEVATIONS FOR SIZE AND LOCATION OF PANELS

PROVIDE COUNTERTOP BRACKET EQUAL TO A&M HARDWARE 23" ADA VANITY BRACKET IN WHITE 933-58, BRACKET TO BE FULLY

TO HAVE MITERED EDGES - SEE MILLWORK SCHEDULE

FIXTURES - SEE PLUMBING DWGS - QUARTZ COUNTER AND APRON ON 3/4" SUBSTRATE, COUNTER

PLYWOOD SUBSTRATE) SCHEDULED PLUMBING

CUSTOM FRAMELESS "FLOATING" MIRROR ON 3/4" THICK PAINTED BLOCKING (OFFSET EDGES OF PLYWOOD SO THEY ARE CONCEALED FROM VIEW; PLYWOOD FRAME T BE ATTACHEDD DIRRECTLY TO

- DASHED LINE INDICATES TILE EXTENTS

![](_page_208_Figure_20.jpeg)

MILLWORK DTL - UPPER CABINET W/ MICROWAVE SHELF

![](_page_208_Picture_22.jpeg)

![](_page_209_Figure_0.jpeg)

![](_page_210_Figure_0.jpeg)

![](_page_210_Picture_6.jpeg)

							CII	T HAL	-L				
				DOOR						FRAME			
DOOR NO.	TYPE	WIDTH	HEIGHT	MATERIAL	FINISH	FIRE RATING	HARDWARE	TYPE	MATERIAL	FINISH	JAMB	HEAD	COMMENTS
ÎITY HALL - LEVEL 1													
CH101	D13	6' - 0"	7' - 0"	GL/ALUM	PRE-FINISHED		CH-AL-01	D13	ALUM	PRE-FINISHED	9/A-804	8/A-804	
CH102	D6	6' - 0"	8' - 6"	GL/WD	STN-2		CH-AL-02	SF15	ALUM	PRE-FINISHED	9/A-804	8/A-804	CARD READER / DOOR POSITION SWITCH / AUTO-OPERATOR
CH103	D1	3' - 0"	8' - 6"	GL/WD	PRE-FINISHED		CH-07.1	SF17	ALUM	PRE-FINISHED	7/A-804	6/A-804	CARD READER / DOOR POSITION SWITCH / AUTO-OPERATOR
CH104	D1	3' - 0"	8' - 6"	WD	STN-1		CH-14	F1	HM	PNT-2	1/A-804	1/A-804	
CH105	D1	3' - 0"	8' - 6"	WD	STN-1		CH-14	F1	HM	PNT-2	1/A-804	1/A-804	
CH106	D1	3' - 0"	8' - 6"	WD	STN-1		CH-14	F1	HM	PNT-2	1/A-804	1/A-804	
CH107	D4	3' - 0"	8' - 6"	WD	STN-1		CH-15	F1	HM	PNT-2	1/A-804	1/A-804	
CH109A		3' - 0"	8' - 0" 7' 0"				CH-AL-U3	SFU5 EVIST			9/A-804	5/A-804	
CH109B		3'-0"	7 - 0 8' - 6"		STN-1		CH-10	EAIST F1	HM		1/4-80/	1/4-80/	
CH110A	D9	3' - 0"	8' - 6"	HM	PNT-2		CH-05	F1	HM	PNT-2	1/A-804	1/A-804	
CH110A	D10	9' - 0"	8' - 0"	STL	PRE-FINISHED			11	STL	1111 2	177 004		AUTOMATIC GARAGE DOOR
CH110C	D10	9' - 0"	8' - 0"	STL	PRE-FINISHED				STL				AUTOMATIC GARAGE DOOR
CH111	EXIST	3' - 0"	8' - 6"	EX-WD	EXIST		CH-06	EX	EX-HM	PNT-2	1/A-804	1/A-804	CARD READER / DOOR POSITION SWITCH
CH112	D1	3' - 0"	8' - 6"	WD	STN-2		CH-17	F1	НМ	PNT-2	1/A-804	1/A-804	
CH113	EXIST	3' - 0"	8' - 6"	WD	EX-STN		CH-18	EX	HM	PNT-2	1/A-804	1/A-804	
CH114	EXIST	3' - 0"	8' - 6"	WD	EX-STN		CH-18	EX	HM	PNT-2	1/A-804	1/A-804	
CH119	EXIST	3' - 0"	8' - 6"	EX-WD	EX-STN		CH-07.2	EX	EX-HM	PNT-2	1/A-804	1/A-804	CARD READER / DOOR POSITION SWITCH
CH121	EXIST	3' - 0"	7' - 0"	EX-HM	PRE-FINISHED		CH-02	EX	EX-ALUM	PRE-FINISHED	1/A-804	1/A-804	
S2-L1	EXIST	3' - 0"	7' - 0"	EX-ALUM	PRE-FINISHED		CH-01	EX	ALUM	PRE-FINISHED			CARD READER / DOOR POSITION SWITCH
CITY HALL - LEVEL 2													
CH200A	D3	3' - 0"	8' - 6"	GLASS	CLEAR		CH-19	SF20	ALUM	PRE-FINISHED	7/A-804	6/A-804	CARD READER / MOTION SENSOR (GLASS DOOR MOUNTED IN STOREFRO
CH209	D3	3' - 0"	8' - 6"	GL	CLEAR		СН-20	SF19	ALUM	PRE-FINISHED	7/A-804	6/A-804	GLASS DOOR MOUNTED IN STOREFRONT
CH211	D7	3' - 0"	8' - 0"	GL/ALUM	PRE-FINISHED				ALUM	PRE-FINISHED	9/A-804	5/A-804	
CH215A	D1	3' - 0"	8' - 6"	WD	STN-2		CH-13	F1	HM	PNT-2	1/A-804	1/A-804	
CH215B	D1	3' - 0"	8' - 6"	WD	STN-2		CH-10	F1	HM	PNT-2	1/A-804	1/A-804	
CH217	D5	3' - 0"	8' - 6"	GL/WD	STN-2		CH-16	F3	ALUM	PRE-FINISHED	7/A-804	6/A-804	
CH218	D8	6' - 0"	8' - 0''	GL/ALUM	PRE-FINISHED		CH-AL-04	SF03	ALUM	PRE-FINISHED	9/A-804	5/A-804	
CH223		3 - 0	8 - b	WD			CH-18				1/A-804	1/A-804	
CH225		3'-0"	8'-6"	WD							1/A-804	1/A-804	
<u>\$1-12</u>	FXIST	3'-0"	8'-6"	FX-WD	FX-STN		CH-04	F2	EX-HM	PNT-2	1/A-804	1/A-804	CARD READER / DOOR POSITION SWITCH
S2-L2	D12	3' - 0"	8' - 0"	WD	STN-2		CH-08	F1	НМ	PNT-2	1/A-804	1/A-804	
													· ·
CITY HALL - LEVEL 3													
CH300A	D1	3' - 0"	7' - 0"	WD	SIN-2		CH-07.1		HM	PNI-2	1/A-804	1/A-804	CARD READER / DOOR POSITION SWITCH
CH300B		3 - 0	7 - 0	WD				F1			1/A-804	1/A-804	
CH307	D1	3'-0"	7'-0"	WD	STN-2		CH-14	F3	HM	PNT-2	1/A-804	1/A-804	
CH308	D1	3' - 0"	7' - 0"	WD	STN-2		CH-14	F3	HM	PNT-2	1/A-804	1/A-804	
CH309	D1	3' - 0"	7' - 0"	WD	STN-2		CH-14	F3	HM	PNT-2	1/A-804	1/A-804	
CH310	D1	3' - 0"	7' - 0"	WD	STN-2		CH-14	F3	HM	PNT-2	1/A-804	1/A-804	
CH311A	D2	5' - 0"	7' - 0"	WD	STN-2		СН-09	F1	HM	PNT-2	1/A-804	1/A-804	
CH311B	D2	5' - 0"	7' - 0"	WD	STN-2		CH-09	F1	HM	PNT-2	1/A-804	1/A-804	
CH312	D11	3' - 0"	7' - 0"	WD	STN-2		CH-11	F1	HM	PNT-2	1/A-804	1/A-804	DOOR POSITION SWITCH / VENTED SEE ELECT
CH315	D1	3' - 0"	7' - 0"	WD	STN-2		CH-12	F1	HM	PNT-2	1/A-804	1/A-804	
CH325A	D2	5' - 0"	7' - 0"	WD	STN-2		CH-09	F1	HM	PNT-2	1/A-804	1/A-804	
CH325B	D2	5' - 0"	7' - 0"	WD	STN-2		CH-09	F1	HM	PNT-2	1/A-804	1/A-804	
СН335	D1	3' - U''	/ - U"	WD			CH-14	F3			1/A-804	1/A-804	
CH330		3 - U 3' - N"	7 - U 7' - ∩"	WD	STN-2 STN-2		CH-14	F2		PNT-2	1/A-804	1/A-004	
CH228	D1	3' - 0"	, - 0 7' - 0"	WD	STN-2		CH-14	F3	HM	PNT-2	1/4-004	1/Δ-RU1	
СНЗЗО	D1	3'-0"	7' - 0"	WD	STN-2		CH-14	F3	HM	PNT-2	1/Δ-804	1/4-804	
CH340	D1	3' - 0"	7' - 0"	WD	STN-2		CH-14	F3	HM	PNT-2	1/A-804	1/A-804	
CH344	D1	3' - 0"	7' - 0"	WD	STN-2		CH-12	F1	НМ	PNT-2	1/A-804	1/A-804	
CH345	D1	3' - 0"	7' - 0"	WD	STN-2		CH-17	F1	НМ	PNT-2	1/A-804	1/A-804	
CH347	D1	3' - 0"	7' - 0"	WD	STN-2		CH-14	F3	НМ	PNT-2	1/A-804	1/A-804	
CH351	D5	3' - 0"	7' - 0"	GL/WD	STN-2		CH-14	F1	НМ	PNT-2	1/A-804	1/A-804	
-	D5	3' - 0"	7' - 0"	GL/WD	STN-2		CH-14	F1	НМ	PNT-2	1/A-804	1/A-804	
CH352	55												

## DOOR SCHEDULE NOTES:

I. REFER TO LS100 FOR ADDITIONAL INFORMATION AND REQUIREMENTS OF DOOR, FRAME, HARDWARE, AND FUNCTIONAL REQUIREMENTS.

2. FIELD VERIFY DOORS THAT ARE NOTED TO BE EXISTING TO REMAIN. CONFIRM DOOR SIZE, LOCATION, AND MATERIAL MATCHES DOOR SCHEDULE. COMMUNICATE WITH ARCHITECT IF THERE ARE ANY DISCREPANCIES.

3. EXISTING DOORS TO BE KEYED TO MATCH NEW DOORS 4. ALL EXISTING, REMAINING HOLLOW METAL DOOR FRAMES ARE TO BE PAINTED (PNT-2) THROUGHOUT.

- 5. FIELD VERIFY SITE CONDITIONS WITH MANUFACTURER FOR ROUGH OPENING DIMENSIONS PRIOR TO FABRICATION.
- 6. ELECTRONIC DOOR DOOR HARDWARE DEVICES, CONDUIT, AND WIRING TO BE CONCEALED. COORDINATE WITH GLAZING CONTRACTOR WHERE ELECTRONIC DOOR HARDWARE WILL BE REQUIRED TO BE RUN IN MULLIONS TO CONCEAL WORK.
- 7. REFER TO ELECTRICAL DRAWINGS FOR ELECTRONIC AND SECURITY HARDWARE WIRING AND POWER INFORMATION.
- 8. SEE SPECIFICATIONS FOR MANUFACTURER AND INSTALLER QUALIFICATIONS OPERATION, DESIGN PRESSURE, GLAZING, ETC. 9. PRIOR TO BEGINNING DEMOLITION WORK, ALL EXISTING REMAINING INTERIOR WOOD DOORS AND HARDWARE ARE TO BE REMOVED FROM THE H.M. DOOR FRAMES TO PROTECT THESE FROM POSSIBLE DAMAGE. AT THIS TIME, THE CONDITION OF THESE ITEMS ARE TO CATALOGUED AND DOCUMENTED WITH PHOTOS THAT CAN BE USED FOR FUTURE REFERENCE IF DAMAGE DOES OCCUR. THE REMOVED ITEMS ARE TO BE STORED TO PROTECT THESE AND KEEP THE DOORS AND HARDWARE TOGETHER TO FACILITATE INSTALLING THESE TO THE ORIGINAL LOCATION AND POSITION. ANY DOORS ARE HARDWARE THAT ARE DAMAGED BY THE CONTRACTOR ARE TO BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
- 10. THE G.C. IS TO INCLUDE THE COST OF REFINISHING (SANDING AND RE-STAINING) TEN (10) DOORS IN THEIR BID. THE ARCHITECT WILL DETERMINE WHICH DOORS ARE TO BE REFINISHED USING THE PHOTOS/CATALOGUE PREPARED BY THE GC AT THE OUTSET OF THE JOB BEFORE REMOVING THESE ITEMS FROM THE DOOR FRAMES. ALL THE OTHER DOORS AND ASSOCIATED HARDWARE ARE TO BE CLEANED AND RE-INSTALLED WITHOUT BEING REFINISHED. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A CUSTOM STAIN COLOR THAT MATCHES THE EXISTING DOOR FINISH AND PROVIDING SAMPLES FOR APPROVAL BY THE ARCHITECT BEFORE REFINISHING THE DOORS IN THE FIELD.
- 11. ALL NEW STAINED WOOD DOORS IN THE CITY HALL AREA (REGIONS BUILDING) ARE TO BE PRE-FINISHED IN THE FACTORY USING A CUSTOM STAIN COLOR TO MATCH THE EXISTING WOOD DOOR FINISH (STN-2). ALL NEW STAINED WOOD DOORS IN THE COUNCIL CHAMBERS ARE ALSO TO BE PRE-FINISHED IN THE FACTORY USING A CUSTOM STAIN COLOR TO MATCH THE ARCHITECT'S SAMPLE. THE GC IS RESPONSIBLE FOR PROVIDING ENOUGH SAMPLES TO ACHIEVE THE SUCCESSFUL COLOR MATCH FORMULA THAT'S NEEDED TO OBTAIN THE ARCHITECT'S APPROVAL.
- 12. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL ELECTRONIC DOOR HARDWARE WITH OTHER ADJOINING HARDWARE AND THE CORRESPONDING DOORS AND FRAMES. WIRING FOR NEW OPENINGS IS TO BE CONCEALED FROM VIEW WITHIN WALLS AND DOOR FRAMES WITHOUT EXCEPTION. WIRING FOR EXISTING OPENINGS IS TO BE CONCEALED FROM VIEW TO THE GREATEST EXTENT POSSIBLE. SURFACE-MOUNTED WIRING THAT COULD HAVE BEEN CONCEALED IN WHOLE OR IN-PART AT AN EXISTING OPENING BUT WAS NOT BECAUSE A CONTRACTOR OPTED TO TAKE AN "EASY" OR "CONVENIENT" APPROACH TO THE INSTALLATION WILL BE SUBJECT TO REMOVAL AND REPLACEMENT TO ACHIEVE AN ACCEPTABLE APPEARANCE AT THE CONTRACTOR'S EXPENSE. COORDINATE ELECTRICAL WIRING ROUGH-INS WITH THE ARCHITECT BEFORE PROCEEDING WITH WORK IN THE FIELD TO AVOID POTENTIAL CONFLICTS. REFER TO THE ELECTRICAL DRAWINGS FOR ADDITIONAL INFO.

## TEMPERED GLASS REQUIREMENTS:

- 1. GLAZING IN FRAMED AND UNFRAMED SWINGING DOORS, EXCEPT IF THE GLASS OPENING WILL NOT ALLOW A 3" SPHERE TO PASS. 2. GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL ADJACENT TO A DOOR WHERE THE NEAREST EXPOSED EDGE OF THE GLAZING IS WITHIN A 24" ARC OF EITHER VERTICAL EDGE OF A DOOR IN CLOSED POSITION AND WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" ABOVE THE WALKING SURFACE. B. GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL IN WHICH THE EXPOSED AREA OF AND INDIVIDUAL PANE IS GREATER THAN 9 SQUARE FOOT, THE BOTTOM EDGE IS LESS THAN 18" ABOVE THE FLOOR, THE EXPOSED TOP EDGE IS GREATER THAN 36" ABOVE THE FLOOR, AND ONE OR MORE WALKING SURFACES ARE WITHIN 36" HORIZONTALLY OF THE PLANE OF THE GLAZING.
- 4. GLAZING ADJACENT TO STAIRWAYS, LANDINGS AND RAMPS WHEN WITHIN 36" HORIZONTALLY OF A WALKING SURFACE, WITHIN 60" HORIZONTALLY OF THE BOTTOM TREAD OF A STAIRWAY IN ANY DIRECTION, AND THE BOTTOM EDGE IS LASS THAN 60" ABOVE THE PLANE OR THE ADJACENT WALKING SURFACE.

![](_page_211_Figure_15.jpeg)

							CITY C	COUN	CIL				
				DOOR				FRAME					
DOOR NO.	TYPE	WIDTH	HEIGHT	MATERIAL	FINISH	FIRE RATING	HARDWARE	TYPE	MATERIAL	FINISH	JAMB	HEAD	COMMENTS
ITY COUNCIL-LEVEL	1												
CC122A	D1	3' - 0"	8' - 6"	WD	STN-1		CC-04	F1	НМ	PNT-2	1/A-804	1/A-804	CARD READER / DOOR POSITION SWITCH
CC122B	D7	3' - 0"	8' - 0"	GL/ALUM	PRE-FINISHED		CC-01	SF34	ALUM	PRE-FINISHED	9/A-804	5/A-804	CARD READER / DOOR POSITION SWITCH
CC123	D11	3' - 0"	8' - 6"	WD	STN-1		CC-04	F1	НМ	PNT-2	1/A-804	1/A-804	CARD READER / DOOR POSITION SWITCH / VENTED SEE ELECT
CC124	D11	3' - 0"	8' - 6"	WD	STN-1		CC-08	F1	НМ	PNT-2	1/A-804	1/A-804	DOOR POSITION SWITCH / VENTED SEE ELECT
CC125A	D7	3' - 0"	8' - 0"	GL/ALUM	PRE-FINISHED		CC-AL-02		ALUM	PRE-FINISHED	9/A-804	5/A-804	CARD READER / DOOR POSITION SWITCH
CC125B	D7	3' - 0"	8' - 0''	GL/ALUM	PRE-FINISHED		CC-AL-02		ALUM	PRE-FINISHED	9/A-804	5/A-804	CARD READER / DOOR POSITION SWITCH
CC125C	D7	3' - 0"	8' - 0"	GL/ALUM	PRE-FINISHED		CC-AL-02		ALUM	PRE-FINISHED	9/A-804	5/A-804	CARD READER / DOOR POSITION SWITCH
CC125D	D8	6' - 0"	8' - 6"	GL/ALUM	PRE-FINISHED		CC-AL-01		ALUM	PRE-FINISHED	9/A-804	5/A-804	CARD READER / DOOR POSITION SWITCH / AUTO-OPERATOR
CC126	D1	3' - 0"	8' - 6"	WD	STN-1		CC-04	F1	НМ	PNT-2	1/A-804	1/A-804	CARD READER / DOOR POSITION SWITCH
CC127	D1	3' - 0"	8' - 6"	WD	STN-1		CC-07	F1	НМ	PNT-2	1/A-804	1/A-804	
CC128	D1	3' - 0"	8' - 6"	WD	STN-1		CC-15	F1	НМ	PNT-2	1/A-804	1/A-804	
CC129	D1	3' - 0"	8' - 6"	WD	STN-1		CC-15	F1	НМ	PNT-2	1/A-804	1/A-804	
CC130A	D6	6' - 0"	8' - 6"	WD	STN-1		CC-05	F1	НМ	PNT-2	1/A-804	1/A-804	
CC130B	D1	3' - 0"	8' - 6"	WD	STN-1		CC-03	F1	НМ	PNT-2	1/A-804	1/A-804	CARD READER / DOOR POSITION SWITCH
CC131	D2	6' - 0"	8' - 6"	WD	STN-1		CC-06	F1	НМ	PNT-2	1/A-804	1/A-804	
CC132	D1	3' - 0"	<u> </u>	WD	STN-1		CC-10	F1	НМ	PNT-2	1/A-804	1/4-804	
CC133	D1	3' - 0"	<u> </u>	WD	STN-1		CC-07	F1	НМ	PNT-2	1/4-804	1/4-804	
TY COUNCIL-LEVEL CC236	2 D1	3' - 0" 3' - 0"	8' - 6" 8' - 6"	WD	STN-1		CC-08	F1	HM	PNT-2	1/A-804	1/A-804	DOOR POSITION SWITCH
		2' 0"	0 - 0					CE2E			7/4 904	1/A-004	
		3 - 0	8 - 4				CC-AL-U3	5FZ5			1/A-804	0/A-804	
CC239		3 - 0	8 - 0 8' C''				CC-08				1/A-804	1/A-804	
CC240	05	3 - 0	8 - 6	GL/WD	STN-1		CC-13	F1 52	HIVI	PINT-2	1/A-804	1/A-804	
CC241	D1	3 - U	δ-0				CC-09	г <u>э</u>			1/A-804	1/A-804	
CC242	D1	3 - U"	δ - 0"	WD			CC-09	r3 r2		PINI-Z	1/A-804	1/A-804	
CC243	D1	3 - U	δ-0				CC-09	г <u>э</u>			1/A-804	1/A-804	
	D1	3 - 0"	δ - δ	WD			CC-09	د۲ د۲		PINT-2	1/A-804	1/A-804	
CC245		3 - U"	δ - 0"	WD			CC-09	r3 r2		PINI-Z	1/A-804	1/A-804	
CC246	D1	2 - 10"	δ - δ	WD			CC-09	د۲ د۲		PINT-2	1/A-804	1/A-804	
00247	DI	3'-0"	δ' - b''	WD	SIN-1	CONTR	CC-09	F3	HIM	PNT-2	1/A-804	1/A-804	
CC248	01	3' - 0"	8'-6"	WD	SIN-1	60 MIN.	CC-04	1	HM	PNT-2	1/A-804	1/A-804	LAKU READER / DOOR POSITION SWITCH
CC251	D1	3' - 0"	8'-6"	WD	SIN-1		CC-09	+3	HM	PNI-2	1/A-804	1/A-804	
CC253	D1	3' - 0"	8' - 6"	GL/WD	STN-1		CC-04	SF31	ALUM	PRE-FINISHED	7/A-804	6/A-804	CARD READER
CC255	D1	2' - 6"	8' - 6"	WD	STN-1		CC-12	F1	HM	PNT-2	1/A-804	1/A-804	
CC257	D7	3' - 0"	8' - 4"	GL/WD	STN-1		CC-10	\$9	ALUM	PRE-FINISHED	7/A-804	6/A-804	CARD READER / DOOR POSITION SWITCH
CC258	D1	3' - 0"	8' - 6"	WD	STN-1		CC-04	SF25	HM	PNT-2	1/A-804	1/A-804	CARD READER / DOOR POSITION SWITCH
CC259	D1	3' - 0"	8' - 6"	WD	STN-1		CC-14	F1	HM	PNT-2	1/A-804	1/A-804	
CC260	D1	3' - 0"	8' - 6"	WD	STN-1		CC-14	F1	HM	PNT-2	1/A-804	1/A-804	
CC262	D5	3' - 0"	8' - 6"	GL/WD	STN-1		CC-02	SF27	ALUM	PRE-FINISHED	9/A-804	5/A-804	CARD READER / DOOR POSITION SWITCH
CC263	D3	3' - 0"	8' - 5 1/2"	GL	CLEAR		CC-16	SF28	GL	GL	10/A-804		
CC264	D7	3' - 0"	8' - 11"	GL/ALUM	PRE-FINISHED		CC-AL-03	SF29	ALUM	PRE-FINISHED	9/A-804	5/A-804	DOOR POSITION SWITCH

![](_page_211_Figure_18.jpeg)

+/- 16' - 8"

![](_page_211_Picture_21.jpeg)

and the second D12 WOOD DOOR WITH VISION LITE SEE SCHED. \*-----\* DII

![](_page_212_Figure_0.jpeg)

-G	NUMBER OF (BACK BOX) GANGS	MAG	MAGNETIC (IN CONTEXT OF DOOR LOCK HARDWARE)
G#C	CABLE: AWG GAUGE, #CONDUCTORS	MATV	MASTER ANTENNA TELEVISION
D	AT	MBPS MD	MEGABITS PER SECOND MOTION DETECTOR (EXCEPT IN CONTEXT OF A US STATE)
N VR	AMPERE(S)/AMP(S) AS REQUIRED	MDF	MAIN DISTRIBUTION FRAME (AKA; ER)
lC	ABOVE COUNTER (IN CONTEXT OF DEVICE MOUNTING)	MGMT	MANAGEMENT
CS	ACCESS CONTROL SYSTEM	MIIN	MINIMUM MINUTE
CI	ACTUATOR (OF AUTO DOOR)	MINS	MINUTES
DA	AMERICANS WITH DISABILITY ACT	MNS	MASS NOTIFICATION SYSTEM
FF	ABOVE FINISHED FLOOR	MIN I MP	MOUNT MEGAPIXEI
IFG H.I	ABOVE FINISHED GRADE	NC	NURSE CALL (EXCEPT IN CONTEXT OF A US STATE)
KA	ALSO KNOWN AS	NEC®	
NT			NATIONAL FIRE PROTECTION AGENCY® NETWORK INTERFACE CARD
PPROX	ANGLE PHYSICAL/POLISH CONNECTOR APPROXIMATELY		NOT IN CONTRACT
RCH	ARCHITECT (-URAL)	NO	NUMBER (IN CONTEXT OF WIRE GAUGE)
TC	ACOUSTICAL TILE CEILING	OAN	OVERALL SHIELD (IN CABLE)
	AUTOMATIC TRANSFER SWITCH	OC	ON CENTER
VIXA®	AUDIOVISUAL AND INTEGRATED	OFE	
	EXPERIENCE ASSOCIATION®	OFCI	OWNER FURNISHED/CONTRACTOR INSTALLED OPTICAL FIBER CONDUCTIVE PLENUM (RATED)
WG AS	AMERICAN WIRE GAUGE	OFNP	OPTICAL FIBER NON-CONDUCTIVE PLENUM (RATED)
ICSI®	BUILDING INFRASTRUCTURE CONSULTING	OFCR	
MC	SERVICES INTERNATIONAL®	OFNR	OFTICAL FIDER NON-CONDUCTIVE RISER (RATED) OWNER FURNISHED/OWNER INSTALLED
INIS SEG	BUILDING MANAGEMENT SYSTEM BELOW FINISHED GRADE	O/H	OVERHEAD
;	ONE-HUNDRED (IN CONTEXT OF PER UNIT COUNT)	OLTS	OPTICAL LOSS TEST SET
	CONDUCTOR	OPER	OPERATOR OUTSIDE PLANT
,,O CAM		OTDR	OPTICAL TIME DOMAIN REFLECTOMETER
AT	CATEGORY (IN CONTEXT OF UTP/ScTP/F/UTP CABLE)	PA	PUBLIC ADDRESS (PAGING)
ATV		PB PBB	PULL BOX PRIMARY BONDING BUSBAR (AKA: TMGB)
	CONTRACTOR FURNISHED/CONTRACTOR INSTALLED	PDU	POWER DISTRIBUTION UNIT
FOI	CONTRACTOR FURNISHED/OWNER INSTALLED	PIR	PASSIVE INFRARED (MOTION REQUEST TO EXIT)
L L	CENTER LINE	PLC PoE	PROGRAMMABLE LOGIC CONTROLLER POWER OVER ETHERNET
LG LK	CLOCK	PPE	PERSONNEL PROTECTION EQUIPMENT
MP	COMMUNICATIONS MULTIPURPOSE PLENUM RATED	PPF	PIXELS PER FOOT
MR	COMMUNICATIONS MULTIPURPOSE RISER RATED	PR PTE	PAIR PUSH TO EXIT
RAC	CARD READER	PVC	POLYVINYL CHLORIDE
TRL	CONTROL	QTY(S)	QUANTITY / QUANTITIES
U.	COPPER	RCVR	RECEIVER
В	DURESS BUTTON DECIBEI	REC	RECIEVE
BL	DOUBLE	PIO	
	DATA CENTER DESIGN CONSULTANT®	RTE	REQUEST-TO-EXIT (AKA; REX)
HC	DOOR HARDWARE CONTRACTOR (TYP. DIVISION 08)	RU	RACK UNIT, WHICH ROUGHLY EQUALS 1.75 INCHES
DIA	DIAMETER	RX SBB	RECEIVE(R) SECONDARY BONDING BUSBAR (AKA: TGB)
DIAG		SCS	STRUCTURED CABLING SYSTEM
ips C	ELECTRICAL CONTRACTOR	ScTP	SCREENED TWISTED PAIR
LEC	ELECTRICAL/ELECTRICALLY OPERATED	S/FTP SMS	SHIELDED, FOILED TWISTED PAIR
		STP	SHELDED TWISTED PAIR
S.	EQUIPMENT ROOM (ARA; MDF) ELECTRIC STRIKE	STR	STRANDED (IN CONTEXT OF CABLE CONDUCTORS)
X	EXISTING/EXISTING TO REMAIN	SYS TRR	SYSTEM TELECOMMUNICATIONS BONDING BACKBONE
XT ED		TBC	TELECOMMUNICATIONS BONDING CONDUCTOR
EP O	FIBER OPTIC	TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
OA®	FIBER OPTIC ASSOCIATION®	IMGB TR	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
OV	FIELD OF VIEW	TRANS	TRANSMITTER
ro T	FOOT/FEET	<b></b>	TRANSMISSION (IN CONTEXT OF BROADCASTING)
/UTP	FOIL SCREENED UNSHIELDED TWISTED PAIR		TRANSMIT(TER)
BA BBBS	GAUGE (EXCEPT IN CONTEXT OF US STATE)	UON	UNLESS OTHERWISE NOTED
BC	GENERAL CONTRACTOR	UPS	UNITERRUPTABLE POWER SUPPLY
HZ	GIGAHERTZ	UIP V	UNSHIELDED TWISTED PAIR VOLT(S)
	HAND HOLE	VA	VOLT AMPERE(S) (EXCEPT IN CONTEXT OF US STATE)
IORZ	HORIZONTAL(LY)	VERT	
0		VM VMS	VIRTUAL MACHINE VIDEO MANAGEMENT SYSTEM
2701		VolP	VOICE OVER IP
BC®	INTERNATIONAL BUILDING CODE®	VSS	
DF	INTERMEDIATE DISTRIBUTION FRAME (AKA; TR)	VV	WALL (IN CONTEXT OF DEVICE MOUNTING)
DS N	INTRUSION DETECTION SYSTEM	W/	WITH
NT	INTEGRATE/INTEGRATED	W/O	
_	INTERIOR	WAP Wi an	WIRELESS ACCESS POINT (RADIO) WIRELESS LOCAL AREA NETWORK
	INTERNET PROTOCOL	XR	EXISTING, REMOVE
ЭГ	ONE THOUSAND (IN CONTEXT OF PER UNIT COUNT)	XRB	EXISTING, REMOVE DEVICE & INSTALL BLANK COVER
	KELVIN	XRL XRP	EXISTING, RELOCATED EXISTING, REMOVE & REPLACE W/ NEW/
ANI	LOCAL AREA NETWORK	7 M M	LANDING, ALMOVE GIVE LAULE LAUL VV/ NEVV

LEGEND - STRUCTURED CABLING (UNIVERSAL MODEL)					
SYMBOL(S)	DESCRIPTION	BACK BOX ROUGH-IN**	TYP. ELEVATION U.O.N.***		
- <b>√</b> D	DATA OUTLET. D = # DATA CABLES.	RA	18" AFF		
<b>→</b> D	DATA OUTLET, ABOVE COUNTER. D = # DATA CABLES.	RA	6" ABOVE COUNTER		
<b>→</b> W	WALL PHONE, VOIP. 1 (ONE) DATA CABLE >>RESERVE 8" ALL AROUND THIS OUTLET BOX.<<	RA	54" AFF		
-◀ тс	EMPLOYEE TIME CLOCK. 1 (ONE) DATA CABLE. >>RESERVE 8" ALL AROUND THIS OUTLET BOX.<<	RA	48" AFF (REFER TO DETAILS)		
I → DS	DATA OUTLET W/ 1(ONE) CABLE FOR DIGITAL SIGNAGE.	RA	72" AFF		
<b>⊣</b> TVO	TV CATV OUTLET WITH 1 (ONE) RG-6U COAX AND 1(ONE) DATA CABLE.	SEE DETAILS	SEE DETAILS. SEE NOTES.		
◄ TV(N)	TV CATV OUTLET W/ "N" INCHES (DIAG) CLASS TV, MOUNT, 1(ONE) RG-6U COAX & 1(ONE) DATA CABLE	SEE DETAILS	SEE DETAILS		
-\$-D	WIRELESS ACCESS POINT - 2 (TWO) DATA CABLES. ****	SURFC MNT BOX	SEE DETAILS		
D	DATA FLOOR BOX, TYP SHARED W/ ELEC FLOOR BOX. D = # DATA CABLES.	SEE ELEC SHEETS	FLOOR		
文 D	CEILING MOUNTED DATA OUTLET. D = # DATA CABLES.	SURFC MNT BOX	CEILING		
* U.O.N. ALL VOICE AND DATA CABLING TO BE CATEGORY 6. REFER TO SPECIFICATIONS AND OTHER NOTES FOR CABLE JACKET COLORS, AND RATINGS.					
** FOR LETTER CODES, REFER TO "LEGEND - ROUGH-IN BOXES".					
*** FOR ALL ELEVATIONS, ARCHITECTURAL ELEVATIONS SUPERSEDE. ALSO REFER TO (TELE)COMMUNICATIONS DETAILS.					
****LEAVE 25' OF CABLE COILED AND SECURED ABOVE CEILING FOR RELOCATION OF WIRELESS ACCESS POINT AS REQUIRED.					

NOTE: NOT ALL DEVICES MAY BE USED OR SHOWN ON DRAWINGS.

SYMBOL	DESCRIPTION	BACK BOX ROUGH-IN**	TYP. ELEVATION UON.***	
CR	CARD READER. PROVIDE (1) CAT6 UTP (YELLOW)	RA-1	48"	
CRK	CARD READER WITH INTEGRATED KEYPAD. PROVIDE (1) CAT6 UTP (YELLOW)	RA-1	48"	
J	JUNCTION BOX, WITH COVER, FOR LOW VOLTAGE WIRING/SPLICING.	MIN. 4" X 4" X 4" COVERED.	ABOVE CEILING OF SECURE SIDE	
60	DOOR POSITION SWITCH (SHOWN ONLY WHEN NO OTHER ACS FUNCTION IS AT THAT DOOR)	NONE	TOP OF DOOR FRAME	
PTE	PUSH-TO-EXIT BUTTON, UL-294 LISTED, PLACED WITHIN 5' OF DOOR. (NOTE 2)	RA-1	48"	
PIR	PASSIVE INFRARED MOTION REQUEST-TO-EXIT, UL-294 LISTED (NOTE 2)	NONE (IF IN ACT)	CEILING	
KS	KEYSWITCH, FOR RESETTING DELAYED EGRESS ALARMS. (NOTE 2)	RA-1	48"	
ML	MAGNETIC LOCK, TYPICALLY BY DIV 08 (NOTE 2)	NONE	DOOR FRAME	
DML	DELAYED EGRESS MAG LOCK, TYP BY DIV 08 (NOTE 2)	NONE	DOOR FRAME	
ERB	EMERGENCY RELEASE BUTTON, LATCHING, WITH UL-294 LISTED RELAY WIRED IN SERIES WITH LOCK POWER TO LATCH THE DOOR UNLOCKED	RA-1	48"	
DRB	DOOR RELEASE BUTTON, MOMENTARY.	RA-1	18"	
DLB	DOOR LOCK BUTTON, LATCHING, USER RESETTABLE	RA-1	18"	
DB	DURESS BUTTON, LATCHING	RA-1	18"	
	VIDEO INTERCOM, WALL MOUNTED, WITH DOOR RELEASE RELAY	VARIES	48"	
	VIDEO INTERCOM MASTER, WITH REMOTE DOOR RELEASE ABILITY, DESK MOUNTED	RA-1	18"	
NOTE 1. FOR ASTERISKED NOTES, REFER TO STRUCTURED CABLING LEGEND.				

LEGEND - AUDIO VISUAL (AV)				
SYMBOL	DESCRIPTION	BACK BOX ROUGH-IN	TYP. ELEVATION UON***	
AV1	AV OVER IP ENCODER/ DTP TRANSMITTER WALLPLATE	RA-1 (UON) OR FLOOR BOX	18" (UON) OR FLOOR BOX	
AV2	AV OVER IP DECODER/ DTP RECEIVER	RA-1 (UON)	18" UON	
AV3	AUDIOVISUAL SCALER-SWITCHER	N/A	N/A	
ACP	AUDIOVISUAL TOUCHSCREEN CONTROL PANEL	RA-1 (UON)	TABLETOP OR 44"	
S	6-INCH, 70V COAXIAL PROGRAM CEILING SPEAKER W/GRILL	N/A	CEILING	
USB	USB-OVER-CAT6 TRANSMITTER WALLPLATE	RA-1 (UON)	18" (UON)	
Ø D	MICROPHONE XLR	RA-1 (UON)	TABLE TOP OR 18" (UON)	
HAA	HEARING ASSIST REMOTE ANTENNA	RA-1 (UON)	96" AFF (UON)	
WMA	WIRELESS MICROPHONE REMOTE ANTENNA	RA-1 (UON)	96" AFF (UON)	
CONDUIT ST	UB-UPS FOR AV DEVICES SHALL BE MIN	IMUM 1.25" TRADE	SIZE (UON).	
NOT	E: NOT ALL DEVICES MAY BE USED OR S	HOWN ON DRAWIN	NGS.	

LETTER RA-1 4-11/16"H X 4-11/16" RA-2 4-11/16"H X 4-11/16" R-NG-1 NON-GA R-NG-1C NON-GANGABLE, 1-GANG, 3. R-NG-3 NON-GA RM1 MM	DESCRIPTION* 1 X 3-1/4"D, W/ 1-GANG PLASTER RING.
RA-1       4-11/16"H X 4-11/16"         RA-2       4-11/16"H X 4-11/16"         R-NG-1       NON-GA         R-NG-1C       NON-GANGABLE, 1-GANG, 3.         R-NG-3       NON-GA         RM1       M         RM2       M	H X 3-1/4"D, W/ 1-GANG PLASTER RING.
RA-2     4-11/16"H X 4-11/16"       R-NG-1     NON-GA       R-NG-1C     NON-GANGABLE, 1-GANG, 3.       R-NG-3     NON-GA       RM1     M       RM2     M	
R-NG-1NON-GAR-NG-1CNON-GANGABLE, 1-GANG, 3R-NG-3NON-GARM1MRM2M	H X 3-1/4"D, W/ 2-GANG PLASTER RING.
R-NG-1     NON-GA       R-NG-1C     NON-GANGABLE, 1-GANG, 3.       R-NG-3     NON-GA       RM1     M       RM2     M	
R-NG-1CNON-GANGABLE, 1-GANG, 3.R-NG-3NON-GARM1MRM2M	JGABLE, 1-GANG, 3.5" DEEP
R-NG-3   NON-GA     RM1   Mu     RM2   Mu	5" DEEP, SUPPORTED BY CEILING GRID BRIDGE
RM1 M/ RM2 M/	NGABLE, 3-GANG, 3.5" DEEP
RM1 M RM2 M	
RM2 M	SONRY BOX; 1-GANG
	SONRY BOX; 2-GANG
RM3 M/	SONRY BOX; 3-GANG
RM4 M	SONRY BOX; 4-GANG

LEGEND - PATHWAYS				
SYMBOL	DESCRIPTION	TYP ELEVATION UON		
	HILTI SPEED SLEEVE - FIRE RATED RE-ENTERABLE	ABOVE CEILING		
	CONDUIT SLEEVE, EMT, MIN 1.5" ID	ABOVE CEILING		
]—[	HILTI SPEED SLEEVE - SMOKE-RATED RE-ENTERABLE	ABOVE CEILING		
J	SINGLE J-HOOKS, SPACED MAX 5' APART	ABOVE CEILING		
-2J	2-LEVEL J-HOOKS, SPACED MAX 5' APART	ABOVE CEILING		
-4J	4-LEVEL J-HOOKS, SPACED MAX 5' APART	ABOVE CEILING		
	LADDER RACK. REFER TO DETAILS	ABOVE CEILING OR RACK		
	CABLE TRAY. REFER TO DETAILS	ABOVE CEILING		
$\square$	TELECOM HAND HOLE. SEE SHEET NOTES	FLUSH W/ GRADE		

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v

SYMBOL	DESCRIPTION	BACK BOX ROUGH-IN**	TYP. ELEVATION UON.*
D	IP CAMERA LOCATION (TYP DOME TYPE) - PROVIDE 1 DATA CABLE.	SEE DETAILS / SCHEDULE	CEILING U.O.N.
	ROUGH-IN ONLY - PROVIDE 1 DATA CABLE FOR FUTURE IP CAMERA	SEE DETAILS / SCHEDULE	ABOVE CEILING U.O.N.
	ROUGH-IN ONLY - PROVIDE INFRASTRUCTURE AS NOTED FOR FUTURE OUTOOR REMOTE IP CAMERA	SEE PLAN NOTES	SEE PLAN NOTES
ζĈΣ	IP FISHEYE CAMERA - PROVIDE 1 DATA CABLE.	SEE DETAILS/ SCHEDULE	CEILING, U.O.N.
<b>V</b>	IP PAN TILT ZOOM CAMERA - PROVIDE 1 DATA CABLE AND 1 18G2C CABLE	SEE DETAILS/ SCHEUDULE	WALL, 15' AFG, U.O.N.
⊳∕ <b>C</b> ∕⊲	IP 180 DEGREE / 2 SENSOR CAMERA - PROVIDE 1 DATA CABLE	SEE DETAILS/ SCHEDULE	CEILING, U.O.N.
$\bowtie (\mathbf{c}) $	IP 360 DEGREE / 4 SENSOR CAMERA - PROVIDE 1 DATA CABLE	SEE DETAILS/ SCHEDULE	CEILING, U.O.N.
⊳(C)	ANALOG CAMERA LOCATION - PROVIDE ONE RG-59U & ONE 18G2C STRANDED CABLE	SEE DETAILS / SCHEDULE	CEILING U.O.N.
	ROUGH-IN ONLY - PROVIDE ONE RG-59U & ONE 18G2C STRANDED FOR FUTURE ANALOG CAMERA	SEE PLAN NOTES	ABOVE CEILING U.O.N.
IB	CAMERA INTERFACE BOX: STEEL ENCLOSURE WITH DATA CABLES FOR ALL CAMS SERVED. SEE DETAILS	12"X12"X6" NEMA 3R LOCKING ENCL.	ABOVE ACCESSIBLE CEILING.
MON	VIDEO SURVEILLANCE MONITORING SOFTWARE CLIENT, INSTALLED ON OWNER'S WORKSTATION	(USES DATA OUTLET ALREADY	(USES DATA OUTLET ALREADY SHOWN
Μ	MICROPHONE, AUDIO SURVEILLANCE - PROVIDE 22G1PR W/ OVERALL SHIELD AND DRAIN WIRE (WEST PENN 452	RA	CEILING, U.O.N.

"DATA CABLE" MEANS CABLE TERMINATED AND TESTED FOR MIN CAT 6 PERFORMANCE "RIO" INDICATION ON ANY CAMERA SYMBOL INDICATES "ROUGH-IN ONLY", TYPICALLY MEANING PROVIDE CONDUIT AND CABLE FOR A FUTURE CAMERA, BUT DO NOT PROVIDE THE CAMERA ITSELF. SYMBOL AND PLAN NOTES CAN SUPERCEDE THIS ...

LEGEND - CAMERA TYPE				
CAMERA CODE	TYPE CAPABILITY REQUIREMENTS	MFG	MODEL	
CA-###	DOME, INTERIOR, 4MP, HD, VARIFOCAL	ALIBI	ALI-PD42-VUZAI	
CB-###	DOME, INTERIOR, 2MP, HD, VARIFOCAL, WITH MASKING	ALIBI	ALI-FD20-VAW	
CC-###	360 DEGREE "FISHEYE", 2048 X 2048	ALIBI	ALI-PF51-VA-D	
CD-###	DOME, EXTERIOR, HD, VARIFOCAL	ALIBI	ALI-PD42-VUZAI	
CE-### PANORAMIC, EXTERIOR GRADE, 180 DEG FOV, HD, MULTISENSOR ALIBI ALI-PF80-VLUA				
CRITICAL NOTE: HIKVISION, DAHUA, AND THE OEM MODELS MADE BY THESE COMPANIES UNDER DIFFERENT LABELS ARE ALL FORBIDDEN. NO EXCEPTIONS.				
GENERAL NOTE: MANUFACTURERS AND MODELS ARE LISTED AS BASIS OF DESIGN. EXCEPT AS NOTED, ALTERNATE APPROVED EQUALS THAT SATISFY FEATURE CAPABILITY REQUIREMENTS MAY BE USED.				

GENERAL NOTES:

- A. THESE DRAWINGS ARE GENERALLY DIAGRAMMATIC IN NATURE AND EXCEPT WHERE SPECIFICALLY DIMENSIONED OR DETAILED, THEY INDICATE THE GENERAL ARRANGEMENT OF THE WORK. THE CONTRACTOR SHALL INSTALL HIS WORK TO CONFORM AS NEAR AS POSSIBLE TO THE LOCATIONS AND ARRANGEMENTS SHOWN, WITH ONLY SUCH MINOR ADJUSTMENTS AS NECESSARY. CONTRACTOR SHALL COORDINATE THE WORK WITH ALL OTHER TRADES TO AVOID INTERFERENCES.
- FOR ADDITIONAL DEVICE LOCATION INFORMATION, REFER TO ARCHITECTURAL ELEVATION DRAWINGS WHICH TAKE PRECEDENCE.
- PROJECT CABLING SHALL BE 100% PLENUM-RATED. WHERE CABLES ARE INSTALLED IN CONDUIT THAT IS PLACED IN-SLAB AND/OR BELOW GRADE, INDOOR/OUTDOOR, PLENUM-RATED CABLES SHALL BE INSTALLED.

D.	LOW-VOLTAGE CABLE	E TYPE AND JACKET COLOR-CODING SHALL BE AS FOLLOWS:
	BLUE =	GENERAL VOICE, DATA AND TV DISPLAYS (CAT 6 UTP)
	WHITE =	WIRELESS ACCESS POINTS (CAT 6A UTP)
	GREEN =	VIDEO SURVEILLANCE CAMERAS (CAT 6 UTP)
	YELLOW =	ACCESS CONTROLS (CAT6 UTP AND COMPOSITE CABLE)
	VIOLET =	AUDIOVISUAL HDMI EXTENSION (CAT 6 F/UTP)
	GRAY =	AUDIOVISUAL SPEAKERS (2 CONDUCTOR UTP)
	GRAY =	MICROPHONE (2 CONDUCTOR W/SHIELD)

GENERAL BONDING NOTES: (B-'X')

- B-A. BONDING TO THE STRUCTURAL BUILDING STEEL SHALL BE MADE USING EXOTHERMIC WELDING, LISTED IRREVERSIBLE HIGH-COMPRESSION FITTINGS, OR OTHER FITTINGS LISTED FOR USE IN LIGHTNING PROTECTION SYSTEMS PER THE NFPA 780-2023.
- B-B. METALLIC OBJECTS THAT ARE LOCATED WITHIN 6 FT. OF THE EXTERNAL GROUNDING (EARTHING) ELECTRODE SYSTEM, OR WITHIN 6 FT. OF A GROUNDED METALLIC ITEM, SHALL BE BONDED TO THE EXTERNAL GROUNDING ELECTRODE SYSTEM USING #6 AWG OR LARGER CONDUCTORS AS DESCRIBED IN "GROUNDING (EARTHING) CONDUCTORS" IN ANSI T1.334-2002, SECTION 5.3.3. BONDING TO THE METALLIC OBJECTS SHALL BE MADE AS ALLOWED BY THE MANUFACTURER. BONDING CONDUCTORS SHALL BE AS SHORT AND STRAIGHT AS POSSIBLE. METALLIC OBJECT TO BE BONDED INCLUDE BUT ARE NOT LIMITED TO: STORAGE CABINETS, BATTERY RACKS, METALLIC WINDOW FRAMES, DOORS AND DOOR FRAMES, METALLIC CEILING GRIDS, METALLIC RAISED FLOORING SYSTEMS, HVAC GRILLS, DUCTS, UNITS, MOTORS, MOTOR CONTROLLERS, CONTROL PANELS, JUNCTION AND TERMINAL BOXES, PANELBOARDS, SWITCHBOARDS, AUTOMATIC AND MANUAL TRANSFER SWITCHES, TRANSFORMERS, UPS UNITS, METALLIC HOUSING OF AC POWER SURGE SUPPRESSOR DEVICES, PRIMARY SURGE SUPPRESSOR GROUND TERMINALS, EQUIPMENT ENCLOSURES, EQUIPMENT RACKS, TRANSIENT VOLTAGE SURGE SUPPRESSION DEVICES, ANTENNA SUPPORT FRAMES, FENCES, FENCE POSTS, FENCE GATES, CABLE, BRIDGE/ICE BRIDGE, GENERATOR FRAME, SKID PLATE OR
- METAL SUPPORT FRAME OF A PREFABRICATED SHELTER, METALLIC MEMBERS OF ALL INCOMING TELECOMMUNICATIONS CABLES, INCLUDING PAIRED-CONDUCTOR AND OPTICAL FIBER (ANSI T1.313-2003, SECTION 8.2), FACILITY GROUNDING ELECTRODE SYSTEM, MAIN TELEPHONE COMPANY GROUND (IF EXTERNAL), METALLIC ENTRY POINTS, METALLIC CONDUITS, PIPING, AND RACEWAYS, HVAC UNITS VENT COVERS (IF NOT ALREADY GROUNDED INSIDE), STORAGE TANKS (ABOVE AND BELOW GRADE) IF ALLOWED, EXTERNAL LIGHT FIXTURES OR SUPPORT MASTS, ANY OTHER GROUNDING ELECTRODE SYSTEMS AT THE SITE. WHEN A LIGHTNING PROTECTION SYSTEM IS INSTALLED ON THE BUILDING, ROOF-MOUNTED ANTENNA MASTS AND SUPPORT STRUCTURES B-C. SHALL BE BONDED TO THE LIGHTNING PROTECTION SYSTEM (IEC 61024-1-2 AND NFPA 780-2023, SECTION 4.16). THE CONDUCTOR SHALL BE
- OF THE SAME SIZE AS THE MAIN ROOF PERIMETER LIGHTNING PROTECTION RING (FAA STD-019D-2002, SECTION 3.7.9.4). CONDUCTOR BONDING SHALL BE MADE USING EXOTHERMIC WELDING, LISTED IRREVERSIBLE HIGH-COMPRESSION FITTINGS, OR OTHER FITTINGS LISTED FOR USE IN LIGHTNING PROTECTION SYSTEMS. SEE "BONDING TO THE EXTERNAL GROUNDING (EARTHING) ELECTRODE SYSTEM" ON PAGE 4-40. NO ADDITIONAL GROUNDING SHALL BE REQUIRED OF ROOF-MOUNTED ANTENNA MASTS AND SUPPORT STRUCTURES WHEN BONDED TO A LIGHTNING PROTECTION SYSTEM. BONDING JUMPERS SHALL BE INSTALLED AT ALL CABLE TRAY AND LADDER RACK SPLICES AND CONNECTION POINTS UNLESS THE CABLE B-D. TRAY OR LADDER RACK HAS LABELING THAT IDENTIFIES IT AS SUITABLE FOR USE AS A GROUNDING (EARTHING) CONDUCTOR AND IT MEETS
- THE REQUIREMENTS OF NFPA 70-2023, ARTICLE 392.7(B). THIS TYPE CABLE TRAYS AND LADDER RACKS HAVE BOLTED SPLICES AND THE CONNECTION POINTS USE SPLINED SHOULDER BOLTS WHICH BITE INTO THE SIDE RAIL OF THE CABLE TRAY OR LADDER RACK TO ENSURE A POSITIVE BOND BETWEEN SECTIONS. ALL BOLTS MUST BE PROPERLY INSTALLED AT EACH SPLICE IN THE CABLE TRAY AND LADDER RACK SYSTEMS PER THE MANUFACTURER'S INSTRUCTIONS. CARE MUST BE TAKEN TO ENSURE A CONTINUOUS ELECTRICAL PATH. BONDING JUMPERS MUST BE USED WHERE DISCONTINUITIES SUCH AS EXPANSION SPLICE PLATES AND HINGED SPLICE PLATES EXIST.
- B-E. CABLE TRAYS AND LADDER RACKS SHALL NOT BE UTILIZED AS A GROUND BUS CONDUCTOR FOR EQUIPMENT OR ANCILLARY SUPPORT APPARATUS.

GENERAL GROUNDING NOTES: (G-'X')

- G-A. ALL BELOW-GRADE GROUNDING (EARTHING) ELECTRODE SYSTEM CONNECTIONS SHALL BE JOINED USING EXOTHERMIC WELDING OR LISTED IRREVERSIBLE HIGH-COMPRESSION FITTING'S COMPRESSED TO A MINIMUM OF 13.3 TONNES (12 TONS) OF PRESSURE, OR AS OTHERWISE REQUIRED BY THE SPECIFIC COMPONENT MANUFACTURER (ANSI T1.313-2003). MANUFACTURER REQUIREMENTS SHALL BE FOLLOWED FOR ALL CONNECTIONS. CONNECTORS AND FITTING USED SHALL BE LISTED FOR THE PURPOSE, FOR THE TYPE OF CONDUCTOR, AND FOR THE SIZE AND NUMBER OF CONDUCTORS USED.
- G-B. ALL ABOVE GRADE GROUNDING ELECTRODE SYSTEM CONNECTIONS (SUCH AS GROUNDING ELECTRODE CONDUCTOR CONNECTION TO GROUND BUS BARS AND TOWER LEGS) SHALL BE JOINED USING EXOTHERMIC WELDING, OR LISTED IRREVERSIBLE HIGH-COMPRESSION FITTINGS COMPRESSED TO A MINIMUM OF 13.3 TONNES (12 TONS) OF PRESSURE, OR AS OTHERWISE REQUIRED BY THE SPECIFIC COMPONENT MANUFACTURER (ANSI T1.313-2003).
- G-C. ALL ABOVE GRADE BONDING CONNECTIONS (SUCH AS BONDING TO ANCILLARY EQUIPMENT, OR BONDING COAXIAL GROUND KITS TO BUS BARS) SHALL BE JOINED USING EXOTHERMIC WELDING, LISTED LUGS, LISTED PRESSURE CONNECTORS, LISTED CLAMPS, OR OTHER LISTED MEANS REQUIRED BY THE SPECIFIC COMPONENT MANUFACTURER. CONNECTING HARDWARE SHALL BE DESIGNED FOR THE PURPOSE, FOR THE TYPE OF CONDUCTOR, AND FOR THE SIZE AND NUMBER OF CONDUCTORS USED. ALL MECHANICAL CONNECTIONS SHALL BE COATED WITH A LISTED CONDUCTIVE ANTI-OXIDANT COMPOUND. THE ANTI-OXIDANT COMPOUND SHALL BE LIBERALLY APPLIED BETWEEN THE TWO METALS.

![](_page_213_Picture_40.jpeg)

![](_page_214_Figure_0.jpeg)

![](_page_215_Figure_0.jpeg)








GADSDEN CITY HALL				
CAMERA ID	LOCATION	ELEVATION	INSTALLATION NOTES	MONITORED VIEW INTENT
CD0001	T-101 - CITY HALL - PLAN SOUTHWEST CORNER OF BUILDING	APPROX. 12' AFG	MOUNT CAMERA ON EXTERIOR SIDE WALL	VESTIBULE 109 ENTRANCE
CE0002	T-101 - CITY HALL - PLAN SOUTHEAST CORNER OF BUILDING	APPROX. 18' AFG	CORNER MOUNT BRACKET WITH GOOSENECK PENDANT	MULTISENSOR CAMERA - GENERAL PANARAMIC VIEW OF EXTERIOR
CE0003	T-101 - WALKWAY CONNECTOR - PLAN SOUTHWEST CORNER OF WALKWAY	APPROX. 18' AFG	CORNER MOUNT BRACKET WITH GOOSENECK PENDANT	MULTISENSOR CAMERA - GENERAL PANARAMIC VIEW OF EXTERIOR
CE0004	T-101 - CITY COUNCIL - PLAN NORTHEAST CORNER OF BUILDING	APPROX. 18' AFG	CORNER MOUNT BRACKET WITH GOOSENECK PENDANT	MULTISENSOR CAMERA - GENERAL PANARAMIC VIEW OF EXTERIOR
CE0005	T-101 - CITY COUNCIL - PLAN NORTHWEST CORNER OF BUILDING	APPROX. 18' AFG	CORNER MOUNT BRACKET WITH GOOSENECK PENDANT	MULTISENSOR CAMERA - GENERAL PANARAMIC VIEW OF EXTERIOR
CA0101	T-400 - 1ST FLOOR CITY HALL - REVENUE AND GARBAGE 108	CEILING MOUNTED	MOUNT ON TILE OF GRID CEILING	REVENUE AND GARABE 108 PAY WINDOW
CB0102	T-400 - 1ST FLOOR CITY HALL - REVENUE AND GARBAGE 108	CEILING MOUNTED	MOUNT ON TILE OF GRID CEILING	SEE KEYED NOTE 1 ON T-400
CB0103	T-400 - 1ST FLOOR CITY HALL - REVENUE AND GARBAGE 108	CEILING MOUNTED	MOUNT ON TILE OF GRID CEILING	SEE KEYED NOTE 1 ON T-400
CB0104	T-400 - 1ST FLOOR CITY HALL - REVENUE AND GARBAGE 108	CEILING MOUNTED	MOUNT ON TILE OF GRID CEILING	SEE KEYED NOTE 1 ON T-400
CA0105	T-400 - 1ST FLOOR CITY HALL - LOBBY 102	APPROX. 11' AFF	MOUNT ON SIDE WALL ABOVE WINDOWS	GENERAL VIEW OF LOBBY 102
CB0106	T-400 - 1ST FLOOR CITY HALL - GARBAGE 111	CEILING MOUNTED	MOUNT ON TILE OF GRID CEILING	SEE KEYED NOTE 1 ON T-400
CB0107	T-400 - 1ST FLOOR CITY HALL - GARBAGE 111	CEILING MOUNTED	MOUNT ON TILE OF GRID CEILING	SEE KEYED NOTE 1 ON T-400
CB0108	T-400 - 1ST FLOOR CITY HALL - GARBAGE 111	CEILING MOUNTED	MOUNT ON TILE OF GRID CEILING	SEE KEYED NOTE 1 ON T-400
0.1.0.1.0.0			MOUNT ON FINISHED CEILING. STUB CONDUIT TO ABOVE	
CA0109	T-400 - 1ST FLOOR CITY HALL - LOBBY 102	CEILING MOUNTED	ADJACENT ACCESSIBLE CEILING SPACE.	GARBAGE 111 PAY WINDOW
CA0110	T-400 - 1ST FLOOR CITY HALL - GARBAGE 111	CEILING MOUNTED	MOUNT ON TILE OF GRID CEILING	GARBAGE 111 PAY WINDOW
CA0111	T-400 - 1ST FLOOR CITY HALL - GARBAGE 111	CEILING MOUNTED	MOUNT ON TILE OF GRID CEILING	GARBAGE 111 PAY WINDOW
CA0112			MOUNT ON FINISHED CEILING. STUB CONDUIT TO ABOVE	
CAUTIZ	T-400 - 1ST FLOOR CITY HALL - LOBBY 102	CEILING MOUNTED	ADJACENT ACCESSIBLE CEILING SPACE.	GENERAL VIEW OF LOBBY 102
CA0113			MOUNT ON FINISHED CEILING. STUB CONDULT TO ABOVE	
	1-400 - 1ST FLOOR CITY HALL - LOBBY 102	CEILING MOUNTED	ADJACENT ACCESSIBLE CEILING SPACE.	REVENUE AND GARADE TOO PAT WINDOW
CA0201	T-400 - 2ND ELOOR CITY HALL - LOBBY 200		ADJACENT ACCESSIBLE CEILING SPACE	GENERAL VIEW OF LOBBY 200
	1-400 - ZND FLOOK CITT HALL - LOBBT 200		MOUNT ON FINISHED CEILING. STUB CONDUIT TO ABOVE	
CA0301	T-401 - 3RD FLOOR CITY HALL - LOBBY 300	CEILING MOUNTED	ADJACENT ACCESSIBLE CEILING SPACE.	GENERAL VIEW OF LOBBY 300
CA0202			MOUNT ON FINISHED CEILING. STUB CONDUIT TO ABOVE	
CA0302	T-401 - 3RD FLOOR CITY HALL - LOBBY 300	CEILING MOUNTED	ADJACENT ACCESSIBLE CEILING SPACE.	GENERAL VIEW OF LOBBY 300
CC1101	T-402 - 1ST FLOOR CITY COUNCIL - LOBBY 125	CEILING MOUNTED	MOUNT ON TILE OF GRID CEILING	360° VIEW OF LOBBY/EVENT SPACE 125
CD1102	T-402 - 1ST FLOOR CITY COUNCIL - EXTERIOR	APPROX. 12' AFG	MOUNT ON EXTERIOR WALL IN CORNER	EXTERIOR BLIND CORRIDOR/CORRIDOR 122 ENTRANCE
CA1103			MOUNT ON FINISHED CEILING. STUB CONDUIT TO ABOVE	
0,11100	T-402 - 1ST FLOOR CITY COUNCIL - LOBBY 125	CEILING MOUNTED	ADJACENT ACCESSIBLE CEILING SPACE.	GENERAL VIEW OF LOBBY/EVENT SPACE125
CA1104	T-402 - 1ST FLOOR CITY COUNCIL - COUNCIL CHAMBER 130	CEILING MOUNTED	MOUNT ON TILE OF GRID CEILING	COUNCIL CHAMBER 130 - REAR VIEW
CA1105	T-402 - 1ST FLOOR CITY COUNCIL - LOBBY 125	CEILING MOUNTED	MOUNT ON TILE OF GRID CEILING	COUNCIL CHAMBER 130 - FRONT VIEW
CA1106	T-402 - 1ST FLOOR CITY COUNCIL - LOBBY 125	CEILING MOUNTED	MOUNT ON TILE OF GRID CEILING	COUNCIL CHAMBER 130 - FRONT VIEW
CC1107	T-402 - 1ST FLOOR CITY COUNCIL - LOBBY 125	WALKWAY CEILING	MOUNT ON UNDERSIDE OF EXTERIOR WALKWAY COVER	360° VIEW OF EXTERIOR WALKWAY
CC1108	T-402 - 1ST FLOOR CITY COUNCIL - LOBBY 125	WALKWAY CEILING	MOUNT ON UNDERSIDE OF EXTERIOR WALKWAY COVER	360° VIEW OF EXTERIOR WALKWAY
CC1201	T-403 - 2ND FLOOR CITY COUNCIL - LOBBY 200	CEILING MOUNTED	MOUNT ON TILE OF GRID CEILING	360° VIEW OF LOBBY 200
CC1202	T-403 - 2ND FLOOR CITY COUNCIL - LOBBY 200	CEILING MOUNTED	MOUNT ON TILE OF GRID CEILING	360° VIEW OF LOBBY 200
CC1203	T-403 - 2ND FLOOR CITY COUNCIL - BRIDGE 262	CEILING MOUNTED	ADJACENT ACCESSIBLE CEILING SPACE.	360° VIEW OF BRIDGE 262
CA1204	T-403 - 2ND FLOOR CITY COUNCIL - VAULT 248	CEILING MOUNTED	MOUNT ON TILE OF GRID CEILING	VAULT 248 ENTRANCE
CA1205	T-403 - 2ND FLOOR CITY COUNCIL - VAULT 248	CEILING MOUNTED	MOUNT ON TILE OF GRID CEILING	VAULT 248 GENERAL VIEW
CA1206	T-403 - 2ND FLOOR CITY COUNCIL - RECEPTION 256	CEILING MOUNTED	MOUNT ON TILE OF GRID CEILING	VIEW OF GUESTS' FACES IN LOBBY 257
014007			MOUNT ON FINISHED CEILING. STUB CONDUIT TO ABOVE	
GA1207	T-403 - 2ND FLOOR CITY COUNCIL - LOBBY 257	CEILING MOUNTED	ADJACENT ACCESSIBLE CEILING SPACE.	GENERAL VIEW LOBBY 257
CAMERA ID FOR REFERENCE IN THIS PROJECT ONLY. COORDINATE FINAL CAMERA ID WITH OWNER'S IT/SECURITY GROUP.				
FIRST TWO DIGITS - CAMERA TYPE (REFER TO CAMERA TYPE SCHEDULE ON SHEET T-001)				
	SECOND TWO DIGITS - FLOOR DESIGNATION (00 - SITE, 01 - 1ST FLOOR CITY HALL, 03 - 3RD FLOOR CITY HALL, 11 - FIRST FLOOR CITY COUNCIL, 12 - 2ND FLOOR CITY COUNCIL)			

THIRD TWO DIGITS - CAMERA COUNT

# SECURITY CAMERA VIEW SCHEDUI E





	SPECIAL GENERAL NOTE 1: CONTRACTOR MUST COORDINATE W SPECIAL GENERAL NOT SPECIAL GENERAL NOTE 3: CEN	ACCESS CONTROL SYSTEM SCHEDULE ITH AND FOLLOW THE ARCHITECTURAL DOCUMENTS (ESPECIALLY SPECIFCATION 087100) AND APPROVED DOOR HARDWARE SUBMIT E 2: CODE COMPLIANT, MFG APPROVED, APPROPRIATE CABLING IS REQUIRED FOR ALL DEVICES. TRAL LOCK POWER CABLE TO BE MIN 18 AWG STRANDED. RUNS OVER 150' TO BE MIN 16 AWG STRANDED.
OPENING DESCRIPTION	SECURITY CONTRACTOR SCOPE OF WORK	GENERAL OVERVIEW OF DOOR (SEE ARCHITECTURAL DOOR HARDWARE SCHEDULE AND DIVISION 08 SPECIFICATION FOR SPECIFICS)
EGRESS: CORRIDOR 122 INGRESS: LOBBY/EVENT SPACE 125	1 X CR, PIR (FOR RTE ONLY), CTRL DOOR, INT TO DPS (BY OTHERS UON)	RIM EXIT DEVICE, ELECTRIC STRIKE WITH VOLTAGE CONDITIONER, DPS. VALID CREDENTIAL RELEASES ELEC FREE EGRESS AT ALL TIMES. PIR (BY SECURITY CONTRACTOR) FOR RTE ONLY, DOES NOT UNLOCK STRIKE. I
EGRESS: CORRIDOR 122 INGRESS: EXTERIOR	1 X CR, CTRL OF DOOR.	SINGLE LEAF, FAIL SECURE ELEC PANIC/PUSHBAR HARDWARE WITH INTEGRATED RTE. FREE EGRESS. DPS.
EGRESS: TELECOM 123 INGRESS: CORRIDOR 122	1 X CR, PIR (FOR RTE ONLY), CTRL DOOR, INT TO DPS (BY OTHERS UON)	RIM EXIT DEVICE, ELECTRIC STRIKE WITH VOLTAGE CONDITIONER, DPS. VALID CREDENTIAL RELEASES ELEC FREE EGRESS AT ALL TIMES. PIR (BY SECURITY CONTRACTOR) FOR RTE ONLY, DOES NOT UNLOCK STRIKE. I
EGRESS: ELECT 124 INGRESS: CORRIDOR 122	1 X DPS, MON DPS	ONE LEAF. MECHANICAL FREE EGRESS. DPS.
EGRESS: LOBBY/EVENT SPACE 125 INGRESS: EXTERIOR	1 X CR, CTRL OF DOOR.	SINGLE LEAF, FAIL SECURE ELEC PANIC/PUSHBAR HARDWARE WITH INTEGRATED RTE. FREE EGRESS. DPS.
EGRESS: LOBBY/EVENT SPACE 125 INGRESS: EXTERIOR	1 X CR, CTRL OF DOOR.	SINGLE LEAF, FAIL SECURE ELEC PANIC/PUSHBAR HARDWARE WITH INTEGRATED RTE. FREE EGRESS. DPS.
EGRESS: LOBBY/EVENT SPACE 125 INGRESS: EXTERIOR	1 X CR, CTRL OF DOOR.	SINGLE LEAF, FAIL SECURE ELEC PANIC/PUSHBAR HARDWARE WITH INTEGRATED RTE. FREE EGRESS. DPS.
EGRESS: LOBBY/EVENT SPACE 125 INGRESS: EXTERIOR WALKWAY	CR, CTRL OF DOOR, INT TO DPS (BY OTHERS UON)	DBL LEAF. MECH FREE EGRESS. LOCAL POWER SUPPLY BY DHC. CONTROL ELECTRICALLY UNLOCKED HDW WITH INT RTE AND INT CR.) 2 X DPS.
EGRESS: RECORDS STOR. 126 INGRESS: ELOBBY/EVENT SPACE 125	1 X CR, PIR (FOR RTE ONLY), CTRL DOOR, INT TO DPS (BY OTHERS UON)	RIM EXIT DEVICE, ELECTRIC STRIKE WITH VOLTAGE CONDITIONER, DPS. VALID CREDENTIAL RELEASES ELEC FREE EGRESS AT ALL TIMES. PIR (BY SECURITY CONTRACTOR) FOR RTE ONLY, DOES NOT UNLOCK STRIKE. I
EGRESS: ELEC 236 INGRESS: LOBBY 200	1 X DPS, MON DPS	ONE LEAF. MECHANICAL FREE EGRESS. DPS.
EGRESS: DATA 237 INGRESS: LOBBY 200	1 X CR, PIR (FOR RTE ONLY), CTRL DOOR, INT TO DPS (BY OTHERS UON)	RIM EXIT DEVICE, ELECTRIC STRIKE WITH VOLTAGE CONDITIONER, DPS. VALID CREDENTIAL RELEASES ELEC FREE EGRESS AT ALL TIMES. PIR (BY SECURITY CONTRACTOR) FOR RTE ONLY, DOES NOT UNLOCK STRIKE. I
EGRESS: CORRIDOR 238 INGRESS: LOBBY 200	1 X CR, CTRL OF DOOR.	SINGLE LEAF, FAIL SECURE ELEC PANIC/PUSHBAR HARDWARE WITH INTEGRATED RTE. FREE EGRESS. DPS.
EGRESS: VAULT 248 INGRESS: CORRIDOR 238	1 X CR, PIR (FOR RTE ONLY), CTRL DOOR, INT TO DPS (BY OTHERS UON)	RIM EXIT DEVICE, ELECTRIC STRIKE WITH VOLTAGE CONDITIONER, DPS. VALID CREDENTIAL RELEASES ELEC FREE EGRESS AT ALL TIMES. PIR (BY SECURITY CONTRACTOR) FOR RTE ONLY, DOES NOT UNLOCK STRIKE. I
EGRESS: RECEPTION 256 INGRESS:LOBBY 257	1 X CR. INT TO DPS BY DHC. CTRL DOOR.	SINGLE LEAF, FAIL SECURE ELEC CYL/MORT HARDWARE WITH INTEGRATED RTE. FREE EGRESS. DPS.
EGRESS: MAIL ROOM 259 INGRESS: LOBBY 200	1 X CR, PIR (FOR RTE ONLY), CTRL DOOR, INT TO DPS (BY OTHERS UON)	RIM EXIT DEVICE, ELECTRIC STRIKE WITH VOLTAGE CONDITIONER, DPS. VALID CREDENTIAL RELEASES ELEC FREE EGRESS AT ALL TIMES. PIR (BY SECURITY CONTRACTOR) FOR RTE ONLY, DOES NOT UNLOCK STRIKE. I
EGRESS: BRIDGE 262 INGRESS: MERRILL LYNCH BUILDING	1 X CR, CTRL OF DOOR.	SINGLE LEAF, FAIL SECURE ELEC PANIC/PUSHBAR HARDWARE WITH INTEGRATED RTE. FREE EGRESS. DPS.
EGRESS: VESTIBULE 100 INGRESS: EXTERIOR	CR, CTRL OF DOOR, INT TO DPS (BY OTHERS UON)	DBL LEAF. MECH FREE EGRESS. LOCAL POWER SUPPLY BY DHC. CONTROL ELECTRICALLY UNLOCKED HDW WITH INT RTE AND INT CR.) 2 X DPS.
EGRESS: LOBBY 102 INGRESS: VESTIBULE 101	CR, CTRL OF DOOR, INT TO DPS (BY OTHERS UON)	DBL LEAF. MECH FREE EGRESS. LOCAL POWER SUPPLY BY DHC. CONTROL ELECTRICALLY UNLOCKED HDW WITH INT RTE AND INT CR.) 2 X DPS.
EGRESS: OPEN OFFICE 103 INGRESS: LOBBY 102	1 X CR. INT TO DPS BY DHC. CTRL DOOR.	SINGLE LEAF, FAIL SECURE ELEC CYL/MORT HARDWARE WITH INTEGRATED RTE. FREE EGRESS. DPS.
EGRESS: STAIR S1 INGRESS: VESTIBULE 109	1 X CR, CTRL OF DOOR.	SINGLE LEAF, FAIL SECURE ELEC PANIC/PUSHBAR HARDWARE WITH INTEGRATED RTE. FREE EGRESS. DPS
EGRESS: GARBAGE 111 INGRESS: LOBBY 102	1 X CR, PIR (FOR RTE ONLY), CTRL DOOR, INT TO DPS (BY OTHERS UON)	RIM EXIT DEVICE, ELECTRIC STRIKE WITH VOLTAGE CONDITIONER, DPS. VALID CREDENTIAL RELEASES ELEC FREE EGRESS AT ALL TIMES. PIR (BY SECURITY CONTRACTOR) FOR RTE ONLY, DOES NOT UNLOCK STRIKE. I
EGRESS: CORRIDOR 119 INGRESS: LOBBY 102	1 X CR, PIR (FOR RTE ONLY), CTRL DOOR, INT TO DPS (BY OTHERS UON)	RIM EXIT DEVICE, ELECTRIC STRIKE WITH VOLTAGE CONDITIONER, DPS. VALID CREDENTIAL RELEASES ELEC FREE EGRESS AT ALL TIMES. PIR (BY SECURITY CONTRACTOR) FOR RTE ONLY, DOES NOT UNLOCK STRIKE. I
EGRESS: ENG STORAGE 121 INGRESS: EXTERIOR	1 X DPS, MON DPS	ONE LEAF. MECHANICAL FREE EGRESS. DPS.
EGRESS: CORRIDOR 201 INGRESS: LOBBY 200	1 X CR. INT TO DPS BY DHC. CTRL DOOR.	SINGLE LEAF, FAIL SECURE ELEC CYL/MORT HARDWARE WITH INTEGRATED RTE. FREE EGRESS. DPS.
EGRESS: MAYOR OFFICE 211 INGRESS: BALCONY 212	1 X DPS, MON DPS	ONE LEAF. MECHANICAL FREE EGRESS. DPS.
EGRESS: BREAK TRAINING ROOM 218 INGRESS: EXTERIOR BALCONY	1 X DPS, MON DPS	ONE LEAF. MECHANICAL FREE EGRESS. DPS.
EGRESS: IT SERVER 234 INGRESS: CORRIDOR 235	1 X CR, PIR (FOR RTE ONLY), CTRL DOOR, INT TO DPS (BY OTHERS UON)	RIM EXIT DEVICE, ELECTRIC STRIKE WITH VOLTAGE CONDITIONER, DPS. VALID CREDENTIAL RELEASES ELEC FREE EGRESS AT ALL TIMES. PIR (BY SECURITY CONTRACTOR) FOR RTE ONLY, DOES NOT UNLOCK STRIKE. I
EGRESS: CORRIDOR/SEATING 330 INGRESS: LOBBY 300	1 X CR, PIR (FOR RTE ONLY), CTRL DOOR, INT TO DPS (BY OTHERS UON)	RIM EXIT DEVICE, ELECTRIC STRIKE WITH VOLTAGE CONDITIONER, DPS. VALID CREDENTIAL RELEASES ELEC FREE EGRESS AT ALL TIMES. PIR (BY SECURITY CONTRACTOR) FOR RTE ONLY, DOES NOT UNLOCK STRIKE. I
EGRESS: CORRIDOR 304 INGRESS: LOBBY 300	1 X CR, PIR (FOR RTE ONLY), CTRL DOOR, INT TO DPS (BY OTHERS UON)	RIM EXIT DEVICE, ELECTRIC STRIKE WITH VOLTAGE CONDITIONER, DPS. VALID CREDENTIAL RELEASES ELEC FREE EGRESS AT ALL TIMES. PIR (BY SECURITY CONTRACTOR) FOR RTE ONLY, DOES NOT UNLOCK STRIKE. I
EGRESS: CORRIDOR 209 INGRESS: STAIR S1	1 X CR, CTRL OF DOOR.	SINGLE LEAF, FAIL SECURE ELEC PANIC/PUSHBAR HARDWARE WITH INTEGRATED RTE. FREE EGRESS. DPS
EGRESS: CORRIDOR 304 INGRESS: STAIR S1	1 X CR, CTRL OF DOOR.	SINGLE LEAF, FAIL SECURE ELEC PANIC/PUSHBAR HARDWARE WITH INTEGRATED RTE. FREE EGRESS. DPS
EGRESS: STAIR S2 INGRESS: EXTERIOR	1 X CR, CTRL OF DOOR.	SINGLE LEAF, FAIL SECURE ELEC PANIC/PUSHBAR HARDWARE WITH INTEGRATED RTE. FREE EGRESS. DPS
TROL SYSTEM <b>DPS</b> : DOOR POSITIO ARED MOTION DETECTOR <b>PTE:</b> PUS <b>HDWE</b> : HARDWARE (LOCKSET) AL <b>PROV</b> : PROVIDED <b>INT</b> : INTEG	IN SWITCH EOL: END OF LINE EOLR: END OF LINE RE SH TO EXIT ELEC: ELECTRIFIED MORT: MORTISE U.O.N.: UNLESS OTHERWISE NOTED. EC: ELECTRIC/ GRATE(ED) SGL: SINGLE DBL: DOUBLE CTRL:	ESISTORS <b>CR</b> : CARD READER <b>RTE</b> : REQUEST-TO-EXIT <b>DE:</b> DELAYED EGRESS <b>MAG:</b> MAGNETIC <b>MON</b> : MONITOR AL CONTRACTOR <b>DHC:</b> DIVISION 08 (DOOR HARDWARE) CONTRACTOR CONTROL <b>FA</b> : FIRE ALARM <b>GC</b> : GENERAL CONTRACTOR

	ROUGH-IN DETAIL	NOTES
TRIC STRIKE.		
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	S02	
TRIC STRIKE. IPS.	S05	
	S04	
	S02	NO CARD READER. UNLOCK ON SCHEDULE
	S02	NO CARD READER. UNLOCK ON SCHEDULE
	S02	
E (PROV BY DHC		
	D01	
IRIC STRIKE. IPS.	S05	
	S04	
TRIC STRIKE. PPS.	S05	
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GENERAL DEMOLITION NOTES:

- A. REFER TO THE ARCHITECTURAL DEMOLITION PLANS FOR MORE INFORMATION. DOTTED LINES INDICATE WALL TO BE DEMOLISHED.
- CONTRACTOR TO SURVEY AND DOCUMENT THE LOW VOLTAGE CABLES AND DEVICES IN Β. THE AREA(S), WHILE COORDINATING WITH OWNER, OWNER'S VENDORS, AND SYSTEM SUBCONTRACTORS TO ENSURE ALL LOW VOLTAGE DEVICES AND CABLES THAT SERVE THE DEMOLITION AND RENOVATION AREAS ARE PROPERLY AND SAFELY DECOMMISSIONED AND REMOVED.
- C. DECOMMISSIONED LOW VOLTAGE DEVICES ARE TO BE TURNED OVER TO THE OWNER.
- ALL (TELE)COMMUNICATIONS DEVICES AND CABLES WILL BE REMOVED DURING RENOVATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIND ANY DEVICES AND CABLES SUPPORTING TECHNOLOGY SYSTEMS. SYSTEMS MAY INCLUDE, BUT ARE NOT LIMITED TO: DATA, VOICE, PUBLIC SYNCHRONIZED CLOCKS, ACCESS CONTROL, AND CCTV.
- LOW VOLTAGE CABLE AND DEVICE DEMOLITION MAY EXTEND OUTSIDE OF THE GENERAL DEMOLITIONS AND RENOVATION AREAS. CONTRACTOR TO COORDINATE WITH OWNER AND ARCHITECT TO DETERMINE FULL SCOPE OF DEMOLITION.

SHEET KEYED NOTES: 🚫

- 1. EXISTING SERVICE PROVIDER DEMARC. CONTRACTOR SHALL COORDINATE DEMO OF ALL EXISTING TELECOM GEAR, HARDWARE, CABLES, TERMINATION PANELS, ETC. WITH GC, OWNER AND SERVICE PROVIDERS. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL FOR DEMO'D ITEMS. NEW SERVICE PROVIDER CABLING WILL ROUTE THROUGH THIS SPACE FOR DIRECT TERMINATION WITHIN THE IT SERVER ROOM 234 ON THE SECOND FLOOR.
- COORDINATE DEMO OF EXISTING PLYWOOD BACKBOARDS IN THIS SPACE. SOME 2. EXISTING BACKBOARDS MAY REMAIN FOR FUTURE USE.
- HASHED AREA INDICATES REGIONS BANK SPACE AND IS NOT IN SCOPE. 3.





TECHNOLOGY - 3RD FLOOR DEMOLITION PLAN - CITY HALL SCALE: 1/8" = 1'-0"

GENERAL DEMOLITION NOTES:

- A. REFER TO THE ARCHITECTURAL DEMOLITION PLANS FOR MORE INFORMATION. DOTTED LINES INDICATE WALL TO BE DEMOLISHED.
- CONTRACTOR TO SURVEY AND DOCUMENT THE LOW VOLTAGE CABLES AND DEVICES IN В. THE AREA(S), WHILE COORDINATING WITH OWNER, OWNER'S VENDORS, AND SYSTEM SUBCONTRACTORS TO ENSURE ALL LOW VOLTAGE DEVICES AND CABLES THAT SERVE THE DEMOLITION AND RENOVATION AREAS ARE PROPERLY AND SAFELY DECOMMISSIONED AND REMOVED.
- C. DECOMMISSIONED LOW VOLTAGE DEVICES ARE TO BE TURNED OVER TO THE OWNER. ALL (TELE)COMMUNICATIONS DEVICES AND CABLES WILL BE REMOVED DURING D. RENOVATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIND ANY DEVICES AND CABLES SUPPORTING TECHNOLOGY SYSTEMS. SYSTEMS MAY INCLUDE, BUT ARE NOT
- LIMITED TO: DATA, VOICE, PUBLIC SYNCHRONIZED CLOCKS, ACCESS CONTROL, AND CCTV. LOW VOLTAGE CABLE AND DEVICE DEMOLITION MAY EXTEND OUTSIDE OF THE GENERAL E. DEMOLITIONS AND RENOVATION AREAS. CONTRACTOR TO COORDINATE WITH OWNER AND ARCHITECT TO DETERMINE FULL SCOPE OF DEMOLITION.





- THESE DRAWINGS ARE GENERALLY DIAGRAMMATIC IN NATURE AND EXCEPT WHERE SPECIFICALLY DIMENSIONED OR DETAILED, THEY INDICATE THE GENERAL ARRANGEMENT OF THE WORK. THE CONTRACTOR SHALL INSTALL HIS Α. WORK TO CONFORM AS NEAR AS POSSIBLE TO THE LOCATIONS AND ARRANGEMENTS SHOWN, WITH ONLY SUCH MINOR ADJUSTMENTS AS NECESSARY. CONTRACTOR SHALL COORDINATE THE WORK WITH ALL OTHER TRADES TO AVOID INTERFERENCES.
- B. FOR ADDITIONAL DEVICE LOCATION INFORMATION, REFER TO ARCHITECTURAL ELEVATION DRAWINGS WHICH TAKE PRECEDENCE.
- PROJECT CABLING SHALL BE 100% PLENUM-RATED. WHERE CABLES ARE INSTALLED IN CONDUIT THAT IS PLACED C. IN-SLAB AND/OR BELOW GRADE, INDOOR/OUTDOOR, PLENUM-RATED CABLES SHALL BE INSTALLED.
- D. ALL LOW-VOLTAGE DATA CABLES ON THIS DRAWING SHEET SHALL TERMINATE IN IT SERVER 234 ON 2ND FLOOR. E. LOW-VOLTAGE CABLE TYPE AND JACKET COLOR-CODING SHALL BE AS FOLLOWS:

BLUE =	Gl
WHITE =	W
GREEN =	٧I
YELLOW =	A
VIOLET =	Αl
GRAY =	Αl
GRAY =	Μ

	GENERAL VOICE, DATA AND TV DISPLAYS (CAT 6 UTP)
	WIRELESS ACCESS POINTS (CAT 6A UTP)
	VIDEO SURVEILLANCE CAMERAS (CAT 6 UTP)
=	ACCESS CONTROLS (CAT6 UTP AND COMPOSITE CABI
	AUDIOVISUAL HDMI EXTENSION (CAT 6 F/UTP)
	AUDIOVISUAL SPEAKERS (2 CONDUCTOR UTP)
	MICROPHONE (2 CONDUCTOR W/SHIELD)

- 1. DENOTES LOCATION FOR PUBLIC-USE PC WORKSTATION.
- PROVIDE OBERON H-PLANE RIGHT ANGLE SURFACE MOUNT FOR OFOI ACCESS POINT. MODEL 1004, 1007 OR 1011. 2 CONFIRM REQUIRED MODEL WITH OWNER BASED ON MFG. OF THE WIRELESS ACCESS POINT.
- 3. LOCATION OF EXISTING TELEPHONE, INTERNET AND CABLE TV SERVICE PROVIDER DEMARC/MPOE.
- FOUR-INCH LOW-VOLTAGE COMMUNICATIONS SLEEVES FROM ACCESSIBLE CEILING OF THIS FLOOR TO ACCESSIBLE 4 CEILING OF 3RD FLOOR. REFER TO SHEET T-301, KEYED NOTE #2.
- 5. MOUNT **AV2** DEVICE BEHIND DISPLAY.
- 6. INSTALL DTP TRANSMITTER DEVICE **AV1**, IN FLOOR BOX. COORDINATE WITH DIVISION 26.
- 7. 1-1/4 INCH CONDUIT FOR HDMI CONNECTIVITY FROM AV3 DEVICE VIA FLOOR BOX TO TV DISPLAY.
- THESE DATA DEVICES WILL TERMINATE IN A POKE-THRU FLOOR BOX. COORDINATE INSTALLATION WITH DIVISION 26. 8. REFER TO ELECTRICAL DRAWINGS FOR FLOOR BOX MANUFACTURER AND PART NUMBER INFORMATION.
- 9. FOUR-INCH LOW-VOLTAGE COMMUNICATIONS SLEEVES TO ACCESSIBLE CEILING OF STORAGE 116.
- 10. COORDINATE CONNECTION FOR CAB EMERGENCY TELEPHONE WITH ELEVATOR CONTRACTOR.
- 11. NOT USED.
- 12. PROVIDE A 65-INCH LED DISPLAY AT THIS **TVO** LOCATION.
- 13. PROVIDE A 75-INCH LED DISPLAY AT THIS **TVO** LOCATION.
- 14. PROVIDE A 55-INCH LED DISPLAY AT THIS **TVO** LOCATION.







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- FOR ADDITIONAL DEVICE LOCATION INFORMATION, REFER TO ARCHITECTURAL ELEVATION DRAWINGS WHICH TAKE PRECEDENCE.
- PROJECT CABLING SHALL BE 100% PLENUM-RATED. WHERE CABLES ARE INSTALLED IN CONDUIT THAT IS PLACED IN-SLAB AND/OR BELOW GRADE, INDOOR/OUTDOOR, PLENUM-RATED CABLES SHALL BE INSTALLED.
- ALL LOW-VOLTAGE DATA CABLES ON THIS DRAWING SHEET SHALL TERMINATE IN IT SERVER 234 ON 2ND FLOOR.
- LOW-VOLTAGE CABLE TYPE AND JACKET COLOR-CODING SHALL BE AS FOLLOWS: BLUE = GENERAL VOICE, DATA AND TV DISPLAYS (CAT 6 UTP)
- WHITE = WIRELESS ACCESS POINTS (CAT 6A UTP) GREEN = VIDEO SURVEILLANCE CAMERAS (CAT 6 UTP) ACCESS CONTROLS (CAT6 UTP AND COMPOSITE CABLE) YELLOW =
- AUDIOVISUAL HDMI EXTENSION (CAT 6 F/UTP) VIOLET = AUDIOVISUAL SPEAKERS (2 CONDUCTOR UTP) GRAY = GRAY = MICROPHONE (2 CONDUCTOR W/SHIELD)

- 1. THESE DATA DEVICES WILL BE COMBINED IN A SINGLE POKE-THRU FLOOR BOX. COORDINATE INSTALLATION WITH DIVISION 26. REFER TO ELECTRICAL DRAWINGS FOR FLOOR BOX MANUFACTURER AND PART NUMBER INFORMATION.
- FOUR-INCH LOW-VOLTAGE COMMUNICATIONS SLEEVES, QUANTITY 3, FROM ACCESSIBLE CEILING OF THIS FLOOR DOWN TO ACCESSIBLE CEILING OF CORRIDOR 201. PROVIDE BUSHINGS AND PULL STRINGS FOR EACH CONDUIT. PROVIDE AND INSTALL A UL LISTED, INTUMESCENT FIRE STOP PRODUCT (PLUGS, PUTTIES, CAULKS AND/OR PILLOWS) IN EACH SLEEVE UPON PROJECT COMPLETION. BASIS OF DESIGN FOR FIRE STOP PRODUCTS: 3M, HILTI AND SPECIFIED TECHNOLOGIES. COORDINATE INSTALLATION WITH ALL TRADES.
- PROVIDE A 65-INCH LED DISPLAY AT THIS LOCATION. 3







- VIOLET = AUDIOVISUAL HDMI EXTENSION (CAT 6 F/UTP) GRAY = AUDIOVISUAL SPEAKERS (2 CONDUCTOR UTP)
- GRAY = MICROPHONE (2 CONDUCTOR W/SHIELD)

- REFER TO ELEVATION DETAIL #4, SHEET T-902 FOR MORE INFORMATION ON THESE DEVICES. 9.
- (2) 1-1/2-INCH UNDERSLAB LOW-VOLTAGE CONDUITS FROM DAIS CASEWORK TO ACCESSIBLE CEILING SPACE. IN THE 10. DAIS CASEWORK, TERMINATE CONDUITS IN AN 8-IN X 8-IN X 4-IN JUNCTION BOX WITH COVER AT 18" AFF. CONDUIT ROUTE SHOWN IS DIAGRAMMATIC. COORDINATE THIS WORK WITH ALL TRADES AND TO AVOID CONFLICT WITH
- STRUCTURAL X-BRACING ON EXTERIOR WALL. PROVIDE BUSHINGS AND PULL STRINGS IN ALL CONDUITS. PROVIDE 75-INCH LED DISPLAY AT THIS LOCATION. MOUNT AND INSTALL DISPLAY SO THAT IT IS CENTERED TO THE 11.
- ADJACENT STAIRS.
- 12. UNLESS OTHERWISE NOTED, ALL LOW-VOLTAGE DATA SHALL TERMINATE IN DATA 237 ON 2ND FLOOR.











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- B. FOR ADDITIONAL DEVICE LOCATION INFORMATION, REFER TO ARCHITECTURAL ELEVATION DRAWINGS WHICH TAKE PRECEDENCE.
- PROJECT CABLING SHALL BE 100% PLENUM-RATED. WHERE CABLES ARE INSTALLED IN CONDUIT THAT IS PLACED IN-SLAB AND/OR BELOW GRADE, INDOOR/OUTDOOR, PLENUM-RATED CABLES SHALL BE INSTALLED.
- REFER TO TELECOM SHEET T-300 FOR PATHWAYS. D.
- REFER TO SHEET T-006 FOR CAMERA SCHEDULE INCLUDING MOUNTING ELEVATIONS, INTENDED FIELD OF VIEW,
- AND INSTALLATION NOTES. F. ALL LOW-VOLTAGE DATA CABLES ON THIS DRAWING SHEET SHALL TERMINATE IN IT SERVER 234 ON 2ND FLOOR.

G.	LOW-VOLTAGE CABLE	TYPE AND JACKET COLOR-CODING SHALL BE AS FOLLOWS:
	BLUE =	GENERAL VOICE, DATA AND TV DISPLAYS (CAT 6 UTP)
	WHITE =	WIRELESS ACCESS POINTS (CAT 6A UTP)
	GREEN =	VIDEO SURVEILLANCE CAMERAS (CAT 6 UTP)
	YELLOW =	ACCESS CONTROLS (CAT6 UTP AND COMPOSITE CABLE)
	VIOLET =	AUDIOVISUAL HDMI EXTENSION (CAT 6 F/UTP)
	GRAY =	AUDIOVISUAL SPEAKERS (2 CONDUCTOR UTP)
	GRAY =	MICROPHONE (2 CONDUCTOR W/SHIELD)

# KEYED NOTES:

- CEILING MOUNTED DOME CAMERA TO MONITOR CASH TRANSACTIONS. CAMERA FEEDS MUST BE MASKED TO ONLY DISPLAY COUNTERSPACE WHERE THE CASH WILL BE LAID OUT. ALL FOOTAGE WILL BE RECORDED ON THE 1. SECURITY CAMERA SERVERS AND USE THE SAME SOFTWARE INTERFACE AS OTHER BUILDING SECURITY CAMERAS. CONTRACTOR TO GAIN WRITTEN APPROVAL OF THE OWNER FOR THE UNMASKED FIELD OF VIEW. THE CONFIGURATION SETTINGS FOR THESE CAMERAS SHALL BE PASSWORD PROTECTED.
- CONTRACTOR TO INSTALL CARD READER ON RECEPTION DESK. COORDINATE LOCATION WITH OWNER. CARD READER TO UNLOCK DOOR CH200A THROUGH THE ACCESS CONTROL PANEL.







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- B. FOR ADDITIONAL DEVICE LOCATION INFORMATION, REFER TO ARCHITECTURAL ELEVATION DRAWINGS WHICH TAKE PRECEDENCE.
- C. PROJECT CABLING SHALL BE 100% PLENUM-RATED. WHERE CABLES ARE INSTALLED IN CONDUIT THAT IS PLACED IN-SLAB AND/OR BELOW GRADE, INDOOR/OUTDOOR, PLENUM-RATED CABLES SHALL BE INSTALLED.
- D. REFER TO TELECOM SHEET T-301 FOR PATHWAYS.
- E. REFER TO SHEET T-006 FOR CAMERA SCHEDULE INCLUDING MOUNTING ELEVATIONS, INTENDED FIELD OF VIEW, AND INSTALLATION NOTES.
- F. ALL LOW-VOLTAGE DATA CABLES ON THIS DRAWING SHEET SHALL TERMINATE IN IT SERVER 234 ON 2ND FLOOR.
  - LOW-VOLTAGE CABLE TYPE AND JACKET COLOR-CODING SHALL BE AS FOLLOWS: BLUE = GENERAL VOICE, DATA AND TV DISPLAYS (CAT 6 UTP)
    - WHITE = WIRELESS ACCESS POINTS (CAT 6A UTP) GREEN = VIDEO SURVEILLANCE CAMÈRAS (CAT 6 ÚTP)
    - YELLOW = ACCESS CONTROLS (CAT6 UTP AND COMPOSITE CABLE)
    - AUDIOVISUAL HDMI EXTENSION (CAT 6 F/UTP) VIOLET = GRAY = AUDIOVISUAL SPEAKERS (2 CONDUCTOR UTP)
    - GRAY = MICROPHONE (2 CONDUCTOR W/SHIELD)

KEYED NOTES:

G.

1. CONTRACTOR TO INSTALL DOOR RELEASE BUTTONS TO REMOTELY UNLOCK DOORS AS SHOWN DIAGRAMMATICALLY ON THE FLOORPLAN. COORDINATE LOCATION OF DOOR RELASE BUTTONS WITH OWNER. DOOR RELEASE BUTTONS SHOULD BE PROGRAMMED TO UNLOCK THE DOOR VIA THE ACCESS CONTROL PANEL.





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- В. FOR ADDITIONAL DEVICE LOCATION INFORMATION, REFER TO ARCHITECTURAL ELEVATION DRAWINGS WHICH TAKE PRECEDENCE.
- C. PROJECT CABLING SHALL BE 100% PLENUM-RATED. WHERE CABLES ARE INSTALLED IN CONDUIT THAT IS PLACED IN-SLAB AND/OR BELOW GRADE, INDOOR/OUTDOOR, PLENUM-RATED CABLES SHALL BE INSTALLED.
- D. REFER TO TELECOM SHEET T-302 FOR PATHWAYS.
- REFER TO SHEET T-006 FOR CAMERA SCHEDULE INCLUDING MOUNTING ELEVATIONS, INTENDED FIELD OF VIEW, AND INSTALLATION NOTES.
- F. ALL LOW-VOLTAGE DATA CABLES ON THIS DRAWING SHEET SHALL TERMINATE IN IT DATA 237 ON 2ND FLOOR.
- LOW-VOLTAGE CABLE TYPE AND JACKET COLOR-CODING SHALL BE AS FOLLOWS: BLUE = GENERAL VOICE, DATA AND TV DISPLAYS (CAT 6 UTP) G.
  - WHITE = WIRELESS ACCESS POINTS (CAT 6A UTP) GREEN = VIDEO SURVEILLANCE CAMÈRAS (CAT 6 ÚTP) YELLOW = ACCESS CONTROLS (CAT6 UTP AND COMPOSITE CABLE) VIOLET =
  - AUDIOVISUAL HDMI EXTENSION (CAT 6 F/UTP) AUDIOVISUAL SPEAKERS (2 CONDUCTOR UTP) GRAY = GRAY = MICROPHONE (2 CONDUCTOR W/SHIELD)

SHEET KEYED NOTES: 1. MOUNT CAMERAS TO UNDERSIDE (CEILING) OF CONNECTOR BRIDGE. PROVIDE 1-INCH CONDUITS WITH PULL STRINGS CONTINUOUS TO ACCESSIBLE CEILING SPACE OF LOBBY/EVENT SPACE 125. 2. THIS CREDENTIAL READER SHALL BE CONFIGURED TO CONTROL ONLY THE ADJACENT DOOR CC125C.









- OR DETAILED, THEY INDICATE THE GENERAL ARRANGEMENT OF THE WORK. THE CONTRACTOR SHALL INSTALL HIS WORK TO CONFORM AS NEAR AS POSSIBLE TO THE LOCATIONS AND ARRANGEMENTS SHOWN, WITH ONLY SUCH







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- 1. (2) 4-INCH LOW-VOLTAGE COMMUNICATIONS CONDUITS ACROSS INACCESSIBLE CEILING SPACES BY DIV 26. PROVIDE PROTECTIVE BUSHINGS AT EACH END AND PROVIDE PULL STRINGS IN EACH. COORDINATE INSTALLATION WITH ALL TRADES.
- FOUR-INCH LOW-VOLTAGE COMMUNICATIONS SLEEVES, QUANTITY 3, UP TO IT SERVER ROOM 226 BY DIV 26. REFER TO 2 SHEET T-301 FOR MORE INFORMATION.
- 4-INCH LOW-VOLTAGE COMMUNICATIONS CONDUIT(S) ACROSS INACCESSIBLE CEILING SPACES BY DIV 26. PROVIDE PROTECTIVE BUSHINGS AT EACH END AND PROVIDE PULL STRINGS IN EACH. COORDINATE INSTALLATION WITH ALL TRADES.
- 4. UL-LISTED, RE-ENTERABLE FIRESTOP SLEEVE ASSEMBLY WITH GANGING PLATES BY DIV 26. BASIS OF DESIGN: HILTI SPEED SLEEVE OR EQUIVALENT BY 3M AND SPECIFIED TECHNOLOGIES. REFER TO DETAIL 1, SHEET T-900 FOR MORE INFORMATION.
- 4-INCH LOW-VOLTAGE COMMUNICATIONS CONDUITS TO EACCESSIBLE CEILING OF 3RD FLOOR BY DIV 26. PROVIDE 5. PROTECTIVE BUSHINGS AT EACH END AND PROVIDE PULL STRINGS IN EACH. COORDINATE INSTALLATION WITH ALL TRADES. PROVIDE UL-RATED, INTUMESCENT FIRE STOP MATERIALS (PUTTY, CAULK, PLUG) IN EACH SLEEVE AT CONCLUSION OF PROJECT. BASIS OF DESIGN: 3M, HILTI AND SPECIFIED TECHNOLOGIES.
- 2-INCH LOW-VOLTAGE COMMUNICATIONS CONDUIT FROM GARAGE VESTIBULE CEILING SPACE THROUGH REGIONS-6. OWNED CLOSET INTO SECOND FLOOR ACCESSIBLE CEILING SPACE BY DIV 26. PROVIDE PULL STRING THROUGHOUT LENGTH AND LABEL CONDUIT ON EACH END. 7. (2) 4-INCH METALLIC SLEEVES TO IT SERVER ROOM 234 BY DIV 26. SLEEVES TO BE DEDICATED FOR OWNER'S SERVICE
- PROVIDER CABLING. PROVIDE BUSHINGS ON EACH SLEEVE. PROVIDE UL-LISTED FIRE STOP PUTTY, CAULK AND/OR PILLOWS UPON CONCLUSION OF INSTALLATION. 12-INCH WIDE X 4-INCH DEEP, BASKET-TYPE CABLE TRAY BY DIV 26. COORDINATE INSTALLATION WITH ALL TRADES. 8
- PROVIDE ALL FITTINGS, ACCESSORIES, SUPPORTS AND MISC. MATERIALS FOR A COMPLETE CABLE TRAY SYSTEM.







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# GENERAL NOTES:

- A. THESE DRAWINGS ARE GENERALLY DIAGRAMMATIC IN NATURE AND EXCEPT WHERE SPECIFICALLY DIMENSIONED OR DETAILED, THEY INDICATE THE GENERAL ARRANGEMENT OF THE WORK. THE CONTRACTOR SHALL INSTALL HIS WORK TO CONFORM AS NEAR AS POSSIBLE TO THE LOCATIONS AND ARRANGEMENTS SHOWN, WITH ONLY SUCH MINOR ADJUSTMENTS AS NECESSARY. CONTRACTOR SHALL COORDINATE THE WORK WITH ALL OTHER TRADES TO AVOID INTERFERENCES.
- B. FOR ADDITIONAL DEVICE LOCATION INFORMATION, REFER TO ARCHITECTURAL ELEVATION DRAWINGS WHICH TAKE PRECEDENCE.
- PROJECT CABLING SHALL BE 100% PLENUM-RATED. WHERE CABLES ARE INSTALLED IN CONDUIT THAT IS PLACED IN-SLAB AND/OR BELOW GRADE, INDOOR/OUTDOOR, PLENUM-RATED CABLES SHALL BE INSTALLED.
  LOW-VOLTAGE CABLE TYPE AND JACKET COLOR-CODING SHALL BE AS FOLLOWS:

	THE AND GAORET OCEON-OODING GHALL DE ACTOLEONO.
BLUE =	GENERAL VOICE, DATA AND TV DISPLAYS (CAT 6 UTP)
WHITE =	WIRELESS ACCESS POINTS (CAT 6A UTP)
GREEN =	VIDEO SURVEILLANCE CAMERAS (CAT 6 UTP)
YELLOW =	ACCESS CONTROLS (CAT6 UTP AND COMPOSITE CABLE)
VIOLET =	AUDIOVISUAL HDMI EXTENSION (CAT 6 F/UTP)
GRAY =	AUDIOVISUAL SPEAKERS (2 CONDUCTOR UTP)
GRAY =	MICROPHONE (2 CONDUCTOR W/SHIELD)

- 1. FOUR-INCH LOW-VOLTAGE COMMUNICATIONS SLEEVES FROM ASSESSIBLE CEILING OF THIS FLOOR TO ACCESSIBLE CEILING OF CORRIDOR 201. REFER TO SHEET T-500 FOR MORE INFORMATION. PROVIDE AND INSTALL A UL LISTED, INTUMESCENT FIRE STOP PRODUCT (PLUGS, PUTTIES, CAULKS AND/OR PILLOWS) IN EACH SLEEVE UPON PROJECT COMPLETION. BASIS OF DESIGN FOR FIRE STOP PRODUCTS: 3M, HILTI AND SPECIFIED TECHNOLOGIES.
- 2. 12-INCH WIDE X 4-INCH DEEP, BASKET-TYPE CABLE TRAY BY DIV 26. COORDINATE INSTALLATION WITH ALL TRADES. PROVIDE ALL FITTINGS, ACCESSORIES, SUPPORTS AND MISC. MATERIALS FOR A COMPLETE CABLE TRAY SYSTEM.



CEILING - 3RD FLOOR PLAN - CITY HALL SCALE: 1/8" = 1'-0"





- OR DETAILED, THEY INDICATE THE GENERAL ARRANGEMENT OF THE WORK. THE CONTRACTOR SHALL INSTALL HIS WORK TO CONFORM AS NEAR AS POSSIBLE TO THE LOCATIONS AND ARRANGEMENTS SHOWN, WITH ONLY SUCH MINOR ADJUSTMENTS AS NECESSARY. CONTRACTOR SHALL COORDINATE THE WORK WITH ALL OTHER TRADES
- FOR ADDITIONAL DEVICE LOCATION INFORMATION, REFER TO ARCHITECTURAL ELEVATION DRAWINGS WHICH
- PROJECT CABLING SHALL BE 100% PLENUM-RATED. WHERE CABLES ARE INSTALLED IN CONDUIT THAT IS PLACED IN-SLAB AND/OR BELOW GRADE, INDOOR/OUTDOOR, PLENUM-RATED CABLES SHALL BE INSTALLED.

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GRAY =	AUDIOVISUAL SPEAKERS (2 CONDUCTOR UTP)
GRAY =	MICROPHONE (2 CONDUCTOR W/SHIELD)

1. FOUR-INCH LOW-VOLTAGE COMMUNICATIONS CONDUIT ACROSS INACCESSIBLE CEILING SPACE. COORDINATE INSTALLATION WITH ALL TRADES. PROVIDE PROTECTIVE BUSHINGS AT EACH END AND PROVIDE PULL STRING.





- A. THESE DRAWINGS ARE GENERALLY DIAGRAMMATIC IN NATURE AND EXCEPT WHERE SPECIFICALLY DIMENSIONED OR DETAILED, THEY INDICATE THE GENERAL ARRANGEMENT OF THE WORK. THE CONTRACTOR SHALL INSTALL HIS WORK TO CONFORM AS NEAR AS POSSIBLE TO THE LOCATIONS AND ARRANGEMENTS SHOWN, WITH ONLY SUCH MINOR ADJUSTMENTS AS NECESSARY. CONTRACTOR SHALL COORDINATE THE WORK WITH ALL OTHER TRADES TO AVOID INTERFERENCES.
- FOR ADDITIONAL DEVICE LOCATION INFORMATION, REFER TO ARCHITECTURAL ELEVATION DRAWINGS WHICH B TAKE PRECEDENCE.
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LOW-VOLTAGE CABLE	TYPE AND JACKET COLOR-CODING SHALL BE AS FOLLOWS:
BLUE =	GENERAL VOICE, DATA AND TV DISPLAYS (CAT 6 UTP)
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- INSTALLATION WITH ALL TRADES. PROVIDE PROTECTIVE BUSHINGS AT EACH END AND PROVIDE PULL STRING.
- CEILING JUNCTION BOX IN CONFERENCE ROOM 263. COORDINATE INSTALLATION AND FINAL ROUTING WITH ALL
- PROVIDE 18" X 24" METALLIC JUNCTION BOX WITH REMOVABLE LID AND INSTALL ABOVE ACCESSIBLE CEILING.
- PROVIDE (1) 2-INCH CONDUIT WITH PULL STRING FROM THE ABOVE-CEILING JUNCTION BOX AND ACCESSIBLE CEILING SPACE WITHIN THE MERRILL LYNCH SPACE FOR FUTURE USE BY OWNER. PROVIDE BUSHINGS.
- PROVIDE (2) 1-1/4 INCH EMT CONDUITS WITH PULL STRINGS FROM THE TVO (TV BACKBOX) TO THE ABOVE-CEILING







THIS SPACE RESERVED FOR ACCESS CONTROL  $\langle 8 \rangle$ 

**KEYED NOTES:** 

2. TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB). INSTALL AT 3'-0" AFF.

SLEEVE OR EQUIVALENT BY 3M AND SPECIFIED TECHNOLOGIES.

VISIBLE (UNPAINTED) IN A READILY INSPECTABLE LOCATION ON EACH SECTION OF PLYWOOD.

MOUNTS FOR A COMPLETE LADDER RACK SYSTEM.

MOUNTS FOR A COMPLETE LADDER RACK SYSTEM.

STOP PUTTY, CAULK AND/OR PILLOWS UPON CONCLUSION OF INSTALLATION.

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BETWEEN RACKS.

14. MINI-SPLIT AIR CONDITIONING UNIT.

2D ELEVATION 2D SCALE: 3/8" = 1'-0"







TECHNOLOGY - AUDIOVISUAL - COUNCIL CHAMBERS 130 ENLARGED FLOOR PLAN SCALE: 1/4" = 1'-0" REF: 1/T-302

TECHNOLOGY - COUNCIL CHAMBERS 130 ENLARGED CEILING PLAN SCALE: 1/4" = 1'-0"



- 15. PROVIDE (2) 1-1/2 INCH CONDUITS FROM ACCESSIBLE CEILING SPACE TO THE TOP OF THE AV RACK. PROVIDE PROTECTIVE BUSHINGS AT EACH END.
- 16. (2) 1-1/2-INCH UNDERSLAB LOW-VOLTAGE CONDUITS FROM DAIS CASEWORK TO ACCESSIBLE CEILING SPACE. IN THE DAIS CASEWORK, TERMINATE CONDUITS IN AN 8-IN X 8-IN X 4-IN JUNCTION BOX WITH COVER AT 18" AFF. CONDUIT ROUTE SHOWN IS DIAGRAMMATIC. COORDINATE THIS WORK WITH ALL TRADES AND TO AVOID CONFLICT WITH STRUCTURAL X-BRACING ON EXTERIOR WALL. PROVIDE BUSHINGS AND PULL STRINGS IN ALL CONDUITS. 17. COORDINATE INTEGRATION OF AV CONTROL SYSTEM WITH MECHANICAL WINDOW SHADE INSTALLER, DIV 26 AND
- GENERAL CONTRACTOR. 18. REFER TO DETAIL 5, SHEET T-902 FOR MORE INFORMATION ON PROJECTOR MOUNTING.



3 TECHNOLOGY - BREAK/TRAINING ROOM ENLARGED FLOOR PLAN SCALE: 1/4" = 1'-0" REF: 2/T-300









