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DATE: December 11, 2019

FROM: Wight & Company
2500 N. Frontage Road
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SUBJECT: ADDENDUM #3 TO THE BIDDING DOCUMENTS FOR:
BID GROUP #8
MASTER FACILITY PLAN IMPLEMENTATION
COMMUNITY HIGH SCHOOL DISTRICT 99
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

This addendum forms a part of the Bidding Contract Documents, dated November 20, 2019. Bidders must acknowledge receipt of this Addendum in the space provided on the Bid Form. Drawing revisions clouded and tagged throughout with delta 39.

SOUTH

Questions & Answer Log
Bid Packages - #80, #98 and #99 revised scope of work.
Bid Packages - #80 revised bid form.
Geotech REP

I. Clarifications

1. ***CLARIFICATION: The lavatories in the multi-user toilet rooms are currently tagged as LAV-2A. The fixture selections for these rooms are still being finalized with the owner. These fixtures will be specified in an upcoming addendum.***
2. ***QUESTION:*** Can you confirm the width of Skylights C.1 and C.2 on A2.04? Skylight C.3 is shown at 7'-11" wide, but the other two skylights don't have a width dimension shown. They look and scale wider than the C.3 skylight. Please let me know if all 3 skylights are 7'-11" wide. If not, what are the widths of Skylights C.1 and C.2? ***ANSWER: Requested skylight dimensions have been added to sheet A2.04 for skylights C.1 & C.2.***
3. ***QUESTION:*** There are cameras shown with no symbol stating existing to remain (ETR), New (N), existing to be relocated from stock (R) Can you please confirm which type they are? ***ANSWER: All cameras shown on SS series drawings indicate whether they are New or ETR.***
4. ***QUESTION:*** There are some details such as 4 & 9/S3.6C-F that do not show an L against the precast for deck support or diaphragm. At these locations they are not shown in plan either. If we need to include something at these locations, etc we will need L size & means of attachment. ***ANSWER: Details have been revised to show deck angles.***

5. ***QUESTION:*** Reference details 3 & 19/S3.7C-F. Graphically there looks to be a TS member on top of the beams between the joists to help in deck diaphragm. If there is steel here we will to know what size & how it is fastened? ***ANSWER: Refer within for revised details.***

6. ***QUESTION:*** Will a revised curtainwall spec be issued in Addendum? The spec references a captured system whereas the drawings show a butt glazed/captured combination system ***ANSWER: A revised curtainwall specification is included within.***

7. ***QUESTION:*** * Per Addendum 2, Section I, Subsection #3 the contractor states that some of the architectural details show a Kawneer Clearwall System for the curtainwalls. The details & elevations actually show a Kawneer 1600 Wall System 2 w/ SSG horizontals & captured verticals, not a Clearwall System. A Clearwall System is more of a boutique 4 sided toggle glazed system & can not accommodate captured verticals & SSG horizontals as drawn. Please verify that the Kawneer 1600 Wall System 2 is the intended basis of design. ***ANSWER: A revised curtainwall specification is included within.***

8. ***QUESTION:*** Also, no glass type is noted for the aluminum storefront framing shown. ***ANSWER: Provide GL-20.***

9. ***QUESTION:*** Fire Rated spec 084418 only list 2 manufacturers as acceptable for rated glass and rated curtainwall. AGC Inter Edge is not a good option any longer. You are down to a single source in TGP. Will other companies/products be considered? ***ANSWER: Alternate products will be considered with proper substitution request documentation illustrating compliance with the product performance.***

10. ***QUESTION:*** For the Fire Rated Curtainwall System, OptiWhite is not an option for fire rated glazing. It's not a ceramic based product. Please adjust specification or indicate what product is to be used. ***ANSWER: Provide the appropriate fire-rated glazing per specification 088813.***

11. ***QUESTION:*** Exterior Doors at Vestibule1-600 are shown to have a single mullion between the pairs. The doors will bang into each other and are shown to bang into each other. Door manufacturer's will not warranty this design and may not provide a bid. Will the doors be redesigned to match the interior set of doors with a sidelite between them? ***ANSWER: Layout of doors has been revised to include a sidelight between the exterior set of doors. Refer to sheet A2.11F.***

12. ***QUESTION:*** Glass type GL-09 is 2-1/4" thick. This will not fit into specified curtainwall systems. ***ANSWER: Provide GL-04.***

13. ***QUESTION:*** Per elevation 2 2/A7.17 and floor plan A2.11B stair #1-341 has a fire rated framed opening. What glass and framing is correct for this area? The current call outs are not correct. ***ANSWER: Elevation 2/A7.17 need not be fire-rated. Elevation 2/A7.16 is the elevation referenced including the fire-rated curtainwall.***

14. ***QUESTION:*** Floor plan on A2.11D in room 1-211 and 1-212 show a wall partition tag as 2A01. This is a fire rated drywall partition. The corresponding elevations 9 on A7.17 show glass in these openings with no glass type given. What is the correct glass type? Similar 17/A7.17. ***ANSWER: These partitions will be revised to 2A02. Glass type shall be GL-20.***

15. ***QUESTION:*** 11/A7.16 has glass as butt glazed within these openings. GL-20 is only ¼" thick. Is there any concern for deflection beyond guidelines given the height of these panels? ***ANSWER: Glass thickness must meet performance requirements per specification 088000.***

16. ***QUESTION:*** No glass type is given on 3-4-5/A7.17. What is required? ***ANSWER: Provide GL-20.***

17. ***QUESTION:*** A5.05 has numerous details of structural sealant curtainwall without pressure plates and covers. Spec section 084413 basis of design, 1600 wall system 1 is to be captured glass all 4 sides with plates and covers. What's correct? ***ANSWER: A revised curtainwall specification is included within.***

18. ***QUESTION:*** 116133 Part 2.36 F. states panel shall be filled with acoustic absorption material as selected by Acoustics Consultant. It is impossible to price this without knowing the material. Since the drawings show the panels to be roughly 2-¼" thick with the 1/8" hardboard back and fabric face, can the following 2" thick absorptive panel material be approved? ***ANSWER: Acoustic absorption material to be 2" thick fiberglass panel with density of 6-7lbs/cu.ft. per spec section 098413. Backing material to be revised to perforated metal in lieu of hard board. Provide wear strips along bottom and backside.***

19. ***QUESTION:*** Regarding the Audio Visual Package #97: There are no drawings for the Section 274100 Performance Audio-Video Systems. Where would we find those? For the Section 274200 Common Work Results for Audiovisual Systems, is there a block diagram for the LRC. Where are the headend electronics going? Where is the rack to be installed? What amp should be priced? For the Northwest and West Commons area, where is the Samson S-zone mixer located? ***ANSWER: Performance AV drawings are included in Volume 2 of the drawings. AV electronics and rack to be installed at the main desk near keynote 66. Amp wattage to be determined based on the speaker count and distance. Head end for the commons area to be located in IDF 1-529A.***

20. ***QUESTION:*** Please provide a specification on coiling doors 1613B & 1628B. ***ANSWER: Specification 083323 is included within.***

II. Specifications

1. REVISE Section 000100 – TABLE OF CONTENTS
    a. Typographical errors corrected.
2. ADD Section 083323 – OVERHEAD COILING DOORS.
3. REVISE Section 084413 – GLAZED ALUMINUM CURTAIN WALLS
    a. 2.1 Manufacturers: Curtainwall system revised as indicated.
    b. Structural sealant joints and related sections added.
    c. Quality control measures and related language added regarding structural sealants.
4. REVISE Specification 116133 – Stage Rigging Systems as noted:
    a. ADD – 1.5 - P – Sound Absorbing and Diffusing Wall Panels – Section 098413
    b. REVISE – 2.36-E – Rear of Panel shall be covered with ~~a 1/8-inch thick tempered hardboard~~ **perforated metal panel**. **Panel shall be minimum 20-gauge carbon steel with round perforations. Perforations shall be 1/4-inch on 5/16-inch staggered centers for an open area of not less than 50%.** Paint exposed surfaces black. **Provide plastic edge banding at all panel edges to reduce wear on acoustic fabric.**
    c. REVISE – 2.36-F – Panel shall be filled with **2-inch thick fiberglass panels with a density of 6 to 7 pounds per cubic foot** ~~acoustic absorption material as selected by Acoustics Consultant~~. **Refer to Section 098413 – Sound Absorbing and Diffusing Wall Panels.**
5. REVISE Specification 116153 – Theatrical Luminaires and Accessories as noted:
    a. REVISE – 2.5-K-1-b: Fixtures shall be provided with the following lenses, within a tolerance of +/- 2-degrees:
        i. **32** ~~21~~ degree round
        ii. **50** ~~27~~ degree round
        iii. **29** ~~21~~ degree by **58** ~~37~~ degree oblong
        iv. **76** ~~68~~ degree round
    b. ADD 2.6-A-6 – **All lenses shall be provided with color frame.**
6. REVISE Section 224200 – COMMERCIAL PLUMBING FIXTURES
    a. Paragraph 2.5.A.1.a: Replace “0355.012” with “0356.421.”
    b. Paragraph 2.5.B.1.a: Replace “EBF-650” with “EAF-275-SOL-CP-0.5GPM-AER-IR-IQ-10S-FCT”.

c. Paragraph 2.5.B.1: REMOVE paragraphs b through d.

d. Paragraph 2.9: ADD paragraph. Refer to enclosed specification.

7. REVISE specification 274100 – PERFORMANCE AUDIO-VIDEO SYSTEMS
   a. Add verbiage regarding control & DSP programming.
   b. Update projector lens part numbers.
   c. Add power sequencing panel controls.
   d. Add low-voltage power supply and relays.
   e. Add Bluetooth and control for stage manager racks.
   f. Add audio SDI video input for portable video displays.
   g. Add additional wireless microphones to alternates.

III. Modified Drawings

STRUCTURAL

2. Sheet S0.1C ***(Full size sheet issued)***
   a. Modified note 5 of the steel deck notes which corresponds to the replacement of the commons acoustical cellular roof deck to a regular steel roof deck.
   b. Modified note 1 of the shear connector notes. 6" deep composite slabs require a 4.5" long shear stud.
   c. Added concrete and concrete reinforcement material allowance to account for switchback stair foundations near studio theatre vestibule 1-612
3. Sheet 2.1C-F ***(Full size sheet issued)***
   a. Shifted column R.3/R.6. Updated roof framing accordingly on S2.2C-F. Adjusted grids accordingly.
   b. Revise curved frost wall depression in the same area due to coordinate with door locations.
   c. Adjusted column, pier and footing locations at columns N.4/N.Q and N.12/N.Q.
4. Sheet 2.1C-F-EP1 ***(Full size sheet issued)***
   a. Plan 1:
      i. Adjusted floor opening over horizontal duct plenum near north and south cheek walls.
5. Sheet S2.2C-F ***(Full size sheet issued)***
   a. Plan 1
      i. Revised plan note 11, 16 and added plan notes 31 and 32.
      ii. Added roof drain openings and required framing per typical details.
      iii. Clarified a couple of missing beam sizes.
      iv. Clarified missing kicker information at the canopy roof.
      v. Adjusted column location per S2.1C-F and associated framing.
      vi. Added temporary shoring note north of the stage area.

vii. Added details 5 and 8 on S3.13C-F.

viii. Clarified missing transfer post size at canopy, up against the 1973 addition.

b. Plan 2

i. Modified 2 beam sizes

6. Sheet S2.3C-F ***(Full size sheet issued)***

a. Revised plan note 11, 16 and added plan notes 31 and 32.

b. Added roof drain roof openings and associated framing requirements.

7. Sheet S2.4C-F ***(Full size sheet issued)***

a. Plan 1

i. Clarified catwalk framing sizes

ii. Added detail 4/S3.13C-F

b. Plan 2

i. Added missing rigging beams and rigging beam connection requirements.

ii. Added roof drain slab openings and associated framing requirements.

8. Sheet S2.5C-F ***(Full size sheet issued)***

a. Revised plan note 11, 16 and added plan notes 31 and 32.

b. Plan 1

i. Added shear studs to W8X18 beams only.

ii. Added detail 4/S3.13C-F

iii. Clarified catwalk kicker sizes.

iv. Added details 6/S3.13C-F, 7/S3.13C-F, 1-4/S3.14C-F

v. Revised catwalk plate size at north end of stage only.

vi. Added roof drain openings and associated framing requirements.

vii. Added elevation 6/S4.3C-F

c. Plan 2

i. Added details 1-3 on S3.14C-F

ii. Added roof drain/hatch openings and associated framing requirements.

iii. Added stiffener requirements for W14 to W21,W24 beam connections.

9. Sheet S2.6C-F ***(Full size sheet issued)***

a. Plan 7

i. Clarified missing beam sizes, isolation joint information and beam reaction information.

b. Plan 8

i. Revised steel plate thickness over catwalk.

ii. Clarified detail along precast wall.

10. Sheet S2.7C-F ***(Full size sheet issued)***

a. Plan 1
    i. Revised beam sizes along the curved steps and along the existing theater step reinforcement.
    ii. Revised some beam dimensions.
    iii. Added details 3/S3.12C-F
b. Plan 2
    i. Revised catwalk steel plate thickness.
c. Plan 3
    i. Revised some beam spacing.
    ii. Added missing beam reaction.
    iii. Added missing isolation joint information.

11. Sheet S2.7C-F ***(Full size sheet issued)***
    a. Plan 1
        i. Added missing isolation joint information.
        ii. Added detail 6/S3.12C-F
        iii. Shifted two columns per foundation plan comments and revised the framing in those areas accordingly.
        iv. Added detail 14/S3.8C-F
        v. Clarified a missing beam size.
    b. Plan 2
        i. Added catwalk member sizes.
        ii. Added details 1-3 on S3.13C-F
12. Sheet S3.1C-F ***(Full size sheet issued)***
    a. Modified detail 6
13. Sheet S3.3C-F ***(Full size sheet issued)***
    a. Modified detail 1
14. Sheet S3.4C-F ***(Full size sheet issued)***
    a. Modified detail 3
15. Sheet S3.6C-F ***(Full size sheet issued)***
    a. Provided missing information to all framing details on this sheet.
16. Sheet S3.7C-F ***(Full size sheet issued)***
    a. Provided missing information to all framing details on this sheet.
17. Sheet S3.8C-F ***(Full size sheet issued)***
    a. Provided missing information to all framing details on this sheet.
18. Sheet S3.9C-F ***(Full size sheet issued)***

a. Provided missing information to all framing details on this sheet.

19. Sheet S3.10C-F ***(Full size sheet issued)***
    a. Provided missing information to all framing details on this sheet.
20. Sheet S3.11C-F ***(Full size sheet issued)***
    a. Provided missing information to all framing details on this sheet.
21. Sheet S3.12C-F ***(Full size sheet issued)***
    a. Provided missing information to details 3 and 6.
22. Added sheets S3.13C-F and S3.14C-F with all new details.
23. Sheet S4.1C-F ***(Full size sheet issued)***
    a. Adjusted an opening on elevation 1.
24. Sheet S4.3C-F ***(Full size sheet issued)***
    a. Added elevation 6.
25. Sheet S4.4C-F ***(Full size sheet issued)***
    a. Modified hanger load on elevation 1
26. Sheet S4.5C-F ***(Full size sheet issued)***
    a. Modified all joist load diagrams to break up the total service load to a service dead and snow loads. Provided missing RTU loads.
27. Sheet S4.7C-F ***(Full size sheet issued)***
    a. Revised detail 1
28. Added new sheet S4.8C-F
29. Sheet S5.1C-F ***(Full size sheet issued)***
    a. Modified column schedule based on column adjustments noted on the foundation sheet.

ARCHITECTURAL

1. Sheet A2.04 OVERALL FLOOR PLAN ***(Full size sheet issued)***
    a. Relocated roof access hatch
2. Sheet A2.11B FLOOR PLAN LEVEL 1 AREA B ***(Full size sheet issued)***
    a. Added Room IDF 1-529A.
    b. Revised transaction window location near 1-129.
    c. Removed folding glass partition between Reception 1-129 and Corridor 1-003. Replace with keynote 22.
3. Sheet A2.11D FLOOR PLAN LEVEL 1 AREA D ***(Full size sheet issued)***
    a. Revised wall types as indicated to 2A12.
4. Sheet A2.11F FLOOR PLAN LEVEL 1 AREA F ***(Full size sheet issued)***

a. Added keynote #93 at zero clearance thresholds

b. Added section 4 & 12/A7.26

c. Revised door 1628B and infilled opening with 8" CMU

d. Revised dressing room layout

5. Sheet A2.12F FLOOR PLAN LEVEL 1 AREA F ***(Full size sheet issued)***

    a. Added section 4 & 12/A7.26

    b. Revised Upper Parterre seating per TS1.11

    c. Added enlarged stair callout

    d. Partition wall added adjacent to stairs

6. Sheet A2.14F FLOOR PLAN UPPER SEATING AREA F ***(Full size sheet issued)***

    a. Removed rear curved partition below follow spot room

7. Sheet A2.15F FLOOR PLAN CATWALKS ***(Full size sheet issued)***

    a. Removed note regarding Head block beams above stage right pin rail gallery

    b. Relocated roof access hatch

8. Sheet A3.11F REFLECTED CEILING PLAN LEVEL 1 AREA F ***(Full size sheet reissued)***

    a. Added gypsum board ceiling below control room

9. Sheet A3.12F REFLECTED CEILING PLAN LEVEL 2 AREA F ***(Full size sheet issued)***

    a. Added two reflector panels in Studio Theatre

10. Sheet A3.13F REFLECTED CEILING PLAN LEVEL 3 AREA F ***(Full size sheet issued)***

    a. Added gypsum board ceiling below follow spot room

11. Sheet A4.11 PRECAST WALL ELEVATIONS ***(Full size sheet issued)***

    a. Revised location of opening to avoid conflict with catwalk hanger

12. Sheet A5.16 EXTERIOR WALL SECTIONS & DETAILS – PHASE C ***(Full size sheet issued)***

    a. Added gypsum board ceiling below control room

13. Sheet A5.18 EXTERIOR WALL SECTION & DETAILS – PHASE C ***(Full size sheet issued)***

    a. Added detail 15/A5.18 for insulation at truss bearing pocket

    b. Removed isolation hanger from detail 13/A5.18

14. Sheet A6.04 STAIR PLANS & DETAILS – PHASE C ***(Full size sheet issued)***

    a. Added enlarged plan 6/A6.04

15. Sheet A7.18 INTERIOR ELEVATIONS & DETAILS – PHASE C ***(Full size sheet issued)***

    a. Revised dressing room elevations 6,7,9 & 10

16. Sheet A7.26 AUDITORIUM SECTIONS & DETAILS – PHASE C ***(Full size sheet issued)***
    a. Added sections 4 & 12 clarifying upper parterre seating
    b. Duct liner note added in detail 1/A7.26
    c. Revised handrail
17. Sheet A7.27 AUDITORIUM SECTIONS & DETAILS – PHASE C ***(Full size sheet issued)***
    a. Revised gypsum board shaping along balcony edge
18. Sheet A7.29 AUDITORIUM SECTIONS & DETAILS – PHASE C ***(Full size sheet issued)***
    a. Revised details 4 & 5
19. Sheet A8.12 DOOR & WINDOW SCHEDULES & DETAILS ***(Full size sheet issued)***
    a. Revised door 1628B to 8' wide

MECHANICAL

1. Sheet MD2.00B.c MECHANICAL DEMOLITION PLAN LOWER LEVEL AREA B ***(Full size sheet issued)***
    a. Revised piping that was shown to be demolished to existing to remain.
    b. Showed existing dual temp and condensate risers to be demolished and capped back at the valves.
2. Sheet MD2.01A.c MECHANICAL DEMOLITION PLAN LEVEL 1 AREA A ***(Full size sheet issued)***
    a. Added demolition sheet to show demolition of existing diffusers and associated ductwork in the cafeteria.
3. Sheet MD2.01F.c MECHANICAL DEMOLITION PLAN LEVEL 1 AREA F ***(Full size sheet issued)***
    a. Revised demolition of entry area, lobby and bathrooms to show clarity.
    b. Revised demolition of dual temperature piping.
4. Sheet M2.01A.c MECHANICAL DUCT FLOOR PLAN LEVEL 1 AREA A ***(Full size sheet issued)***
    a. Added sizes of ductwork and tags for diffusers.
5. Sheet M2.01D.c MECHANICAL DUCT FLOOR PLAN LEVEL 1 AREA D ***(Full size sheet issued)***
    a. Added two return diffusers to the learning resource center.
    b. Revised the ductwork layout of the offices.
6. Sheet M2.01F.c MECHANICAL DUCT FLOOR PLAN LEVEL 1 AREA F ***(Full size sheet issued)***
    a. Revised medium pressure ductwork to the VAV boxes.
    b. Added two supply diffusers to the toilet areas.
7. Sheet M2.02B.c MECHANICAL DUCT FLOOR PLAN LEVEL 2 AREA B ***(Full size sheet issued)***
    a. Added information for the supply diffusers and the electric duct heater serving reading room and office.
8. Sheet M3.00B.c MECHANICAL PIPE FLOOR PLAN LOWER LEVEL AREA B ***(Full size sheet issued)***
    a. Revised existing piping to remain.
    b. New piping shown in the tunnel to serve as temporary piping.
9. Sheet M3.01F.c MECHANICAL PIPE FLOOR PLAN LEVEL 1 AREA F ***(Full size sheet issued)***

a. Removed multiple summer/winter switch over valves and consolidated to one location.
b. Revised dual temp pipe routing for the final route.
c. Added temporary by-pass line.
d. Added expansion bellows, guides and anchors.

10. Sheet M3.02B.c MECHANICAL PIPE FLOOR PLAN LEVEL 2 AREA B ***(Full size sheet issued)***
    a. Revised note for 2-way control valve for VAVs.
    b. Added summer/winter switchover valve.
    c. Added expansion bellows, guides and anchors
11. Sheet M3.02F.c MECHANICAL PIPE FLOOR PLAN LEVEL 2 AREA F ***(Full size sheet issued)***
    a. Removed summer/winter switchover valve.
    b. Added expansion bellows, guides and anchors
12. Sheet M3.03B.c MECHANICAL PIPE FLOOR PLAN LEVEL 3 AREA B ***(Full size sheet issued)***
    a. Revised note for 2-way control valve for VAVs.
    b. Added summer/winter switchover valve.
    c. Added expansion bellows, guides and anchors
13. Sheet M5.01.c MECHANICAL SCHEDULES ***(Full size sheet issued)***
    a. Added diffuser Tag J

PLUMBING

1. Sheet P1.10B.c SANITARY & DRAINAGE FLOOR PLAN – UNDERGROUND AREA B (PHASE C) ***(Full size sheet reissued)***
    a. Revised underground plumbing.
2. Sheet P1.10F SANITARY & DRAINAGE FLOOR PLAN – UNDERGROUND AREA F ***(Full size sheet reissued)***
    a. Added rerouting of existing downspout piping.
3. Sheet P1.11B.c SANITARY & DRAINAGE FLOOR PLAN – LEVEL 1 AREA B (PHASE C) ***(Full size sheet reissued)***
    a. Added rerouting of existing downspout piping.
4. Sheet P1.11F SANITARY & DRAINAGE FLOOR PLAN – LEVEL 1 AREA F ***(Full size sheet reissued)***
    a. Added rerouting of existing downspout piping.
5. Sheet P1.12B SANITARY & DRAINAGE FLOOR PLAN – LEVEL 2 AREA B ***(Full size sheet reissued)***
    a. Added notation of relocated electric water cooler.
6. Sheet P2.10B WATER DISTRIBUTION FLOOR PLAN – UNDERGROUND AREA B (PHASE C)
    a. ADD sheet in its entirety.
7. Sheet P2.11F WATER DISTRIBUTION FLOOR PLAN – LEVEL 1 AREA F

a. Revised extent of replacement of hot water main.

b. Revised fixture LAV-2A to be WF-1 in multi-user toilet rooms. Refer to drawings and clarifications.

8. Sheet P2.12B WATER DISTRIBUTION FLOOR PLAN – LEVEL 2 AREA B
    a. Added note regarding relocated electric water cooler.
9. Sheet P2.13B WATER DISTRIBUTION FLOOR PLAN – LEVEL 3 AREA B
    a. Revised fixture tag in public toilet rooms. Tag WF-1 was LAV-1A.
10. Sheet PD1.10B.c PLUMBING DEMOLITION - LOWER LEVEL AREA B (PHASE C) ***(Full size sheet reissued)***
    a. Added demolition of existing underground downspout piping.
11. Sheet PD1.10F PLUMBING DEMOLITION - LOWER LEVEL AREA F ***(Full size sheet reissued)***
    a. Added demolition of fixtures, suspended water piping, underground sanitary piping, and sewage ejector..
12. Sheet PD1.11B.c PLUMBING DEMOLITION – LEVEL 1 AREA B (PHASE C) ***(Full size sheet reissued)***
    a. Added demolition of existing suspended downspout piping.
    b. Added demolition of existing plumbing fixtures.
13. Sheet PD1.11F PLUMBING DEMOLITION – LEVEL 1 AREA F ***(Full size sheet reissued)***
    a. Added additional demolition of piping and floor drain.
14. Sheet PD1.12B PLUMBING DEMOLITION – LEVEL 2 AREA B ***(Full size sheet reissued)***
    a. Added note to clarify demolition of drinking fountain/electric water cooler.
15. Sheet PD1.12F PLUMBING DEMOLITION – LEVEL 2 AREA F ***(Full size sheet reissued)***
    a. Added notes clarifying demolition.

ELECTRICAL

1. Sheet LD0.10 LIGHTING FIXTURE SCHEDULE ***(Full size sheet issued)***
    a. S-series fixture schedule for performance spaces and related adjacent spaces.
2. Sheet ED1.00c EXTERIOR DEMOLITION PLAN ***(Full size sheet reissued)***
    a. Changed (2) keynote #2 to keynote #4.
    b. Changed (5) keynote #1 to keynote #3.
    c. Added keynote #4 to keynotes on sheet.
3. Sheet E2.00F-1c LOWER LEVEL POWER PLAN AREA F ***(Full size sheet reissued)***
    a. Added a wall mounted fourplex receptacle, circuit, tag and added keynote 1.
    b. Updated location of panel pad-2b
4. Sheet E2.01B-1c FIRST FLOOR POWER PLAN AREA B ***(Full size sheet reissued)***
    a. Added power outlets for 1-337, 1-336, 1-335
5. Sheet E2.01D-1c FIRST FLOOR POWER PLAN AREA D ***(Full size sheet reissued)***

a. Remove (2) receptacles from circuit pcp-1:22 and create a new circuit pcp-1:37.
b. Remove (2) receptacles from circuit pcp-1:30 and create a new circuit pcp-1:39.
c. Added keynote #1 to classroom 1-219.
d. Added sentence to keynote #2.
e. Added sentence to keynote #10.

6. Sheet E2.01E-1c FIRST FLOOR POWER PLAN AREA E ***(Full size sheet reissued)***
    a. Added circuit number to receptacle.
    b. Move receptacle from dressing room 1-616 to theatre classroom 1-623.
    c. Move receptacle in theatre classroom 1-623 down the wall.
7. Sheet E2.02B-1c SECOND FLOOR POWER PLAN AREA B ***(Full size sheet reissued)***
    a. Tag receptacle in office 2-615.
    b. Tag receptacle in office 2-616.
8. Sheet E2.02F-1c SECOND FLOOR POWER PLAN AREA F ***(Full size sheet reissued)***
    a. Removed signal processing rack power from control room 612
9. Sheet E2.03CF CAT WALK POWER PLAN AREA F ***(Full size sheet reissued)***
    a. Added (4) receptacles and circuit them to pad-6b:35.
    b. Moved power for signal processing rack from control room to follow spot room.
10. Sheet E2.04B-1c ROOF POWER PLAN AREA B ***(Full size sheet reissued)***
    a. Added keynote #1 to hvac equipment disconnect switch.
    b. Circuit and tag thermal switch for ef-7.
    c. Move keynote #1 to point to disconnect switch.
    d. Move keynote #2 to point to motor switch.
    e. Added keynote #1 to thermal switch for ccp-13.
11. Sheet E2.04F-1c ROOF POWER PLAN AREA F ***(Full size sheet reissued)***
    a. Remove sentence from keynote #2.
12. Sheet E3.00F-1c LOWER LEVEL LIGHITNG PLAN AREA F ***(Full size sheet reissued)***
    a. Remove all lights, switches, and occupancy sensors from Elev Access 0-721, Orchestra Pit 0-720, and Arbor 0-724. Lighting fixtures connected to theatrical controls. Local control devices to be digital switches as part of theatrical control system. Refer to LD series sheets for lighting design and quantities.
    b. Added keynote #2 to the keynotes and on the sheet in 3 locations mentioned above.
13. Sheet E3.01A-1c FIRST FLOOR LIGHTING PLAN AREA A ***(Full size sheet reissued)***
    a. Remove keynote #5 since we are showing the circuit for lighting fixture in cafeteria 1-100.
    b. Hide (7) wall luminaries near corridor 1-003.
14. Sheet E3.01B-1c FIRST FLOOR LIGHTING PLAN AREA B ***(Full size sheet reissued)***

a. Added ceiling mounted occupancy sensor to office 1-337.
b. Added ceiling mounted occupancy sensor and wall mounted switch to space next to office 1-335.

15. Sheet E3.01F-1c FIRST FLOOR LIGHTING PLAN AREA F ***(Full size sheet reissued)***
    a. Update (2) ceiling mounted occupancy senseors to be day light ocupancy sensors in vest. 1-600.
    b. Added key switch to vest 1-622.
    c. Added wall mounted occupancy sensor and keynote #7 to scene shop 1-613.
    d. Added switch to elec 1-614.
    e. Update the theatre classroom 1-623 lighting and added (2) keynote #4 and a keynote #3.
    f. Added keynote 15 to keynotes on sheet.
    g. Remove all lights, switches, and occupancy sensors from Vest 1-603, Vest 1-637, Vest 1-644, Vest 1-612, Dressing Rooms 1-618 and 1-621, Vest 1-608, Corridor 1-611, Vest 1-610, and Vest 1-625. Added keynote 15. Lighting fixtures connected to theatrical controls. Local control devices to be digital switches as part of theatrical control system. Refer to LD series sheets for lighting design and quantities.
    h. Remove exit sign from outside of vest. 1-631.
16. Sheet E3.02B-1c SECOND FLOOR LIGHTING PLAN AREA B ***(Full size sheet reissued)***
    a. Added one occupancy sensor and key switch to corridor 2-316.
    b. Remove 2 occupancy sensors and key switches from the vestibule
    c. Remove 2 f-4 type downlights.
17. Sheet E3.02D-1c SECOND FLOOR LIGHITNG PLAN AREA D ***(Full size sheet reissued)***
    a. Change keynote #1 to not used and remove keynote 1 from plan.
18. Sheet E3.02F-1c SECOND FLOOR LIGHTING PLAN AREA F ***(Full size sheet reissued)***
    a. Added keynote #6 to keynotes on sheet and added keynote #6 to lights to the upper left area of the scene shop 1-613.
    b. Added a key switch in vestibule.
    c. Tag light in office 2-615.
    d. Tag light in office 2-616.
    e. Replaced the f-24 type of lights in the scene shop with s-13 type per theatre consultants comments.
19. Sheet E5.02c RISER DIAGRAMS ***(Full size sheet reissued)***
    a. Change (2) breaker from existing to remain to existing to be removed in riser diagram 1.
    b. Added (4) existing to be removed callout in riser diagram 1.
    c. Added a existing to be removed label to exiting load in riser diagram 1.
    d. Change callout to indicate 2"c in riser diagram 2.
    e. Change callout to indicate 3#10, 1#10g in riser diagram 2.
20. Sheet E5.04c RISER DIAGRAMS ***(Full size sheet reissued)***
    a. Added wire size for elevator from pad-5

b. Updated primary wire size for t-ad7
c. Added ig ground wire for p-av, p-av2, p-av3
d. Updated phase wire size and conduit size for dmx racks.
e. Update circuit breaker feeding pad-6 from 100 amp to 150 amp.
f. Added wire size for spd of mdp-ad3

21. Sheet E5.06c RISER DIAGRAMS ***(Full size sheet reissued)***
    a. Update the voltage to indicate 480/277v on riser diagram 2.
22. Sheet E6.01c SCHEDULES ***(Full size sheet reissued)***
    a. Cloud main device description for panel mdp-l.
23. Sheet E6.02c SCHEDULES ***(Full size sheet reissued)***
    a. Cloud circuit space #29 on panel pad-6b and update load description.
    b. Cloud circuit space #27 on panel p-av and update load description.
    c. Update the main device for mdp-ad1, mdp-ad2, and pad-5 from mlo to mcb
24. Sheet E6.03c SCHEDULES ***(Full size sheet reissued)***
    a. Cloud circuit space #37 on panel pcp-1 and update load description.
    b. Cloud circuit space #39 on panel pcp-1 and update load description.
    c. Assign spare and cloud circuit space #11 on panel pad-1b.
    d. Updated the main device for mdp-ad2 from mlo to mcb
    e. Removed the isolated ground bus for pad-3
25. Sheet E6.04c SCHEDULES ***(Full size sheet reissued)***
    a. Cloud main device description for panel mdp-p.
    b. Added spares to the spare circuits on panel pcl-1.
26. Sheet E6.05c LIGHTING SCHEDULES ***(Full size sheet reissued)***
    a. Removed f-24 from the shcedule.
    b. Added note for theatre consultants lighting fixture schedule.
27. Sheet E7.01 DETAILS ***(Full size sheet reissued)***
    a. Added a text em power to detail 2

THEATRE SYSTEMS

1. Sheet TE6.12 THEATRE LIGHTING & DISTRIBUTION PROSCENIUM THEATRE SCHEDULES ***(Full size sheet issued)***
    a. Corrected load sums in lighting device schedule.
2. Sheet TR1.13 THEATRE RIGGING PROSCENIUM THEATRE PLANS ***(Full size sheet issued)***
    a. Relocation of Proscenium Wall Acoustic Curtain.

b. Relocation of rear wall acoustic curtains to side walls.

3. Sheet TR2.11 THEATRE RIGGING PROSCENIUM THEATRE SECTION ***(Full size sheet issued)***
    a. Relocation of Proscenium Wall Acoustic Curtain.
4. Sheet TR2.12 THEATRE RIGGING PROSCENIUM THEATRE SECTIONS ***(Full size sheet issued)***
    a. Relocation of rear wall acoustic curtains to side walls.
5. Sheet TR3.22 THEATRE RIGGING PROSCENIUM THEATRE ELEVATION ***(Full size sheet issued)***
    a. Adjusted size of side wall acoustic panels.
6. Sheet TR3.23 THEATRE RIGGING PROSCENIUM THEATRE ELEVATION ***(Full size sheet issued)***
    a. Relocation of Proscenium Wall Acoustic Curtain.
    b. Updated detail for side wall acoustic curtain
7. Sheet TR5.12 THEATRE RIGGING PROSCENIUM THEATRE DETAILS ***(Full size sheet issued)***
    a. Updated detail for side wall acoustic panels
    b. Removed Rear wall acoustic curtain detail
8. Sheet TR6.11 THEATRE RIGGING PROSCENIUM THEATRE SCHEDULES ***(Full size sheet issued)***
    a. Updated schedules for adjusted acoustic curtains
9. Sheet TS1.11 THEATRE SEATING PROSCENUM THEATRE PLAN ***(Full size sheet issued)***
    a. Added row of seating at rear of parterre and sketch rear wall.

ELECTRICAL FOR AV

1. Sheet EA2.10F ELECTRICAL FOR AV SYSTEMS - ORCHESTRA PIT LOCATIONS ***(Full size sheet issued)***
    a. Add panel AV013 and update conduit.

ELECTRICAL FOR AV

1. Sheet PA2.01 PERFORMANCE AV SYSTEMS - AUDITORIUM SIGNAL FLOW A ***(Full size sheet issued)***
    a. Add panel AV013 and update cabling.
2. Sheet PA2.05 PERFORMANCE AV SYSTEMS – MAIN RACK SIGNAL FLOW ***(Full size sheet issued)***
    a. Add power sequencing panel controls.
    b. Add low-voltage power supply and relays.
3. Sheet PA2.06 PERFORMANCE AV SYSTEMS – SIGNAL FLOW DETAILS ***(Full size sheet issued)***
    a. Update volume control wiring.
    b. Update stage manager rack wiring.
4. Sheet PA3.01 PERFORMANCE AV SYSTEMS - PANEL ELEVATIONS ***(Full size sheet issued)***
    a. Add panel AV013.
5. Sheet PA4.01 PERFORMANCE AV SYSTEMS - RACK ELEVATIONS ***(Full size sheet issued)***

a. Update stage manager rack.

6. Sheet PA4.02 PERFORMANCE AV SYSTEMS - RACK ELEVATIONS ***(Full size sheet issued)***

a. Update stage manager rack.

This addendum consists of: (127) Text Pages (6) Specification Sections and (119) Drawing Sheets.

END OF ADDENDUM

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Darien, IL 60561
630.969.7000
Fax 630.737.0518
www.wightco.com

Project Name: *District 99 MFP Implementation DG South Phase C*

Project Number: 180030

Date: December 11, 2019

Bid Question/Answer Log No. 2

The following clarification information is provided in response to questions received in accordance with the bid documents for the following Bid Packages:

Bid Group: 8
Bid Packages: 80-103

#	Questions	Date	Answers	Date/By
1.	There are some material allowances called out in the upper right corner of sheet S0.1C (Add #2) Please confirm that these are already included within the $$ Allowance listed on the bid forms?	12/5/19	Disregard the material allowances in the structural drawings, this is covered by the allowance specified in the steel bid package.	IE 12/11/19
1.	On page 59 of 656 in the Project Manual, Item #50 & #51 lists the Insurance information. Item #51 states - 51. TRADE CONTRACTOR hereby acknowledges that any sub-tiers performing labor on TRADE CONTRACTOR'S behalf is required to carry the same insurance requirements as noted in item 0.20. TRADE CONTRACTOR is required to provide sub's Certificate of Insurance to Wight in a timely manner. This TRADE CONTRACTOR will be issued a $100 back charge for each time this TRADE CONTRACTOR's or Subtier's certificate of insurance are submitted incorrectly. My question is where or what is "noted in item 0.20"?		It should read "[…] carry the same insurance requirements as noted in item 50".	IE 12/10/19

2.	There are no sections, details or specifications for the locking transaction window per 3/A7.17. What is required?	12/5/19		
11.	Are the earth spoils removed by BP80 Contractor to be considered Clean Construction & Demolition Debris (CCDD)? Ref. BP80 SOW #6. If yes, will the District provide certification of IEPA forms as required for disposal as CCDD?	12/5/19	Yes, a Clean 663 will be provided.	12/9/18 AP
12.	Do the painted concrete and masonry to be removed by BP80 Contractor contain lead? If no, will the District provide certification of IEPA forms as required for disposal as CCDD?	12/5/19	Lead Containing Materials are unknown. Painted surfaces have not been tested. Fill in the alternate price in the bid form to properly dispose of lead containing materials. See revised scope document and bid form attached.	12/9/19 AP
13.	I could not locate the geotechnical report… Is there one available?	12/6/19	Geotechnical Report is included in Addendum 3.	12/10/19 IE
22.	Spec's 084113 call for mock up. No mock up location can be located on the drawing. What is required?	12/3/19	No additional Mockup will be required. When Installation begins the installation will be reviewed for compliance with contract documents.	12/9/19
28.	Can the bid form please be revised to submittal log due within 10 days of NTP and submittal drawings due within 120 days of NTP? This is in attempt to give ourselves the required amount of time required to properly coordinate and detail all theatrical equipment submittal drawings. Cut sheets and color samples can be submitted within 21 days.	12/9/19 WC	Bid Form will not be revised, however submittals will need to be coordinated and approved to meet the project schedule. As long as the suggested durations do not impact project schedule additional submittal time may be approved.	12/10/19 AP
29.	The steel angle that is around the floor of the Studio Theatre per detail 1 and 2 A7.19 does not pertain to our scope of work. Could this please be moved to the steel or flooring bid packages?	12/9/19 WC	Yes. This steel angle will be by the flooring contractor	12/10/19 AP
30.	Could you please confirm the interior aluminum frames & folding glass partitions will NOT be in bid package 90 – Curtainwall.	12/9/19L SG	The folding glass partitions are by the general trades, the glass for the interior aluminum partitions is by the curtainwall/glazing contractor and the aluminum frames will be by the Metal Framing & Drywall Contractor. See revised Metal Framing & Drywall and General Trades scopes included in Addendum 3 for more information.	12/10/19 IE

31.	Which trade contractor is responsible for the furnish and install of the perimeter fire containment system detailed in 4 & 6/A7.22?	12/10/19 LSG	All firesafing including this floor edge safing detail will be by the General Trades.	12/10/19 AP
33.	Please clarify construction detail 11/A5.22. Will the Metal Panel Contractor furnish and install the 1-1/2" furring channel required for their scope of work?	12/10/19	Yes.	12/10/19 IE
34.	What happened to bid package #94 – Electrical Rough in for LV & AV?	12/10/19	The raceways for LV/AV scope of work has been added to the BP#93 Electrical scope. The devices, wiring, programming, etc. Are included in BP #96 LV/AV/Security Scope.	12/10/19 AP
35.	Is there any existing Roofing Warranty that has to be matched?	12/10/19	Only one roof that will be tied into has an existing warranty and it is along column line 63.12.	12/10/19 AP
37.	Upon review i see that a performance bond and pre-qualification is required for Bid Package #102-Theatre Seating. Is this also a requirement for Section 116123-Stage platforms systems within this section	12/10/19	Separate performance bonds will be required for the winning bidder for BP#102 and BP#103.	12/10/19 AP

BG8 BP80 SCOPE OF WORK FOR SELECTIVE DEMOLITION & PARTIAL WRECKING – SOUTH HIGH SCHOOL PHASE C

Scope – This TRADE CONTRACTOR's scope shall include but not be limited to the scope listed below. Please see entirety of bid documents for all scope requirements.

1. This TRADE CONTRACTOR shall reference ALL General, Existing Architectural, Architectural Demolition, Architectural, Mechanical, Mechanical Demolition, Plumbing Demolition, Plumbing, Electrical Demolition, Electrical, and Technology Sheets included in this Bid Group 8 as they relate to Demolition. This TRADE CONTRACTOR shall read all Specification Sections in this manual as well as Notes and General Notes included in the drawings as they pertain to this scope of work. This TRADE CONTRACTOR shall review the project SCHEDULE included in this project manual and provide sufficient manpower and equipment to complete this TRADE CONTRACTOR's scope of work within the designated durations provided.

   Note: This TRADE CONTRACTOR'S scope of work shall be limited to those areas as indicated on plans for Phase C as shown in Exhibit A Construction Phasing. This is Phase 3 of 3 phases of the Master Facility Plan, thus some drawings may include areas of work not to be included in this scope of work.

   Note: This TRADE CONTRACTOR acknowledges there are phased areas of demolition that occur per Exhibit G Demolition Phasing Plan.

2. It is highly recommended that this TRADE CONTRACTOR attends a **MANDATORY** pre-bid walk through December 3rd at 1:00 P.M. in order to clearly understand the extent of the building demolition that is required.

3. This TRADE CONTRACTOR shall be responsible for performing all Selective Demolition & Partial Wrecking and activities within the defined demolition work area as shown in the plans and specifications. This TRADE CONTRACTOR shall furnish all manpower, supervision, delegated design for shoring, permitting, equipment, means and methods required for the demolition scope of work. This TRADE CONTRACTOR to furnish all required dumpsters and trucking/hauling to remove and legally dispose of any and all demolished materials off-site.

   NOTE: Asbestos Abatement activities will be performed prior to demolition activities and a clean environmental document will be provided. Review Bid Group 8 Schedule provided for more information on abatement of existing areas in school.

   NOTE: Reclaiming of refrigerant will be by the Mechanical Trade Contractor.

   NOTE: This TRADE CONTRACTOR acknowledges the demolition of any building envelope items (exterior walls, etc.) may need to occur out of sequence with the Project Schedule. Roofing Demolition (membrane and insulation) required over the West Events Entrance where the roof structure shall remain in place (West of gridline 63.EE) area will be by the Roofing Trade Contractor. All other roofing demolition is the responsibility of this TRADE CONTRACTOR.

4. This TRADE CONTRACTOR shall be responsible for safe demolition of all existing building structures (including but not limited to steel framing and joists, decking, roofing, masonry, and concrete), mechanical assemblies, wall assemblies, roof assemblies, expansion joints, brick fascia, roof overhangs, slabs on grade, elevated concrete slabs,

existing building foundations as shown on the architectural and structural demolition plans. Note, the sequencing of this demolition needs to be reviewed/approved by Construction Manager prior to proceeding and needs to follow overall construction schedule.

5. This TRADE CONTRACTOR shall be responsible for all concrete saw-cutting, steel cutting/torching required for demolition.

6. This TRADE CONTRACTOR required to provide any/all excavation required to demolish/remove existing foundations and foundation walls that are scheduled for demolition. Removal of earth spoils and debris associated to this TRADE CONTRACTOR's scope of work shall be responsibility of this TRADE CONTRACTOR; Backfill will be the responsibility of the EXCAVATION TRADE CONTRACTOR.

Note: There are interior slab areas indicated by Plan Note #20 on the structural drawings that are not the responsibility of this TRADE CONTRACTOR. The EXCAVATION TRADE CONTRACTOR will be responsible for this interior slab removal. All other areas of slab removal shall be the responsibility of this TRADE CONTRACTOR.

7. This TRADE CONTRACTOR shall be responsible for removing and legally disposing of **ALL** selective demolition material within the Phase C Construction Area of the building including but not limited to all MEP materials (i.e. including but not limited to ductwork, light fixtures, electrical panels, toilet fixtures, conduits, piping, valves, equipment (unit ventilators, fan coil units, RTUs, AHUs, Exhaust Fans, Exhaust Hoods, etc.), etc. scheduled to be removed per the plans and specifications. This TRADE CONTRACTOR shall be responsible for ALL Demolition Keynotes listed on the Demolition sheets.

NOTE: This TRADE CONTRACTOR shall reference the Electrical, Plumbing, Mechanical Demolition Sheets to verify the extents of this work. Any MEP demolition outside the Architectural Demolition Area shall be included in this TRADE CONTRACTOR's scope of work.

NOTE: The safe disconnection of the MEP items in the scope areas shown in the MEP drawings will be by the MEP TRADE CONTRACTORs, but the complete removal/disposal of these MEP items to be by this TRADE CONTRACTOR.

NOTE: Demolition keynotes #1 & #6 on MD2.01BC, keynotes #1 & #5 on MD2.02BC, keynotes #1 on MD2.03BC sheets are NOT this responsibility of this TRADE CONTRACTOR. The MECHANICAL TRADE CONTRACTOR shall be responsible for this work.

NOTE: This TRADE CONTRACTOR shall be responsible to temporarily support any piping or components to remain that were supported by any removed ceilings or structures in the remodeled areas.

NOTE: This TRADE CONTRACTOR shall NOT be responsible for the infill and/or patching of openings or adjacent surfaces.

NOTE: The Mechanical Demolition of existing ductwork required for 2nd & 3rd floors of Areas A & B including the vertical risers between floors shall be the responsibility of this TRADE CONTRACTOR.

NOTE: Any mechanical equipment scheduled for REUSE will be removed/relocated by MECHANICAL TRADE CONTRACTOR.

8. This TRADE CONTRACTOR shall be responsible for all the masonry demolition identified on the demolition drawings.

NOTE: This TRADE CONTRACTOR shall NOT be responsible to remove existing outside air louvers at unit ventilators per Mechanical Sheets.

NOTE: This TRADE CONTRACTOR shall not be responsible for new door openings in existing CMU walls. This work shall be responsibility of the Masonry Trade Contractor.

9. This TRADE CONTRACTOR shall be responsible for removing and disposing of ALL doors, frames and hardware (Aluminum, Hollow Metal, Wood, etc.) scheduled to be removed according to the plans and specifications.

Note: All window / aluminum doors in courtyard area will be removed & disposed of by the Abatement Trade Contractor.

10. This TRADE CONTRACTOR shall be responsible for demolition and disposal of existing elevator, including structure and all associated electrical, mechanical, and hydraulics. Reclamation of hydraulic fluid will be by the Elevator Trade Contractor.

11. This TRADE CONTRACTOR shall be responsible for the demolition and/or removal of all ceiling assemblies (i.e. Acoustical tile, spline, drywall, plaster, etc.), window assemblies, flooring (ie. Ceramic, VCT, carpet, wall base including any and all mastic materials) wall openings and modifications, interior and exterior masonry walls, gypsum board walls, transom windows, paneling, lockers, doors, door frames, borrowed lites, toilet partitions, toilet accessories, plumbing fixtures, window shades, casework, and all other work to be removed per the plans and specifications.

NOTE: This TRADE CONTRACTOR shall be responsible for demo/removal of all ceilings identified on AD 3.01, AD 3.02 and AD 3.03 required for Phase C. Note, some of these ceiling areas will not be removed until Summer of 2021.

12. This TRADE CONTRACTOR shall be responsible for protecting all interior items that are not part of its scope; this includes but is not limited to: adjacent materials/items/fixtures/systems and substrates, and existing structural to remain. Any questions or clarifications regarding the extents of the demolition shall be directed to the construction manager prior to the time and date listed in the specification manual.

Note: Temporary walls to isolate building demolition from existing building areas to remain will be installed by the General Trades Contractor, but this TRADE CONTRACTOR is required to coordinate/ensure these temporary walls are in place prior to proceeding with demolition work.

13. This TRADE CONTRACTOR shall request, in advance, any and all disconnections required to be completed “by others” to the CONSTRUCTION MANAGER and necessary so as not to delay the project schedule.

14. This TRADE CONTRACTOR is NOT responsible for MEP disconnects, this will be completed by others and are NOT under this TRADE CONTRACTOR’s scope of work.

15. This Trade Contractor is NOT responsible for any site demolition identified on Civil Demolition Drawings.

16. This TRADE CONTRACTOR is responsible to verify and determine in advance and during demolition whether removal or demolition of any element will result in structural

deficiency, overloading, failure or unplanned collapse, unwarranted triggering of FP systems, alarms, and to detect hazards resulting from demolition related activities.

NOTE: This TRADE CONTRACTOR shall be responsible for removal of all noted partitions, floor and ceiling finishes and must protect all existing structural members to remain.

17. This TRADE CONTRACTOR shall be responsible for temporary shoring and/or bracing identified in the construction documents, or as required by this TRADE CONTRACTOR'S work scope. This includes all delegated design and means & methods associated with this shoring. This TRADE CONTRACTOR shall be responsible for removal of any temporary shoring after all components are structurally tied-in and deemed safe by Construction Manager.

18. This TRADE CONTRACTOR shall be responsible for acquiring all necessary Demolition Permits from AHJ (Authority Having Jurisdiction) i.e. DuPage County prior to beginning any demolition work. If permits are required, this trade contractor shall acquire said permit(s) in a timely manner so as not to hold up any work in accordance with the overall construction schedule included in this specification manual.

19. This TRADE CONTRACTOR to provide sufficient equipment, material, skilled manpower, supervision and/or premium time/shift work (all without additional compensation) as may be required to complete the work of this Trade Contractor in accordance with the overall project schedule.

NOTE: This TRADE CONTRACTOR understands there are areas of this building that will remain occupied and any equipment used indoors that emits toxic fumes/exhaust will need to be approved by the Construction Manager or an alternate fuel/equipment type needs to be provided.

NOTE: This TRADE CONTRACTOR needs to use water or other dust remediating techniques to minimize dust pollution in interior areas. Water connection is available on-site.

NOTE: This TRADE CONTRACTOR understands there will be areas of demolition that may need to run concurrently. Appropriate manpower must be provided to meet the project schedule.

20. This TRADE CONTRACTOR shall leave the site in a safe and orderly manner including barricades and effective deterrents from any and all possible dangers on a daily basis and at the conclusion of this trade contractor's work

ALLOWANCES, BOND, & ALTERNATES

21. This TRADE CONTRACTOR **shall include an allowance of $75,000.00 in their base bid** to account for any unforeseen conditions. Contract amounts will be adjusted by change order for amounts greater or less than the allowance. Allowance to be utilized only at the direction of Construction Manager.

22. This TRADE CONTRACTOR will be required to provide a Performance and Payment Bond for their work in accordance with 002010 of the General Conditions.

23. **Alt. Bid #1 - This TRADE CONTRACTOR shall provide an Alternate Price to remove and legally dispose all window assemblies and aluminum doors in the Commons Courtyard Area that are scheduled for demolition as part of Phase C.**

Initials: _____ / _____

24. **Alt. Bid #2 – This TRADE CONTRACTOR shall provide an alternate price to remove and legally dispose of existing full bed terrazzo flooring in existing corridors to receive porcelain tile, consider 12,000 S.F. of terrazzo for pricing purposes.**

25. **Alt. Bid #3 – This TRADE CONTRACTOR shall provide a deductive alternate price to remove from this TRADE CONTRACTOR's scope of work the demolition of the 4" interior MASONRY wall ALONG WRESTLING ROOM per section 4/AD4.22.**

26. **(Addendum #3) Alt. Bid #4 – This TRADE CONTRACTOR shall provide an alternate price to properly dispose of possible Lead Painted materials to be demolished in compliance with IEPA standards.**

ACCEPTANCE

Accepted as listed above in addition to terms and conditions of the original construction documents on which the bid was based.

Company: Wight Construction Services, Inc.
2500 North Frontage Road
Darien, IL 60561

Signed: _____ _____

Printed Name: _____ _____

Position: _____ _____

Date: _____ _____

END OF SECTION 00300 –Scope

Initials: _____ / _____

BG8 BP98 SCOPE OF WORK FOR METAL FRAMING & GYPSUM BOARD – SOUTH HIGH SCHOOL

Scope – This TRADE CONTRACTOR's scope shall include but not be limited to the scope listed below. Please see entirety of bid documents for all scope requirements.

1. This TRADE CONTRACTOR shall reference ALL General, Civil, Structural, Existing Architectural, Architectural Demolition, Architectural, Mechanical, Mechanical Demolition, Plumbing Demolition, Plumbing, Electrical Demolition, Electrical, and Technology Sheets included in this Bid Group 8 – Part B as they relate to Framing and Gypsum Board. This TRADE CONTRACTOR shall read all Notes and General Notes included in the drawings as they pertain to this scope of work. This TRADE CONTRACTOR shall review the project SCHEDULE included in this project manual and provide sufficient manpower to complete this trade contractor's scope of work within the designated durations provided.

2. This TRADE CONTRACTOR shall be responsible for furnishing and installing all materials, skilled and/or licensed labor, equipment, tools, etc... to complete all aspects of this trade contractor's work including all Cold Formed Metal Framing, Light Gauge Metal Framing, Sheathing and Accessories, Wall/Partition Gypsum Board assemblies, Gypsum Board Ceilings and Soffits, Gypsum Board Shaft Assemblies, All Required Interior/Exterior Partition (Batt) Insulation or Mineral Wool, All Sound Attenuation Blanket, All Wool Firesafing, All Walls/Partitions Gypsum Board Furring, All Types Of Gypsum Board (Abuse Resistant, Moisture Resistant, Tile Backer Boards, Glass-Mat Gypsum Board, Gypsum Board With Factory-Applied Air/Water Membrane, Etc.), Fire Treated Plywood on Metal Framing, Caulking, Acoustical Sealants, Drywall Finishing, All Reveals, Aluminum Trims, etc. All work shall be completed according to the specifications and as shown on the construction documents.

   Also including the Furnish and Install of:
   - Cold Formed Metal Framing per Specification Section 054000
   - Sheathing per Specification Section 061600
   - Thermal Insulation per Specification Section 072100
   - Joint Sealants per Specification Section 079200
   - Acoustical Joint Sealant per Specification Section 079219
   - Gypsum Board Assemblies per Specification Section 092116
   - Access Doors and Frames per Specification Section 083113

3. This Trade Contractor shall furnish and install (10) access panels. Location of access panels will be decided and coordinated by the Construction Manager.

4. This TRADE CONTRACTOR shall be responsible for all the interior and exterior Cold-Formed Framing and Exterior Sheathing with pre-applied air & water membrane This TRADE CONTRACTOR shall be responsible for the delegated structural engineering of the Cold Formed Metal Framing by a licensed Illinois Structural Engineer per the contract documents. Any coordination required with the CURTAINWALL CONTRACTOR and the METAL PANEL CONTRACTOR shall be responsibility of this TRADE CONTRACTOR.

   NOTE: In areas to receive Exterior Metal Wall Panels (E-WP-01 and E-WP-02), this TRADE CONTRACTOR's scope of work stops at the Exterior Sheathing with pre-applied air & water membrane or the plywood sheathing. The metal panel system (WP-01 and WP-02) will be provided by the Metal Panel Contractor, including any insulation and spray-applied air & water membrane required between this TRADE CONTRACTOR's work and the metal panel system.

   NOTE: This TRADE CONTRACTOR will be required to closely coordinate with the Metal Panel CONTRACTOR, who will be providing the Metal Panel Systems (WP-01 and WP-02). This TRADE

CONTRACTOR might be required to hold dimensions for the fabrication of the metal panels prior to this TRADE CONTRACTOR's framing work is complete.

NOTE: This TRADE CONTRACTOR shall include the CFMF required to support the metal deck with light-weight concrete for the horizontal duct shafts in the auditorium. Refer to S2.1C-F and architectural drawings for additional information.

5. This Trade Contractor shall be responsible for the fire-treated plywood and CFMF "lid" above the new College and Career area per 4/A5.21.

NOTE: This TRADE CONTRACTOR is not responsible for the Wood Veneer Panels per 1/A9.35. These are responsibility of the Millwork Trade Contractor.

6. This TRADE CONTRACTOR shall be responsible for furnishing and installing all Cold Formed Partition Walls and Fire Rated Cold Formed Partition Walls per The Contract Documents and as detailed on A8.00. This scope of work shall include but is not limited to, the Cold-Formed Metal Framing required for the Horizontal Duct Shafts in the Auditorium (see S2.1C-F for more information), the CFMF for Seating Platforms in the Auditorium, the CFMF walls, joists and plywood required for the College and Career curved addition (refer to 4/A5.12).

NOTE: This Trade Contractor is also responsible for furnishing and installing any Fire Rated Deflection Track and Shaft Wall Assemblies as noted.

NOTE: Any in-wall blocking shall be furnished and installed by the GENERAL CARPENTRY TRADE CONTRACTOR. This TRADE CONTRACTOR shall be responsible for coordinating with the GENERAL CARPENTRY CONTRACTOR to ensure that all in-wall blocking is installed prior to installation of gypsum board.

NOTE: This TRADE CONTRACTOR shall be responsible for the Perimeter Fire Containment System within metal framing partitions per the bid documents.

NOTE: This TRADE CONTRACTOR shall NOT be responsible for all GENERAL NOTES on A8.00. Furnishing and installing corner guards per Partition Note 1 on A8.00.

7. This Trade Contractor shall be responsible for the framing of all Roof Parapet Walls. This TRADE CONTRACTOR's scope of work stops at the Exterior Sheathing. Any roofing insulation, roofing membrane and coverboard shall be by the Roofing Contractor.

NOTE: All Roof Blocking shall be responsibility of the GENERAL CARPENTRY TRADE CONTRACTOR and not be included in this TRADE CONTRACTOR's scope of work.

8. This TRADE CONTRACTOR shall be responsible for bracing or kickers required for CFMF and light gauge metal framing walls as indicated in the contract documents.

9. All acoustical, fiberglass, rigid and mineral wool insulation shall be the responsibility of this TRADE CONTRACTOR unless noted otherwise in the bid documents.

NOTE: Any masonry cavity wall insulation is the responsibility of the MASONRY TRADE CONTRACTOR. Roof Insulation is by ROOFING CONTRACTOR. Below grade insulation is by the CONCRETE CONTRACTOR.

NOTE: This TRADE CONTRACTOR shall be responsible for furnishing and installing all components of Top of Wall details on drawings A8.00 and A8.01, including but not limited to mineral wool,

deflection track, acoustical joint sealant spray, etc. Refer to Partition Types on drawings A8.00 and A8.01 for further details and instructions.

NOTE: Mineral Wool at the head of ALL CMU walls is NOT by this TRADE CONTRACTOR, MASONRY CONTRACTOR is responsible for this Mineral Wool Fire Safing required for masonry walls.

10. This TRADE CONTRACTOR shall be responsible for installing all Hollow Metal Frames furnished by others (including frames for doors and windows) to be installed at metal framing/GB walls. This TRADE CONTRACTOR shall be responsible for receiving and unloading the door frames (only frames) onsite. This TRADE CONTRACTOR shall also be responsible for furnishing and installing insulation at all hollow metal frames per specification for Hollow Metal Frames.

NOTE: This TRADE CONTRACTOR shall install insulation inside the frames prior to installation.

11. This TRADE CONTRACTOR shall be responsible for furnishing and installing all Interior Aluminum Frames per specification section 081216 and bid documents. The partitions shall be shop painted with a baked enamel or powder coat finish. The CURTAINWALL / GLAZING CONTRACTOR shall be responsible for glazing these partitions. **(ADDENDUM 3)**

12. This TRADE CONTRACTOR shall be responsible for furnishing and installing all corner guards as specified in the A10 series drawings and specification section 102613.13 Corner Guards.

13. This TRADE CONTRACTOR shall be responsible for furnishing and installing all gypsum board ceilings and soffits including types GYP-1, GYP-3, GYP-4, GYP-5 as shown on the Reflected Ceiling Plans. This TRADE CONTRACTOR shall include all the accessories required for a complete installation per contract documents, including any trims, shadow reveals, molding, etc.

NOTE: This TRADE CONTRACTOR shall be responsible for the Acoustic Barrier Ceiling with spring isolation hangers per detail 6/A3.21 and as shown in details in the RCP plans and details, including the Radio Room 1-528 per detail 7/A3.21 and the Studio Theatre 1-604.

NOTE: This TRADE CONTRACTOR shall include all GB round soffits in the 1st floor Cafeteria & Learning Commons areas.

NOTE: This TRADE CONTRACTOR shall refer to Electrical Drawings and account for any taping of light fixtures housings or trims.

NOTE: All Axiom Trims required for transitions between Gypsum Board Ceilings and Acoustical Tile Ceilings shall be provided by the ACT Contractor and installed by this trade contractor.

14. This TRADE CONTRACTOR shall be responsible for furnishing and installing the GB Ceiling Reflectors as shown in the Reflected Ceiling Plans. It is the intent that this TRADE CONTRACTOR fabricates the majority of these Reflectors in their shop and delivers them to the site ready for installation.

15. This TRADE CONTRACTOR shall be responsible for providing any reveals in gypsum board walls or ceilings as shown in the construction documents. This TRADE CONTRACTOR shall get the reveals layout approved by the CM prior to installation.

16. This TRADE CONTRACTOR shall be responsible for providing any control joints in gypsum board assemblies necessary to prevent cracks and shown on bid documents. All control joints shall be coordinated to be installed at corners of windows or door frames where possible.

17. This TRADE CONTRACTOR shall be responsible for furnishing and Installing all full height, full width interior and/or exterior Carpentry related sealant and caulking including but not necessarily limited to sealant/caulking of joints as part of this trade contractors work where indicated and/or required, including where the work of this TRADE CONTRACTOR intersects dissimilar materials. Sealant and caulking shall comply with the fire rating requirements of the wall where installed.

18. This TRADE CONTRACTOR shall be responsible for wall layout prior to mobilization and installation of this scope of work for use by OTHERS. This may include installing the top track only for coordination with other trades and should figure multiple mobilizations to complete this scope of work per the Project Schedule and at the direction of the CONSTRUCTION MANAGER.

19. This TRADE CONTRACTOR shall ONLY use tools with HE vacuums attachments for sanding GB walls to reduce to amount of dust generated during this work.

ALLOWANCES, BOND, & ALTERNATES

1. This TRADE CONTRACTOR **shall include an allowance of $50,000.00 in their base bid** to account for any unforeseen conditions. Contract amounts will be adjusted by change order for amounts greater or less than the allowance. Allowance to be utilized only at the direction of Construction Manager.

2. This TRADE CONTRACTOR will be required to provide a Performance and Payment Bond for their work in accordance with 002010 of the General Conditions.

3. Alternate 8.1: This TRADE CONTRACTOR shall provide a deductive price to remove all cold-formed metal framing required at the skylight openings.

4. Alternate 2: This TRADE CONTRACTOR shall provide a price for providing a Level 5 finish on GB walls to receive custom vinyl graphics per the bid documents.

ACCEPTANCE

Initials: _____ / _____

Accepted as listed above in addition to terms and conditions of the original construction documents on which the bid was based.

Company: Wight Construction Services, Inc.
2500 North Frontage Road
Darien, IL 60561

Signed: _____ _____

Printed Name: _____ _____

Position: _____ _____

Date: _____ _____

END OF SECTION 00300 –Scope

BG8 BP99 SCOPE OF WORK FOR GENERAL TRADES – SOUTH HIGH SCHOOL

Scope – This TRADE CONTRACTOR's scope shall include but not be limited to the scope listed below. Please see entirety of bid documents for all scope requirements.

1. This TRADE CONTRACTOR shall reference ALL General, Existing, Architectural Demolition, Architectural, Structural, Mechanical, Plumbing, Electrical, Audiovisual, Security, Food Service Equipment, Theatre Systems, Performance Audiovisual Sheets included in this Bid Group 8 as they relate to **GENERAL TRADES**. This TRADE CONTRACTOR shall read all Notes and General Notes included in the drawings as they pertain to this scope of work. This TRADE CONTRACTOR shall review the project SCHEDULE included in this project manual and provide sufficient manpower to complete this TRADE CONTRACTOR's scope of work within the designated durations provided.

   NOTE: This TRADE CONTRACTOR'S scope of work shall be limited to those areas as indicated by Phase C (South) on plans. Any work shown outside of this scope area shall not be included in this TRADE CONTRACTOR'S scope of work U.O.N in this document. This is Phase 3 of 3 phases of the Master Facility Plan, thus some drawings may include areas of work not to be included in this scope of work.

   NOTE: This TRADE CONTRACTOR shall review all exhibits included in the contract documents including the Phasing Plan, Sequencing Plan, Site Logistics Plan, etc.

2. This TRADE CONTRACTOR shall be responsible for furnishing and installing all materials, skilled and/or licensed labor, equipment, tools, etc. to complete all aspects of this TRADE CONTRACTOR's work including Rough Carpentry, Finish Carpentry, Joint Sealants, Caulking, Penetration Firestopping, Fire-Resistive Joint Systems, all required plywood backing (structural or non-structural) including any plywood for mounting of electrical panels and phone systems, wood plates (including pressure treated), all blocking (including any required for roof, wall, windows, storefront, curtainwall, roller shades, casework, toilet accessories, visual displays, relocated alumni display wall, etc.), Fire Protection Specialties, Window Roller Shades, Toilet Accessories, Toilet Partitions, Overhead Coiling Doors and Grilles, Sectional Doors, Marker Board Folding Partitions, Interior Aluminum Frames, Folding Glass Partitions, Wall & Ceiling Expansion Joint Covers, etc. All work shall be completed according to the specifications and as shown on the construction documents.

   NOTE: Cold formed metal framing, light gauge metal framing, gypsum board sheathing and accessories, gypsum board reveals, casework & countertops are by the Metal Framing and Drywall Contractor and Millwork Contractor.

   NOTE: This TRADE CONTRACTOR shall **NOT** be responsible for any insulation U.N.O. in this document. Acoustical, fiberglass, rigid and batt insulation is the responsibility of the FRAMING AND DRYWALL TRADE CONTRACTOR. Any masonry cavity wall insulation is the responsibility of the MASONRY TRADE CONTRACTOR. Roof Insulation is by ROOFING CONTRACTOR. Below grade insulation is by the CONCRETE CONTRACTOR.

3. This TRADE CONTRACTOR shall be responsible for all penetration fire-stopping, acoustical penetration details (AC series drawings) and labeling of penetrations for all trades and penetrations. This work will be done as part of a contract allowance. See Allowances section in this document for more information. This TRADE CONTRACTOR shall be responsible for all misc.

caulking between dissimilar materials and otherwise not noted in the construction documents, required in this project and shall be taken out of the Joint Sealants Allowance. Masonry Joints sealants are by the MASONRY CONTRACTOR. Millwork related sealants are by the MILLWORK CONTRACTOR AND DRYWALL related sealants are by the FRAMING & DRYWALL CONTRACTOR.

4. This TRADE CONTRACTOR is to furnish and install any blocking and/or backing mounted to walls or installed in stud walls needed to support casework, shelving, storefront, curtainwall system, windows, window sills, metal panels, IDF racks, AV racks, countertops, etc. as indicated on plans. Any blocking not indicated on plans required for support of casework/millwork, visual displays, roller shades, etc., is to be included in this TRADE CONTRACTOR's cost.

NOTE: Refer to all MEP/AV/LV/PA drawings for wall-mounted equipment.

NOTE: This TRADE CONTRACTOR shall be responsible for furnishing and installing wall backing for the relocated alumni wall, see location on A2.11A.

NOTE: Any blocking required for the installation of the stage flooring shall NOT be responsibility of this TRADE CONTRACTOR and shall be by the Flooring Contractor.

5. This TRADE CONTRACTOR shall be responsible for furnishing and installing ALL Wood Roof Blocking as shown and as necessary per the construction documents, including any wood blocking as shown on all details in A5 Series Drawings.

6. This TRADE CONTRACTOR shall be responsible for furnishing and installing all fire-rated and non-fire rated expansion joint covers required at interior and exterior walls, soffits, ceilings, window sills, etc. as specified in contract documents, including CJ-1, CJ-2, WJ-1, WJ-2, WJ-3. All floor expansion joint covers shall be furnished and installed by the FLOORING CONTRACTOR. All roof expansion joints shall be by the ROOFING CONTRACTOR.

7. This TRADE CONTRACTOR shall be responsible for the INSTALL ONLY of all Hollow Metal Doors, Flush Wood Doors, and associated Door Hardware as shown in the Contract Documents. This Trade Contractor shall be responsible for furnishing and installing all ancillary hardware and components necessary for a complete install including but not necessarily limited to, shims, Screws, Bolts, Sealant (interior and exterior), etc. This TRADE CONTRACTOR shall be responsible for unloading and receiving all Hollow Metal & Wood Doors, Hollow Metal Frames and Hardware furnished by the DOORS & HARDWARE CONTRACTOR.

NOTE: This TRADE CONTRACTOR shall be responsible to receive shipment and inventory of all doors, hollow metal door & frames, and door hardware.

NOTE: The installation of hollow metal frames in drywall partitions will be by the Metal Framing and Drywall Contractor. The installation of hollow metal frames in the masonry partitions shall be installed by the Masonry Trade Contractor.

NOTE: This Trade Contractor is NOT responsible for installing any hardware associated with the Aluminum Entrance Doors.

8. This TRADE CONTRACTOR shall be responsible for furnishing and installing Fire Extinguisher Cabinets and Fire Extinguishers, Phenolic-Core Toilet Compartments, Toilet Accessories, Corner Guards, Markerboard Units, Recessed Book Drops, Cable Hooks as shown in the construction documents.

NOTE: This TRADE CONTRACTOR shall be responsible for furnishing and installing all toilet accessories per the bid documents, including all grab bars, medicine cabinets, standard mirrors. The frameless custom mirrors designated as MR-3 is not responsibility of this TRADE CONTRACTOR and shall be installed by the Glazing Contractor.

NOTE: This TRADE CONTRACTOR shall install owner-furnished Soap Dispensers (consider (1) dispenser per individual sink if not shown in construction documents), Paper Towel Dispensers, and Toilet Paper Dispensers.

NOTE: This TRADE CONTRACTOR shall be responsible for coordinating in a timely manner with FRAMING AND DRYWALL CONTRACTOR and MEP CONTRACTORS and locating any items that shall be installed recessed in walls to avoid any conflicts.

9. This TRADE CONTRACTOR shall furnish and install the Overhead Coiling Doors, Overhead Coiling Grilles, and Sectional Doors per the bid documents, refer to specification sections 083323, 083326 and 083613.1.

NOTE: This TRADE CONTRACTOR shall be responsible for coordinating with METAL FRAMING AND DRYWALL CONTRACTOR for opening sizes and recessed rails installation.

NOTE: This TRADE CONTRACTOR shall be responsible for coordinating any power and low voltage rough-in requirements with the ELECTRICAL CONTRACTOR. This Trade Contractor shall be responsible for wiring for controls and programming.

10. This TRADE CONTRACTOR shall furnish and install all FOLDING GLASS PANEL PARTITIONS per specification section 102239.13 and the MARKERBOARD FOLDING PARTITION as shown in the contract documents. This TRADE CONTRACTOR shall be responsible for coordinating the bolting pattern required for the installation of the folding panel partitions ahead of time to avoid any field-drilling to the steel beams.

11. ~~This TRADE CONTRACTOR shall be responsible for furnishing and installing all Interior Aluminum Frames per specification section 081216 and bid documents. The partitions shall be shop painted with a baked enamel or powder coat finish.~~ **(ADDENDUM 3)** This TRADE CONTRACTOR shall **NOT** be responsible for furnishing and installing all Interior Aluminum Frames per specification section 081216 and bid documents. The aluminum frames shall be responsibility of the metal framing and drywall contractor. The GLAZING CONTRACTOR shall be responsible for glazing these partitions.

12. This TRADE CONTRACTOR shall be responsible for furnishing and installing a temporary wood deck to infill skylight opening. The temp roof over this wood deck will be provided by the ROOFING CONTRACTOR.

13. This TRADE CONTRACTOR shall be responsible for all the pass-thru details per Sheet A7.28 including all covers, fire pillows, chains, pipe plugs, compression end caps, rain hood, exterior access door, watertight seals, threaded end caps, aircraft cable, pull rings, etc. Any coring and steel pipes required shall be included as part of this TRADE CONTRACTOR's scope of work.

14. This TRADE CONTRACTOR shall be responsible for furnishing and installing the firesafing required between existing concrete slabs and new concrete slabs as shown in construction documents (for example detail 3/A5.14).

15. This TRADE CONTRACTOR shall be responsible for furnishing and Installing all full-height, full width interior and/or exterior Carpentry related sealant and caulking including but not

necessarily limited to sealant/caulking of joints as part of this TRADE CONTRACTOR's work where indicated and/or required, including where the work of this TRADE CONTRACTOR intersects dissimilar materials. Sealant and caulking shall comply with the fire rating requirements of the wall where installed.

Note: For anything not included in the contract documents or otherwise specified in this scope, the joint sealants allowance will be utilized.

16. This TRADE CONTRACTOR shall be responsible for temporary protection as shown in Exhibit E Temporary Protection including keynotes 1, 1A, 2, 3, 4, and 5. This TRADE CONTRACTOR shall be responsible for installing, removing and disposing of all items included as part of this scope item.

17. This TRADE CONTRACTOR shall be responsible for providing safety rails and top landing platforms for (2) elevator shafts as required in items 2.2 and 3.4 in exhibit C Customer Site Preparation Support Guide by Schindler.

ALLOWANCES, BOND, & ALTERNATES

18. This TRADE CONTRACTOR **shall include an allowance of $150,000 in their base bid** to account for any Unforeseen Conditions, Additional Temporary / Safety Enclosures, Winter Conditions and General Labor. Contract amounts will be adjusted by change order for amounts greater or less than the allowance. Allowance to be utilized only at the direction of Construction Manager.

19. **This TRADE CONTRACTOR shall include an allowance of $35,000.00 to be included in the base bid for all misc. Joint Sealants, penetration fire-stopping, fire-resistive joint systems, Fire-resistant assembly identification, acoustical penetration, and joint sealants. Contract amounts will be adjusted by change order for amounts greater or less than the allowance. Allowance to be utilized only at the direction of Construction Manager.**

20. **Alternate 8.1:** This TRADE CONTRACTOR shall provide a deductive alternate for the temp. plywood deck infill at skylights specified by item 12 in this scope document.

21. **Alternate 2:** This TRADE CONTRACTOR shall provide an alternate price for the temporary protection items per keynotes 6 and 7 as shown in Exhibit E Temporary Protection. This alternate shall include installation, removal and disposal.

22. This TRADE CONTRACTOR will be required to provide a Performance and Payment Bond for their work in accordance with 002010 of the General Conditions.

ACCEPTANCE

Accepted as listed above in addition to terms and conditions of the original construction documents on which the bid was based.

Company: Wight Construction Services, Inc.
2500 North Frontage Road
Darien, IL 60561

Signed: _____ _____

Printed Name: _____ _____

Initials: _____ / _____

Position: _____ _____

Date: _____ _____

END OF SECTION 00300 –Scope

BID DATE: December 19th, 2019 at 1:00 p.m. (CST)
(as date/time stamped by District 99's Receptionist)

BID TO: Community High School District 99
Administrative Center
6301 Springside Avenue
Downers Grove, IL 60516

RECEIVED BY:

BID FROM: _____

_____

_____

BID FOR: ***Bid Group 8 Bid Package #80-Selective Demolition & Partial Wrecking***

South High School
1436 Norfolk Street
Downers Grove, IL 60516

It is required to have one original and one copy of your bid form.

THE UNDERSIGNED:

Acknowledges receipt of:

Plans and specifications for the work indicated above.

Addenda: No._____ dated _____

No._____ dated _____

No._____ dated _____

No._____ dated _____

Having examined the site of the work, and having familiarized himself or herself with local conditions affecting the cost of the work and with all requirements of the bidding documents including Instructions to Bidders, drawings, specifications and duly issued addenda as prepared by the architect, Wight & Company, hereby agrees to perform all work and furnish all labor, material and equipment specifically required of him by the bidding documents and such additional work as may be included as related requirements in other divisions or sections of the specifications, exclusive of alternate bids.

Agrees:

To furnish and install the described material and/or services for stated lump sum price.

To hold this bid open until **90** calendar days after bid opening date.
To accept the provisions of the General Provisions (Project Manual Division 0 – Bidding & Contracting Requirements Section 00201) and disposition of bid security.

To enter into and execute a contract with the Owner, if awarded on the basis of this bid, and in connection therewith to:

1. Furnish all bonds and insurance required by the bidding documents.
2. Accomplish the work in accordance with the contract.
3. Complete the work within the contract time herein specified.

Completion Time:

The undersigned agrees to begin construction immediately, or as directed by the Construction Manager, upon notice of contract award and to perform the following components of the work in accordance with the Construction Manager's Construction. This schedule is bound in the Project Manual. See attached scope of work in section 0300.

SCOPE OF WORK:

The work in this agreement (without additional compensation) shall include, but shall not necessarily be limited to, all skilled labor, supervision, premium time, materials, tools, equipment, plant, supplies, samples, shop drawings, design/engineering drawings, layout, transportation, supervision, contributions, insurance, taxes (if applicable), compliance with all agencies (City / Village, County, State, Federal and/or any other jurisdictional agency, as may be required) and/or all services and facilities necessary and/or required for the performance of all Work shown, detailed, and/or implied by the following documents and as defined herein.

It is understood that this Trade Contractor shall perform the Work for a complete and operational system as indicated or implied in all Contract Documents. It is recognized and understood that the documents upon which the bid is based are at a conceptual phase and this Contractor who has certain skills and judgments based upon his knowledge of techniques, procedures, systems, general state of the art of his specialty is expected to include in the scope of work, all items required in order to carry out a complete and functional system whether or not shown or described in the contract documents. This contract will be awarded on the basis of such documents with the understanding that this contractor is to furnish and install all items required for the proper completion of this wok without adjustment to this contract price. No extra payments shall be made of claims entertained as a result of such items, unless it can be clearly demonstrated to be added scope to the contract and beyond the original intent of the documents.

Contractor to provide all Trade Contract work referenced in:

1. Any sheet of this bid group package including (reference Division 0 – Bidding and Contract Requirements, Section 00200 – Notice to Bidders).
2. Specification 00300 Bid Packages Scope Document.

WORK BASE BID: For providing all work including all allowances as required for the completion of the construction of the base bid project as shown on the drawings and specifications and NOT including alternate bids and/or contractor's proposed alternates and substitutes.

BASE BID

TOTAL BASE BID AMOUNT SOUTH HIGH SCHOOL MASTER FACILITY PLAN

_____Dollars ($)

1. This TRADE CONTRACTOR **shall include an allowance of $75,000.00 in their base bid** to account for any unforeseen conditions. Contract amounts will be adjusted by change order for amounts greater or less than the allowance. Allowance to be utilized only at the direction of Construction Manager.

2. **Alt. Bid #1 - This TRADE CONTRACTOR shall provide an Alternate Price to remove and legally dispose all window assemblies and aluminum doors in the Commons Courtyard Area that are scheduled for demolition as part of Phase C.**

   _____**Dollars** ($_____)

3. **Alt. Bid #2 – This TRADE CONTRACTOR shall provide an alternate price to remove and legally dispose of existing full bed terrazzo flooring in existing corridors to receive porcelain tile, consider 12,000 S.F. of terrazzo for pricing purposes.**

   _____**Dollars** ($_____)

4. **Alt. Bid #3 – This TRADE CONTRACTOR shall provide a deductive alternate price to remove from this TRADE CONTRACTOR's scope of work the demolition of the 4" interior MASONRY wall ALONG WRESTLING ROOM per section 4/AD4.22.**

   _____**Dollars** ($_____)

5. **(Addendum #3) Alt. Bid #4 – This TRADE CONTRACTOR shall provide an alternate price to properly dispose of possible Lead Painted materials to be demolished in compliance with IEPA standards.**

   _____**Dollars** ($_____)

BONDS:

This TRADE CONTRACTOR will be required to provide a Performance and Payment Bond for their work in accordance with 00201 of the General Conditions.

Award Basis:

The project will be awarded based upon the attached Evaluation Criteria, Section 301a. Owner and Construction Manager alternate's may be considered to find the most qualified bidder if the result of combining the base bid and the selected alternate(s) is the most qualified bid, and is to the benefit of the owner.

Each of the following amounts for alternate construction includes the entire cost of such construction, except as otherwise noted. Acceptance of any or all of the alternates for inclusion in the contract is the sole prerogative of the owner.

All additional costs due to the alternates are included in the amount to be added to the base bid, so that no additional costs will be borne by the owner due to acceptance of alternates. This alternate price is not to be included in the base bid price.

Owner Requested Alternates:

Each of the following amounts for alternate construction includes the entire cost of such construction, except as otherwise noted. Acceptance of any or all of the alternates for inclusion in the contract is the sole prerogative of the owner.

All additional costs due to the alternates are included in the amount to be added to the base bid, so that no additional costs will be borne by the owner due to acceptance of alternates.

Proposed Alternates: (Contractors Proposed Alternates)

Item Specified	Proposed Alternate	Change in Bid Price
1.		
2.		
3.		

Owner Requested Unit Prices/Allowances (as applicable to this Trade Contractor's scope of work) (additive or deductive).

This trade contractor includes dumpsters for all refuse caused by this trade contractor's work in the amount of _____ Dollars ($)
Note: trade contractors are to include in their bid form submittal the quantity of dumpsters required to complete their work and the cost associated with same. Dumpster costs will be subtracted by change order. Dumpsters will be procured and managed by Construction Manager. Note: Dumpster use in excess of that proposed by this Trade Contractor will be adjusted by back charge.

Owner Requested Scheduling Information:

Note: The work of this Trade Contractor is to be completed in accordance with the overall project schedule as identified elsewhere in this project manual and/or as subsequently directed by Construction Manager. This Trade Contractor shall submit a proposed submittals list/schedule/material log within five (5) calendar days of Notice To Proceed.

1. Shop drawings / Submittal for this trade contractor will be submitted within 10 calendar days of receipt of notice to proceed.

Bid Acceptance:

If written notice of the acceptance of this bid is mailed, telegraphed or delivered to the undersigned within the time noted herein, after the date of opening of bids or at any time thereafter before this bid is withdrawn, the undersigned agrees that he will execute a construction contract in accordance with the bids as accepted.

The Owner reserves the right to award the contract to its best interests, review and accept any and all value engineering alternatives, negotiate with the lowest responsible bidder, to reject any or all bids, to waive any informalities in bidding and to hold all bids for the bid guarantee period. The Owner reserves the right to award separate contracts for any of the items of work bid herein.

Bid Deposit:

The undersigned furnishes herewith, as required in the Instructions to Bidders, a bid deposit in the amount of ten percent (10%) of the amount bid in the form of Cashier's Check, or Certified Check, made payable to the Owner or Bid Bond, naming the Owner as obligee. (Bidder to check form of deposit furnished.)

It is understood and agreed that should the undersigned fail to enter into a contract with the Owner or furnish acceptable contract security within the time and in the manner herein provided, the bid deposit shall be retained by the Owner as liquidated damages and not as a forfeiture. As it is impossible to determine precisely an exact amount of damages the Owner will sustain, it is agreed that the bid deposit is a fair and equitable estimate of such damages.

REPRESENTATIONS AND CERTIFICATIONS:

The bidder makes the following representations and certifications as part of his bid on the project herein identified in the Bid Form. In the case of a joint venture bid, each party represents and certifies as to his own organization.
AVAILABILITY. The number and amount of contracts and awards pending which I am and/or will be obligated to perform, now and during the course of the project, will not interfere with or hinder the timely prosecution of my work.

SURETY. I have notified a Surety Company that I am submitting a bid for work to be performed on the project. The Surety Company has agreed to issue a performance and labor and material payment bond for my work, if my bid is accepted and the contract awarded to me.

INDEPENDENT PRICE DETERMINATION. The contract sum in this bid has been arrived at independently, without consultation, communication or agreement for the purpose of restricting competition.

PREVAILING WAGE. The contractor and each subcontractor shall pay not less than the general prevailing rate of hourly wages for work of a similar character in the locality in which the work is performed and not less than general prevailing rate of hourly wages for legal holidays and overtime work in the performance of work under this contract, as established by the Illinois Department of Labor, pursuant to an act of the General Assembly of the State of Illinois approved June 26, 1941 as amended according to Section 820 ILCS 130/1.

Pursuant to Section 820 ILCS 130/5, the contractor and each subcontractor shall keep an accurate record showing the names and occupation of all laborers, workers and mechanics employed by them, and also showing the actual hourly wages paid to each such individual, which record shall be open at all reasonable hours to inspection by the Owner, its officers and agents, and to agents of the Illinois Department of Labor.

The contractor and each subcontractor hereby agree, jointly and severally, to defend, indemnify and hold harmless the Owner from any and all claims, demands, liens or suits of any kind or nature whatsoever (including suits for injunctive relief) by the Illinois Department of Labor under the Illinois Prevailing Wage Act, Section 820 ILCS 130/1., or by any laborer, worker or mechanic employed by the contractor or the subcontractor who alleges that he has been paid for his services in a sum less than prevailing wage rates required by Illinois law. The Owner agrees to notify the contractor or subcontractor of the pendency of any such claim, demand, lien or suit.

By submitting a bid, each bidder agrees to waive any claim it has or may have against the Owner, the Architect, Engineer, Construction Manager and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any bid; waiver of any requirements under the Bid Documents; or the Contract Document; acceptance or rejection of any bids; and award of the Contract.

Signature:

Respectfully submitted this day , 2019

Type of Firm (Bidder to indicate)

Individual

Partnership

Corporation

Joint Venture

Other

(Firm Name)

(Address)

(C O R P O R A T E S E A L)

(Bidder's Signature)

(Telephone Number) (FAX)

(Title)

(E-mail Address)

Subscribed and sworn to me
this day of , 2019

NOTE: All pages of this bid form must be returned with your proposal. Failure to do so shall disqualify your bid.

CERTIFICATE OF BIDDER ELIGIBILITY

720 ILCS 5/33E-11 REQUIRES THAT ALL CONTRACTORS BIDDING FOR PUBLIC AGENCIES IN THE State of Illinois certify that they are not barred from bidding on public contracts for bid rigging or bid rotation.

The following certification must be signed and submitted with bidder's bid proposal. FAILURE TO DO SO MAY RESULT IN DISQUALIFICATION OF THE BIDDER.

_____, as part of its bid for the _____work for Community High School District 99, Downers Grove, Illinois, DuPage County, Illinois certified that said contractor is not barred from bidding on the aforementioned contract as a result of violation of either 720 ILCS 5/33E-3 or 720 ILCS 5/33-E4.

Firm:_____

By:_____
(Signature)

_____
(Printed Name & Title)

SUBSCRIBED AND SWORN TO before me

This _____ day of _____, 2019

_____.
NOTARY PUBLIC

CRIMINAL CODE CERTIFICATION
AS REQUIRED BY:
STATE OF ILLINOIS CRIMINAL CODE OF 2012, 720 ILCS 5/33E-11

,

I, _____the individual whose signature appears below on this bid/contract for_____hereby certify that the bidding party/contracting party is not barred from bidding on the contract as a result of a violation of either Section 33E-3 or Section 33E-4 of 720 ILCS 5/33E-3 or 5/33E-4 of the Illinois Compiled Statutes, as amended.

By: _____
Authorized Agent of Contractor (name and title)

SUBSCRIBED AND SWORN to before me
this _____ day _____, 20__.

_____
Notary Public

EQUAL EMPLOYMENT OPPORTUNITY

Section I. This EQUAL EMPLOYMENT OPPORTUNITY CLAUSE is required by the Illinois Human Rights Act and the Rules and Regulations of the Illinois Department of Human Rights published at 44 Illinois Administrative Code Section 750, *et seq.*

Section II. In the event of the Contractor's noncompliance with any provision of this Equal Employment Opportunity Clause, the Illinois Human Rights Act, or the Rules and Regulations of the Department of Human Rights (hereinafter referred to as the Department) the Contractor may be declared ineligible for future contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations, and this Contract may be canceled or voided in whole or in part, and other sanctions or penalties may be imposed or remedies involved as provided by statute or regulation.

During the performance of this Agreement, the Contractor agrees:

A. That it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, national origin or ancestry, citizenship status, age, physical or mental disability unrelated to ability, military status or an unfavorable discharge from military service; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.

B. That, if it hires additional employees in order to perform this Contract, or any portion hereof, it will determine the availability (in accordance with the Department's Rules and Regulations) of minorities and women in the area(s) from which it may reasonably recruit and it will hire for each job classification for which employees are hired in such a way that minorities and women are not underutilized.

C. That, in all solicitations or advertisements for employees placed by it or on its behalf, it will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, sexual orientation, marital status, national origin or ancestry, citizenship status, age, or physical or mental handicap unrelated to ability, military status or an unfavorable discharge from military service.

D. That it will send to each labor organization or representative of workers with which it has or is bound by a collective bargaining or other agreement or understanding, a notice advising such labor organization or representative of the Vendor's obligations under the Illinois Human Rights Act and Department's Rules and Regulations. If any labor organization or representative fails or refuses to cooperate with the Contractor in its efforts to comply with the Act and Rules and Regulations, the Contractor will promptly notify the Department and the contracting agency and will recruit employees from other sources when necessary to fulfill its obligations under the Contract.

E. That it will submit reports as required by the Department's Rules and Regulations, furnish all relevant information as may from time to time be requested by the Department or the contracting agency, and in all respects comply with the Illinois Human Rights Act and Department's Rules and Regulations.

F. That it will permit access to all relevant books, records, accounts and work sites by personnel of the contracting agency and Department for purposes of investigation to ascertain compliance with the Illinois Human Rights Act and Department's Rules and Regulations.

G. That it will include verbatim or by reference the provisions of this Equal Employment Opportunity Clause in every subcontract it awards under which any portion of this Contract obligations are undertaken or assumed, so that such provisions will be binding upon such subcontractor. In the same manner as the other provisions of this Agreement, the Contractor will be liable for compliance with applicable provisions of this clause by such subcontractors; and further it will promptly notify the contracting agency and the Department in the event any subcontractor fails or refuses to comply therewith. In addition, the Contractor will not utilize any subcontractor declared by the Illinois Human Rights Department to be ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations.

ACKNOWLEDGED AND AGREED TO:

By: _____
Authorized Agent of Contractor (name and title)

DATE: _____

SEXUAL HARASSMENT POLICY

_____, having submitted a bid for _____ (Name of Contractor) _____ to Community High School District No. 00, hereby certifies that said contractor has a written sexual harassment policy in place in full compliance with 775 ILCS 5/2105 (A) (4).

By: _____
Authorized Agent of Contractor (name and title)

SUBSCRIBED AND SWORN to before me
this _____ day _____, 20___.

_____
Notary Public

TAX CERTIFICATION

I, _____, having been first duly sworn depose and state as follows:

I, _____, am the duly authorized agent for _____, which has submitted a proposal to Community High School District No. 99 for _____ _____ _____ and I hereby certify that _____ is not delinquent in the payment of any tax administered by the Illinois Department of Revenue, or if it is:

a. it is contesting its liability for the tax or the amount of tax in accordance with procedures established by the appropriate Revenue Act; or

b. it has entered into an agreement with the Department of Revenue for payment of all taxes due and is currently in compliance with that agreement.

By: _____
Authorized Agent of Contractor (name and title)

SUBSCRIBED AND SWORN to before me
this _____ day _____, 20__.

_____
Notary Public

SUBSTANCE ABUSE PREVENTION ON PUBLIC WORKS PROJECTS

The Contractor certifies that it has in place a written program that meets or exceeds the program requirements of the Substance Abuse Prevention on Public Works Projects Act (Public Act 95-0635), and will provide a copy thereof to Community High School District No. 99 prior to commencement of work on the Project.

By: _____
Authorized Agent of Contractor (name and title)

SUBSCRIBED AND SWORN to before me
this _____ day _____, 20__.

_____
Notary Public

CERTIFICATE REGARDING EMPLOYENT OF ILLINOIS WORKERS ON PUBLIC WORKS

_____ agrees if at the time the Agreement is executed, or if during the term of the Agreement, there is excessive unemployment in Illinois as defined in the Employment of Illinois Workers on Public Works Act, 30- ILCS 570/0/01 et seq., as two consecutive months of unemployment exceeding 5%, then _____ agrees to employ Illinois laborers in accordance with the Employment of Illinois Workers on Public Works Act. An "Illinois laborer" is defined as any person who has resided in Illinois for at least thirty (30) days and intends to become or remain an Illinois resident.

Firm:_____

By:_____
(Signature)

_____
(Printed Name & Title)

SUBSCRIBED AND SWORN TO before me

This _____ day of _____, 2019

_____.
NOTARY PUBLIC

PREVAILING WAGE AFFIDAVIT

AFFIDAVIT: "I (we) hereby certify and affirm that if awarded a contract with Community High School District 99, we will comply fully with the "Illinois Prevailing Wage Act (Ill. Rev. Stat., 1987 Ch. 48, Sections 398 s-1-12 as amended by Public Act 86-693 and 86-799 effected January 1, 1990, and any other amendments effective thereafter)". We further understand that current prevailing wage standards are included in the Supplementary General Conditions.

The following affidavit must be signed and submitted with bidder's bid proposal. FAILURE TO DO SO MAY RESULT IN DISQUALIFICATION OF THE BIDDER.

_____, as part of its bid for the _____ work for Community High School District 99, Downers Grove, Illinois, certifies that said contractor is not barred from bidding on the aforementioned contract as a result of a violation of the Illinois Prevailing Wage Act (Ill. Rev. Stat., 1987 Ch. 48, Sections 398 s-1-12 as amended by Public Act 86-693 and 86-799 effected January 1, 1990).

Firm:_____

By:_____
(Signature)

_____
(Printed Name & Title)

SUBSCRIBED AND SWORN TO before me

This _____ day of _____, 2019

_____.
NOTARY PUBLIC

NON-COLLUSION AFFIDAVIT

AFFIDAVIT: “I (we) hereby certify and affirm that my (our) proposal was prepared independently for this project and that it contains no fees or amounts other than that for the legitimate execution of this work as specified and that it includes no understanding or agreements in restraint of trade.”

The following affidavit must be signed and submitted with bidder’s bid proposal.
FAILURE TO DO SO MAY RESULT IN DISCQUALIFCIATION OF THE BIDDER.

_____, as a part of its bid for the _____ work for Community High School District 99, Downers Grove, Illinois, certifies that said Contractor is not barred from bidding on the aforementioned contract as a result of a violation of the above Non-Collusion Affidavit.

Firm:_____

By:_____
(Signature)

_____
(Printed Name & Title)

SUBSCRIBED AND SWORN TO before me

This _____ day of _____, 2019

_____.

NOTARY PUBLIC

Criminal Background Investigations

Contractor hereby represents, warrants and certified that no officer or director thereof has any knowledge that any employee thereof has been convicted of committing or attempting to commit "Criminal Code of 1961," 720 ILCS, Sections 5/11-6 (Indecent solicitation of a child), 5/11-9 (Public indecency), 5/11-14 (Prostitution), 5/11-15 (Soliciting for a prostitute), 5/11-15.1 (Soliciting for a juvenile prostitute), 5/11-19 (Pimping), 5/11-19.1 (Juvenile pimping), 5/1119.2 (Exploitation of a child), 5/11-20 (Obscenity), 5/11-20.1 (Sexual assault), 5/12-14 (Aggravated criminal sexual assault), 5/12-15 (Criminal sexual abuse), and 5/120-16 (Aggravated criminal sexual abuse), and/or those offenses defined in the "Cannabis Control Act," 720 ILCS, 550/1 et seq. (except the "Illinois Controlled Substances Act," 720 ILCS 570/100 et seq. and/or any offense committed or attempted in any other state or against the laws of the United States, which if committed or attempted in this State, would have been punishable as one or more of the foregoing offenses.

Contractor further agrees that it shall not employ any person who have or may have direct, daily contact with the pupils of any school in the district, and for whom a criminal background investigation has not been conducted pursuant hereto, and further represents and agrees that all applicants for any such employment shall furnish with their applications the attached written "Authorization for Criminal Background Information" form authorizing the Board of Education to request a criminal background investigation of said applicant pursuant to Section 5/10-21.9 of the School Code of Illinois and to receive criminal history record information pursuant thereto to determine if the applicant has been convicted of committing or attempting to commit any of the criminal or drug offenses enumerated above. Contractor further agrees to submit with said authorization payment for any costs and expenses associated with the criminal background investigation.

Contractor further represents, warrants, and certifies that no applicant for employment with respect to whom the criminal investigation reveals any conviction for committing and/or attempting to commit any of the above enumerated offenses shall be employed thereby in any position that involves or may involve contact with the students of the school district.

This certification is executed on the date hereinafter indicated by the designated contractor by its duly authorized officer.

Firm:_____

By:_____
(Signature)

_____
(Printed Name & Title)

Date:_____

Criminal Background Investigation

The undersigned hereby authorizes in Board of Education of Community High School District 99, Downers Grove, Illinois, to request a criminal background investigation from the Illinois State Police, pursuant to Section 5/10-21.9 of the School Code of Illinois, 105 ILCS 5/10-21.9 and to receive criminal history record information pursuant thereto.

By:_____
(Signature of Applicant of Employee)

_____
(Printed or Typed Name of Applicant Employee)

Date:_____

BUSINESS CLASSIFICATION *a)* **Business Entity *(check one)***

_____ Corporation (Publicly held)* _____ Not-for-Profit* _____ Government Agency/Public Institution*
_____ Corporation (Privately held) _____ Partnership _____ Sole Proprietor

* If checked, do not complete section III (b) and (c) below.

b)* Business Ownership *(check one) If minority or woman owned, attach copy of certification evidence.

Large Business: _____ Male Owned _____ Woman Owned
Small Business: _____ Male Owned _____ Woman Owned

BUSINESS DEFINITIONS

Small Business Concern - an independently owned and operated concern certified, or certifiable, as a small business by the Federal Small Business Administration (SBA). Standard Industrial Classification (SIC) codes may be found in the Federal Acquisition Regulations, Section 19.102 or in the Federal Procurement Regulations, Section 1-1.701.

Small Disadvantaged or Minority Business Concern - a small business concern which is at least fifty-one percent (51%) owned by one or more socially and economically disadvantaged individuals or in the case of any publicly owned business, at least fifty-one percent (51%) of the stock of which is owned by such individuals; and whose management and daily business operations are controlled by one or more of such individuals. Business owners who certify that they are members of named groups (Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans) are considered socially and economically disadvantaged.

Woman-Owned Business - a business concern that is at least fifty-one percent (51%) owned by a woman or women who also control and operate it. "Control" in this context means exercising the power to make policy decisions. "Operate" in this context means being actively involved in the day-to-day management.

c)* Race/Ethnicity of Ownership *(check one) based on definitions below.

_____ Black _____ Asian/Pacific or Asian/Indian _____ Caucasian
_____ Hispanic _____ Native American (American Indians, Eskimos, Aleuts and native Hawaiians)

ETHNIC GROUP DEFINITIONS

Black Americans: United States citizens whose origins are in any of the Black racial groups of Africa.
Hispanic Americans: United States citizens whose origins are in Mexico, Puerto Rico, Cuba, Portugal, Central or Central America.
Native Americans: United States citizens whose origins are in any of the original peoples of North America, i.e., American Indians, Eskimos, Aleuts and native Hawaiians.
Asian Pacific/Asian Indian Americans: United States citizens whose origins are in Japan, China, Korea, Taiwan, Cambodia, Laos, Vietnam, the Philippines, Samoa, Guam, the U.S. Trust Territories of the Pacific Islands, the Northern Mariana Islands, India, Pakistan, or Bangladesh.

I certify that the business classification and ethnicity indicated above reflects the true and correct status of this business in accordance with current Federal Small Business Administration criteria. I agree to inform Community High School District 99 immediately in writing of any changes to the information contained herein, including changes in ownership, controlling interest or operations. I understand that falsely certifying this information may result in suspension from participation in Community High School District 99 - North High School Phase II project.

Name: _____ Title: _____
(Print or Type)

Signature: _____ Date: _____

END OF SECTION 00301

ECS Midwest, LLC

Subsurface Exploration and Geotechnical Engineering Report Downers Grove South High School

1736 Norfolk Street
Downers Grove, Illinois

ECS Project Number 16:8421-C1

August 23, 2018

August 23, 2018

Mr. James Kolodziej
Director of Physical Plant & Operations
Community High School District 99
6301 Springside Avenue
Downers Grove, Illinois 60516

CC: Amy Fuller, RA
Wight & Company
E-mail: afuller@wightco.com

ECS Project No. 16:8421-C1

Reference: Report of Subsurface Exploration and Geotechnical Engineering
Downers Grove South High School
1736 Norfolk Street
Downers Grove, Illinois

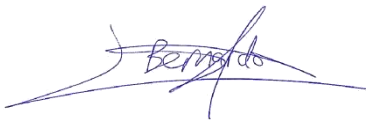
Mr. Kolodziej:

ECS Midwest, LLC (ECS) has completed the subsurface exploration, laboratory testing, and geotechnical engineering analyses for the above-referenced project. Our services were performed in general accordance with our Proposal No. 16: 18130-GP, dated July 13, 2018 and revised July 17, 2018. This report presents our understanding of the geotechnical aspects of the project along, the results of the field exploration and laboratory testing conducted, and our design and construction.

It has been our pleasure to be of service to the Community High School District 99 and Wight & Company during the design phase of this project. We would appreciate the opportunity to remain involved during the continuation of the design phase, and we would like to provide our services during construction phase operations as well to verify the assumptions of subsurface conditions made for this report. Should you have any questions concerning the information contained in this report, or if we can be of further assistance to you, please contact us.

Respectfully submitted,

ECS Midwest, LLC



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Renews 11/30/2019

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Appendix A – Drawings & Reports

- Site Location Diagram
- Boring Location Diagram

Appendix B – Field Operations

- Reference Notes for Boring Logs
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- In-Situ Pressuremeter Testing Results
- Refraction Microtremor (ReMi) Testing Results

Appendix C – Supplemental Report Documents

- Important Information about This Geotechnical-Engineering Report

EXECUTIVE SUMMARY

This executive summary is solely provide to give a brief overview of the project findings. The summary is abbreviated. Information gleaned from the Executive Summary should not be utilized in lieu of reading the entire geotechnical report.

- We understand the proposed construction consists of a 2-story, slab-on-grade classroom addition, a 3-story, slab-on-grade courtyard infill, a 2-story, auditorium addition with one below-grade level (all adjacent/within the existing high school structure) and a bleachers and press box (adjacent to the stadium). At the time this report was written, the finished floor elevation (FFE) of the proposed structure and the anticipated wall and column loads were not available. We have anticipated the proposed column loads will be on the order of 125 to 300 kips and 5 to 6 kips per linear foot, respectively (for the classroom, courtyard infill and atrium additions), and 50 to 100 kips (for the bleachers and press box). We also anticipate the FFE of the proposed additions will approximately match the FFE of the adjacent structures, therefore requiring cut and fill operations on the order of ±2 feet or less.
- The geotechnical exploration performed for the planned development included twenty-six soil test borings drilled to depths ranging between 4 feet and 30 feet below existing site grades. Standard penetration tests (SPTs) were conducted in the borings at regular intervals in general accordance with ASTM D 1586. In addition, an in-situ pressuremeter testing program and a seismic site classification testing (ReMi testing) were performed on site.
- The surficial materials at the boring locations were observed to consist of about 3 to 18 inches of topsoil or 4 to 6 inches of concrete over 6 to 8 inches of gravel base course. At borings B-1, B-2, B-4, B-5, B-9, B-10 B-11, B-16, S-3 and S-4, the surficial materials were observed to be underlain by miscellaneous fill materials (consisting of lean clay fill or possible fill, or sand with gravel fill) to depths ranging from about 3½ to 5 feet below existing site grades (Stratum I). Stratum I (where encountered), or otherwise the surficial materials, the miscellaneous fill was observed to be underlain by natural lean clay soils (Stratum II) to depths ranging from to 22 to a maximum explored depth of about 30 feet below existing site grades. At soil borings B-4, B-13 and S-4, Stratum II was observed to be underlain by sand with gravel to a maximum explored depth of about 30 feet below existing site grades.
- The planned structures may be supported by conventional shallow foundations consisting of column, strip or drilled pier footings extended through undocumented fill soils (where encountered) and bearing on competent natural soils or engineered fill overlying competent natural soils proportioned for a maximum net allowable bearing pressure of 12,000 psf. For shallow foundations for the proposed development, the post-construction settlements are anticipated to be less than 1 inch total and less than ½ inch differential. ***ECS utilized specialized tools in the development of the recommendations provided. Please refer to the body of the text for more detail.***
- Recommendations for the design of below grade walls, soil-supported slabs and pavements are provided in the body of the text and should be followed and properly implemented. Please refer to the body of the text for more details.

1.0 INTRODUCTION

1.1 GENERAL

The purpose of this report is to provide the results of our subsurface exploration and laboratory testing, site characterization, engineering analyses, geotechnical recommendations for the design of foundations, floor slabs, and pavements for the proposed development. Also included are geotechnical subgrade preparation, fill placement and general dewatering recommendations. The recommendations developed for this report are based on project information supplied by Wight & Company and Ms. Amy Fuller.

1.2 SCOPE OF SERVICES

Twenty-six soil test borings were performed at locations selected by the project team based on the existing site features and the proposed development. A laboratory-testing program was also implemented to characterize the physical and engineering properties of the subsurface soils.

This report discusses our exploratory and testing procedures, presents our findings and evaluations and includes the following.

- A brief description of our field and laboratory test procedures and the results of testing conducted.
- A description of observed surface topographical features and site conditions.
- A description of the interpreted subsurface soil stratigraphy with pertinent available physical properties.
- Copies of our soil exploration/test boring logs.
- Recommendations for site preparation and construction of compacted fills, including an evaluation of on-site soils for use as compacted fills and delineation of potentially unsuitable soils and/or soils exhibiting excessive moisture at the time of sampling.
- Recommended foundation type(s).
- General ground-supported floor slab design recommendations, including a recommended design subgrade modulus value.
- Recommendations for below grade walls design and construction.
- Recommended seismic Site Class.
- General recommendations for pavement design, including a recommended design CBR value.
- General Recommendations for the construction adjacent to existing structures.
- Evaluation and recommendations relative to groundwater control, including recommendations for pavement underdrains.

1.3 AUTHORIZATION

Our services were provided in accordance with our Proposal No. 16: 8130-GP, dated July 13, 2018 and revised July 17, 2018 and authorized by you, and includes the Terms and Conditions of Service outlined within the proposal.

2.0 PROJECT INFORMATION

2.1 PROJECT LOCATION AND CURRENT SITE CONDITIONS

The proposed project site is located at 1436 Norfolk Street in Downers Grove, Illinois and is bound to the north by 63rd Street, to the east by Dunham Road, to the south by Norfolk Street, and to the west by Springside Avenue. The site location is shown below, and in wider scope on the Site Location Diagram in Appendix A.

The project site is developed with Downers Grove South High School and its associated site amenities (i.e., parking lots, drive lanes, sport fields, etc.). A site-specific topographic survey was not available at the time this report was written. Based on the elevation survey performed by ECS personnel, the surface elevations at borings B-1 through B-16 and S-1 through S-5 range from EL. 100 feet to EL. 106 feet relative to BM-1. At borings HA-1 through HA-5, the existing site grades appear to range from about EL. 99 feet to EL. 101 feet relative to BM-2.

Figure 2.1.1. Site Location

2.2 PROPOSED CONSTRUCTION

We understand the proposed construction consists of a 2-story, slab-on-grade classroom addition; a 3-story, slab-on-grade courtyard infill; a 2-story, auditorium addition with one below-grade level (all adjacent/within the existing high school structure); and a bleachers and press box (adjacent to the stadium). At the time this report was written, the finished floor elevations (FFE) of the proposed structures and the anticipated wall and column loads were not available. Based on our experience with similar structures, we have anticipated the proposed column and wall loads will be on the order of 125 to 300 kips and 5 to 6 kips per linear foot, respectively (for the classroom, courtyard infill and atrium additions). Column loads of 25 to 50 kips are anticipated for the bleachers and press box. We have anticipated the FFE of the proposed additions will approximately match the FFE of the adjacent structures, therefore requiring cut and fill operations on the order of ±2 feet or less.
Pavement: The development will also contain the associated parking and drive lanes. The planned traffic was not provided to us. Therefore, it was necessary for us to use arbitrarily-selected design

traffic volumes. Based on similar type developments we assumed a maximum daily traffic volume of 500 automobiles, 25 delivery trucks/buses for heavy duty pavement areas, and a maximum daily traffic volume of 200 automobiles, and 2 delivery trucks/buses for light duty pavement areas. It is assumed that 2 feet or less of fill and cut will be needed to develop the pavement surface elevations.

If our understanding of the proposed development is inaccurate or the design changes, please notify ECS immediately so we can review (and revise, if required) the recommendations provided in this report.

3.0 FIELD EXPLORATION

3.1 FIELD EXPLORATION PROGRAM

The field exploration was planned with the objective of characterizing the project site in general geotechnical and geological terms and to evaluate subsequent field and laboratory data to assist in the determination of geotechnical recommendations.

3.1.1 Test Borings

The subsurface conditions were explored by drilling twenty-one soil test borings within the project site, designated as B-1 through B-16 and S-1 through S-5. A truck-mounted drill rig was utilized to drill most of the soil test borings, although due to accessibility constraints, an ATV-mounted drill rig was utilized to drill the remaining boring locations (in particular the areas around the stadium, boring numbers B-14 through B-16). Borings were advanced to depths ranging from about 15 to 30 feet below current ground surface. The subsurface exploration was completed by a subcontracted driller under the guidance of ECS.

In addition, five soil borings (designated as HA-1 through HA-5) were performed within the existing courtyard by means of manual methods (bucket-type, four-inch diameter hand auger apparatus) to depths ranging from about 4 to 10 feet below existing site grades. Although originally planned to extend to a maximum depth of 10 feet, borings HA-1, HA-2, HA-4 and HA-5 were terminated at depths ranging from 4 through 7¼ feet below existing site grades, where practical auger refusal was encountered. The interior borings were completed by an ECS a subcontracted driller under the guidance of ECS.

Boring locations were identified in the field by ECS measuring from existing features prior to mobilization of the drilling equipment. The approximate as-drilled boring locations are shown on the Boring Location Diagram in Appendix A. The ground surface elevations noted on our boring logs were determined by conventional level survey performed by ECS at the time the borings were laid out on site. Since a site-specific topographic survey including the site benchmark was not available, ECS selected a temporary benchmark defined as “Top of Manhole BM-1” and it was assumed to be elevation EL. +100 feet. BM-1 was utilized to determine the relative elevation of all the exterior borings (B-1 through B-16 and S-1 through S-5). Due to the site constrains, a secondary temporary benchmark (not linked to the previous benchmark) was defined as “Top of benchmark BM-2 by boring HA-5” and it was assumed to be elevation EL. +100 feet. The secondary benchmark was utilized for the interior borings (HA-1 through HA-5) only. Approximate benchmark locations are included in the Boring Location Diagram in Appendix A.

Standard penetration tests (SPTs) were conducted in the boreholes at regular intervals in general accordance with ASTM D 1586. Small representative samples were obtained during these tests and were used to classify the soils encountered. The SPT resistances obtained provide a general indication of soil consistency and relative density.

Borehole backfill settlement or expansion can and will occur over time. Monitoring the boreholes after the initial drilling activities is not within our Scope. Settlement or expansion of the borehole backfill can create a hazard and should be carefully monitored by the client or property owner.

3.1.2 Pressuremeter Testing Program

An ECS Field Engineer performed a pressuremeter testing program consisting of eight tests at boring locations B-2, B-10 and HA-3 at depths ranging from about 5 to 20 feet below current site grades (corresponding to elevations in the range of approximately EL. 95½ feet to EL. 82¾ feet ±, utilizing the temporary benchmarks defined in the previous section). In general, the in-situ pressuremeter tests were performed in the very stiff to hard lean clay soils. The test locations, test depths and test results are summarized in the "Pressuremeter Testing Summary Table" in Appendix B of this report and on the boring logs.

In the pressuremeter test, a radially expanding cylindrical probe is inserted into a specially prepared 2.5-inch diameter borehole. The probe is then expanded incrementally against the side of the hole with a combination of pressurized liquid and gas. Each pressure increment is maintained for one minute. The pressure increments are continued until failure of the soil is reached. The change in diameter of the probe within the borehole under each pressure increment is measured by the volume change in the center portion of the probe.

By plotting the probe volume versus pressure, a stress-volumetric strain curve is obtained. From this curve, four parameters are obtained for the computation of the soil bearing value and compression. The first parameter is the creep pressure, P_f, which indicates the upper limit of the "pseudo-elastic" zone and indicates the pressure at which movements of the soil particles continue under constant load. The second parameter is the limit pressure, P_l, which is defined as the pressure at which the soil reaches failure. A third parameter is the modulus of deformation, E_d, which is derived from the slope of the stress-volumetric strain curve in the "pseudo-elastic" zone. The modulus of deformation, Ed, is used to estimate settlements of the foundation system elements and other loaded areas. Lastly, the rebound modulus, E_r, was determined during each of the pressuremeter tests performed at the exterior boring locations.

A benefit of performing pressuremeter testing is to obtain a better measure of the in-situ deformation modulus, which is used to calculate the settlement characteristics of soils, than modulus correlations derived from conventional SPT testing.

3.2 SUBSURFACE CHARACTERIZATION

The subsurface conditions encountered were generally consistent with published geological mapping. Listed in the following table is a generalized characterizations of the soil strata encountered at the test borings during our subsurface exploration. For subsurface information at a specific location, refer to the Boring Logs in Appendix B.

Table 3.2.1 Generalized Subsurface Stratigraphy

Approximate Depth Range (feet)	Stratum	Description	Unconfined Compressive Strength (tsf)[2]	Water Content (%)	SPT[1] N-values (bpf)
Surface cover	n/a[3]	**Concrete:** 4 to 6 ± inches over gravel base: 6 to 8 ± inches, or **Topsoil:** 3 to 18 ± inches	NA	NA	NA
¼ - 5	I[4],[5]	**Fill:** (CL) Lean Clay, Dark Brown, Moist, Stiff to Hard **Fill:** (SP) Sand with Gravel, Dark Brown, Moist, Medium Dense **Possible Fill:** (CL) Lean Clay, Dark Brown, Moist, Stiff to Hard	1-6+ tsf NA 1½-6 tsf	14-23 NA 13-26	7-17[4] 11-13[4] 7-14[4]
3½ - 30	II[6]	(CL) Lean Clay, Brown to Gray, Moist, Stiff to Hard	¾-6 tsf	10-27	4-53
22 – 30[7]	III	(SP) Sand with Gravel, Gray, Moist, Loose to Medium Dense	NA	NA	8-13

Notes:
(1) Standard Penetration Test.
(2) Unconfined compressive strengths estimated with a calibrated hand penetrometer.
(3) Concrete pavement was encountered at borings B-3 through B-6. Topsoil encountered at the remaining borings.
(4) Lean Clay FILL encountered at borings B-1, B-2, B-4, B-10 and S-4. Sand with Gravel FILL encountered at borings B-5 and B-11 only. Lean Clay POSSIBLE FILL encountered at borings B-9, B-16 and S-3 only. Blow counts in undocumented fill soils may not be representative of actual in situ conditions.
(5) At soil boring B-10, Stratum I was observed to be underlain by black lean clay (possible buried topsoil) to a depth of about 5 feet.
(6) Intermittent clayey sand, sandy clay and clayey silt seams encountered throughout. Borings B-4, B-13 and S-4 terminated in Stratum III (sand with gravel).
(7) In boring S-4, Stratum III was observed at a depth of about 9 feet to the boring termination (15 feet).

The soil stratification shown on the boring logs represents the interpreted soil conditions at the actual boring locations. Variations in the stratification can occur between sample intervals and between boring locations. The subsurface conditions at other times and locations on the site may differ from those found at the boring locations. If different site conditions are encountered during construction, ECS should be contacted to review our recommendations relative to the new information.

3.3 GROUNDWATER OBSERVATIONS

Water levels were measured in our borings as noted on the soil boring logs in Appendix B. Groundwater conditions are summarized in the table below:

Table 3.3.1 Groundwater Conditions

Groundwater Encountered…	Location	Approximate Depth Below Current Grades (feet)	Approximate Elevation (±)	Notes
While Drilling	B-1 through B-4 and S-4	11-23½	EL. 79½ - 92½	NA
After Casing Removal	B-4 and S-4 only	10	EL. 90 – 93½	NA
Estimated Static Groundwater Table	All except HA-1, HA-2, HA-4 and HA-5	8½-15	EL. 89 – 94½	See below[1]

Notes:
1. Soils in the Midwest frequently oxidize from gray to brown above the level where the soil remains saturated. The static groundwater table is frequently interpreted to be located near this zone of change.

It should be noted that the groundwater level can vary based on precipitation, evaporation, surface run off and other factors not immediately apparent at the time of this exploration.

3.4 GEOPHYSICAL EXPLORATION PROGRAM

3.4.1 Refraction Microtremor (ReMi) Survey

A Reflection Microtremor (ReMi) survey was performed at the site. The data gathering process in the field used standard refraction seismic equipment to measure site characteristics using ambient vibrations (micro tremors) as a seismic source. The equipment is capable of storing record lengths up to about 100 seconds and 12 10-Hz vertical P-wave geophones. The analysis presented here was developed from the 12 receivers (10 Hz. Geophones) set along relatively straight-line arrays with evenly spaced intervals between the receivers. Ten unfiltered 30-second records were recorded along each line. The vibration records collected (data) was processed using SeisOpt® ReMi™ software, and the refraction micro tremor method as explained in Louie, J, N, 2001, "Faster, Better: Shear-wave velocity to 100 meters depth from refraction micrometer arrays", Bulletin of the Seismological Society of America, v. 91, p.347-364. The survey provides a one-dimensional average shear wave (S-wave) velocity for the line (array) to a depth of 100 feet.

Based on the results of the ReMi survey, the average shear wave velocity at the project site is 1,220 feet per second. The average shear wave velocity profile along the performed arrays is included in Appendix B.

4.0 LABORATORY TESTING

The laboratory testing performed by ECS for this project consisted of selected tests performed on samples obtained during our field exploration operations. Discussed in the following paragraphs are the results of the completed laboratory testing program. Classification and index property tests were performed on representative soil samples obtained from the test borings to aid classification of the soils and to estimate engineering properties.

A geotechnical engineer visually classified each soil sample recovered from the test borings on the basis of texture and plasticity using the USCS and ASTM D2488 (Description and Identification of Soils-Visual/Manual Procedures) as a guide. After classification, the geotechnical engineer grouped the various soil types into the major zones noted on the boring logs in Appendix B. The group symbols for each soil type are indicated in parentheses preceding the soil descriptions on the boring logs. The stratification lines designating the interfaces between earth materials on the boring logs are approximate; in situ, the transitions may be gradual.

Moisture content determination was performed on fine-grained soil samples in accordance with ASTM D 2166.

Calibrated hand penetrometer (Qp) tests were performed on cohesive soil samples. In the hand penetrometer test, the unconfined compressive strength of a soil sample is estimated, to a maximum of 6 tons per square foot (tsf), by measuring the resistance of a soil sample to penetration of a small, calibrated spring-loaded cylinder.

The soil samples will be retained in our laboratory for a period of 60 days, after which, they will be discarded unless other instructions are received as to their disposal.

5.0 DESIGN RECOMMENDATIONS

5.1 BUILDING DESIGN

The following sections provide recommendations for building foundation design, and soil supported slabs.

5.1.1 Foundations

Provided subgrades and engineered fills are prepared as discussed herein and the maximum compressive column and wall loads are in the range of 300 kips or less and 6 kips per linear foot or less, respectively (for the structural additions), and 25 to 50 kips or less (for the proposed bleachers and press box addition); the proposed additions may be supported by conventional shallow foundations extended through any undocumented fill soils (where encountered) to suitable natural Clay soils or on new engineered fill/lean concrete overlying competent natural Silty Clay soils. We recommend the foundation design utilize the following parameters:

Table 5.1.1 Foundation Design

Design Parameter	Column Footing	Wall Footing	Pier Foundations[3]
Net Allowable Bearing Pressure[1]	12,000 psf	8,000 psf	12,000 psf
Acceptable Bearing Soil Material	(CL) Lean Clay, Brown, Moist, Stiff to Hard – Stratum II Engineered FILL[2] overlying Stratum II	(CL) Lean Clay, Brown, Moist, Stiff to Hard – Stratum II Engineered FILL[2] overlying Stratum II	(CL) Lean Clay, Brown, Moist, Stiff to Hard – Stratum II Engineered FILL[2] overlying Stratum II
Minimum Width/Diameter:	36 inches	18 inches	36 inches
Minimum Footing Embedment Depth[4] (below slab or finished grade)	Exposed: 42 inches Interior: 24 inches	Exposed: 42 inches Interior: 24 inches	Exposed: 48 inches
Estimated Total Settlement	≈ 1 inch or less	≈ 1 inch or less	≈ 1 inch or less
Estimated Differential Settlement	½-inch between adjacent columns[5]	½-inch over 50 feet[5]	½-inch between adjacent columns

1. Net allowable bearing pressure is the applied pressure in excess of the surrounding overburden soils above the base of the foundation, based on a safety factor of 3.
2. As discussed in section 6.2 of this report.
3. Pier foundations anticipated for the proposed additions to the existing stadium (bleachers, press box).
4. The recommended maximum net allowable bearing stress is predicated on a minimum foundation embedment of one-quarter the foundation width (e.g., a 16-foot-square foundation would require a minimum embedment of 4 feet).
5. Based on our calculations, the differential settlement between adjacent column and wall foundations may be as high as ⅔ inch.

If the load differential between foundations, especially those near each other, is significant, the foundations may needed to be proportioned based on equivalent settlement rather than bearing capacity so that the differential settlement between foundations is kept within tolerable limits. If this condition is expected in the proposed structures, recommendations for proportioning the foundations based on equivalent settlement can be provided as an addendum after details of the foundation system, including loading on and locations of the footings have been established.

Special Qualifications Disclaimer: ECS utilized in-situ pressuremeter test in the evaluation of this site and the development of the foundation recommendations. Therefore, we can take no responsibility for the misinterpretation of our analysis by others unfamiliar with pressuremeter engineering or its applications, or for inspections performed by others. The maximum allowable bearing pressure was determined based on the results of the in-situ pressuremeter testing performed at the project site. It is critical that proper interpretation of the field conditions encountered during foundation construction be made for proper foundation performance. ECS must observe the foundation excavations.

Suitable bearing soils for direct foundation support or as the subgrade for engineered backfill and indirect foundation support were encountered at the test boring locations at depths ranging from about 3½ to 5½ feet (possibly deeper in unexplored areas of the site) below current site grades.

Undercuts: Based on the results of the present subsurface exploration, we anticipate undercuts may be required in area of borings B-8, B-9 and B-10 to reach suitable bearing soils.

ECS recommends the foundation bearing grade be observed and tested, and any undercut for foundations backfilled as recommended in the **Foundation and Slab Observations** section of this report. ***To help reduce disturbance of the foundation bearing grade at least the last 1 foot of material above the design bearing grade should be removed with an excavator equipped with a smooth-edged bucket.***

Adjacent Existing Foundations: Care must be taken to protect the existing structure. Excavations must be done so as to not undermine the existing construction, or otherwise adversely affect the structural integrity of the existing building.

Excavations should not extend below adjacent existing foundation unless underpinning or other forms of support are provided. It is unknown if additional load will be placed on the existing footings from the new addition. ECS must be contacted if load will be added to existing foundations or to the soil within the influence zone of the existing foundations. Test pits in the presence of ECS are recommended to help determine the existing foundations bearing material, and to help evaluate the degree to which load on the existing foundations may be increased. Load added to the existing footings will result in some additional settlement. The actual settlement will depend on the added load, the existing load, size of the existing footings, and strength and settlement characteristics of the support soil.

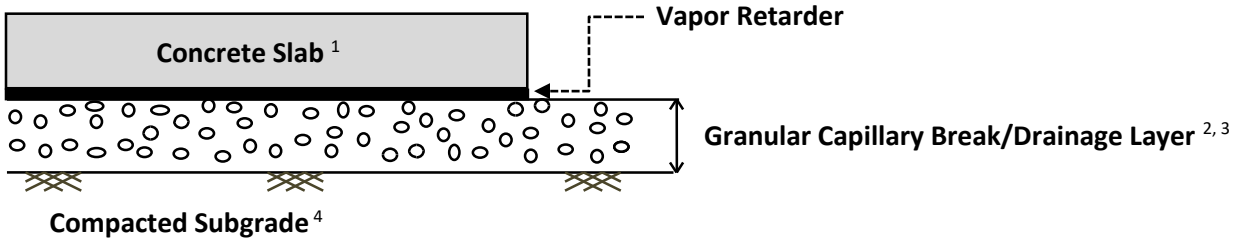
The addition foundations are recommended to bear at the same elevation as nearby existing foundations. When the actual existing and proposed building foundation systems and depths can be confirmed, contact ECS to evaluate whether our recommendations need to be altered to accommodate either foundation system accordingly. If the new and existing footings will bear at different elevations, a structural engineer should evaluate the stresses to be imposed on the lower foundation system and confirm that the structural integrity of the existing building and new addition will be maintained. Parallel foundations should be at least 1.5 footing widths apart (whichever is larger, either existing or new) to help reduce the additional stress imposed on the existing foundations, unless it is determined that the over-lapping stress imposed by the existing and new foundations are within acceptable limits for the bearing soil. Where parallel foundations are wider than 4 feet apart, their different elevations should not place them within a 45-degree envelope extending upward and downward from the outside edges of the foundations.

Drilled Pier Foundations: For the relatively lightly-loaded structures founded on relatively small diameter drilled shafts, we recommend the top of drilled shafts to be properly formed to prevent a "mushroom" of concrete from developing. If a mushroom of concrete does form, frozen soil beneath the enlarged area can rise vertically in response to frost heave and cause the entire drilled shaft to be lifted up. We recommend the use of waxed cardboard forms (Sonotubes) for the drilled shafts rather than corrugated metal pipe. We do not recommend the use of corrugated metal pipe since frozen soil can adhere to the corrugations in the metal pipe and raise the shaft foundation.

5.1.2 Floor Slabs

It is assumed the finished floor elevation of the building will be El. 746 feet above MSL. It is assumed the base course subgrade will consist of native soil and/or engineered fill used to raise site grades/backfill resulting undercuts. Based on the boring information, the soil at the subgrade elevation will be suitable for slab-on-grade support. Limited undercut of unsuitable bearing soil is expected to be necessary to develop a suitable floor slab sub-grade depending on the results of the subgrade verification (proofrolling) process. Engineered fill that is selected, placed from a suitable native soil subgrade, and compacted as recommended in this report could also support a concrete slab-on-grade.

Based on the anticipated subgrade soils and floor loading, the following graphic depicts our general soil-supported slab recommendations.



1. **Concrete Slab:** Minimum 5 inches thick
2. **Drainage Layer:** Minimum 6 inches thick
3. **Drainage Layer Material:** GRAVEL (GP, GW) having a maximum aggregate size of 1½ inches and no more than 5 percent passing the No. 200 sieve. Material meeting ASTM D448 Size Nos. 467, 57 or 67 could be used.
4. **Compacted Subgrade:** Compacted to at least 95 percent of the maximum dry density per ASTM D1557.

Figure 5.1.1

A thicker slab may be needed depending on the actual floor loads. The structural engineer should determine the actual slab thickness and steel reinforcing requirements. Provide adequate construction joints, contraction joints and isolation joints in the slab to reduce the impacts of cracking and shrinkage. Refer to ACI 302.1R04 *Guide for Concrete Floor and Slab Construction* for additional information regarding concrete slab joint design. Reinforce the slab with welded wire fabric or including an appropriate fiber mesh admixture to help control shrinkage cracking.

We recommend slabs-on-grade be underlain by a granular drainage layer placed on a properly prepared subgrade as recommended in the **Site Construction Recommendations** section. The granular material will serve as a capillary break, which if properly designed and installed, can sometimes eliminate the need for a moisture retarder and can assist in more uniform curing of

concrete. Where a vapor retarder is considered to provide additional moisture protection, give special attention to the surface curing of the slabs to reduce uneven drying of the slabs and associated cracking and/or slab curling. The use of a blotter or cushion layer above the vapor retarder can also be considered for project specific reasons. Refer to ACI 302.1R04 Guide for Concrete Floor and Slab Construction and ASTM E 1643 *Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs* for additional guidance on these issues.

Implement positive drainage around the perimeter of the proposed structures to reduce the potential for water accumulation under the floor slab and foundation elements. Slope exterior grades adjacent to the building such that runoff is directed away from the building walls. Direct building downspouts away from the building walls/foundations. Direct slab and pavement surface runoff to appropriate stormwater infrastructure.

Subgrade Modulus: Provided the Subgrade is prepared, and any Engineered Fill and the Granular Drainage Layer are placed as recommended in this report, design the slabs assuming a modulus of subgrade reaction, k_{v1} of 150 psi/in (pounds per square inch per inch). This modulus of subgrade reaction value assumed is based on the recommended minimum drainage base thickness and a 1 foot by 1 foot plate load test.

Slab Isolation: Isolate ground-supported slabs from the foundations and foundation-supported elements of the structure to reduce shear and bending stresses in the floor caused by differential movement between the foundations and slab. Where the structural configuration prevents the use of a free-floating slab, design the slab with suitable reinforcement and load transfer devices to preclude overstressing of the slab.

Estimated Settlement: The post-construction total and differential settlements of an isolated interior floor slab constructed as recommended in this report are estimated to be a maximum of about ½ inch and ⅓ inch, respectively, over a distance of about 20 feet.

Frost Susceptible Areas: Exterior patios and sidewalks, and portions of the floor slab, such as at doorways, and entrance/exit vestibules may be susceptible to frost heave movement during freezing weather. Additional insulation, installation of subgrade drainage, and/or replacement to the frost depth with non-frost-susceptible backfill should be considered for these areas. Slope pavement and ground surface grades away from the building and flatwork, to help reduce water infiltration and potential frost heave problems.

5.1.3 Below Grade Walls

We understand the proposed auditorium addition will include a below-grade level. The lowest (basement) floor level elevation was not known at the time this report was written. The static water table depth at the time of site exploration is estimated to be at 8½ to 15 feet below existing site grades, but perched water conditions may also develop or exist at shallower depths. The following below-ground wall design parameters are based on the estimated water conditions, and assume the lowest floor elevation of the structure will be at least 2 feet above the static water table.

Drainage System Recommendations: A drainage system is recommended to remove water near the below-grade walls and beneath the lowest level floor slab to lessen the potential for water pressure build-up against the below-grade walls.

Drainage aggregate should abut the below-grade walls as part of the drainage system. The aggregate will serve as drainage media to help lessen lateral pressures against the below-grade walls, as compared to the on-site silty and clayey soils. The drainage aggregate layer should be at least 2 feet wide, measured horizontally from the below-grade walls. The drainage aggregate layer should begin at the base of the footing pads and continuously abut the below-grade walls to within about 1-foot of the ground surface, where a clay cap or other relatively impermeable surface material should be installed to reduce surface water intrusion. The drainage aggregate could consist of a well-graded free draining aggregate. The free-draining aggregate is recommended to consist of a well-graded aggregate such as IDOT CA-6 material. An open-graded aggregate, such as IDOT CA-7, could be used, but if used, a geotextile is recommended to be placed between the drainage aggregate and soil of the excavation to provide separation and reduce migration of fine material into the void space of the open-graded aggregate.

Continuous drain pipes should be installed along the interior and exterior sides of the perimeter strip footing pads; creating interior and exterior drainage loops. Due to the close proximity of the estimated water table to the planned floor elevation, interior below-floor laterals connected to the subdrainage system are also recommended. The interior below-floor laterals are recommended to be placed approximately 30 feet apart so that water does not have to travel further than 15 feet to reach a drain pipe. The drain pipes should be minimum 4-inch-diameter perforated pipes specifically designed for drainage applications. The interior and exterior drain pipe systems should connect to the storm sewer system for removal, or common sump crocks equipped with sump pumps that discharge water to the ground surface, away from the below-ground walls. Submersible sump pumps and sealed sump crock lids are recommended to lessen the in-flow of subsurface gases, such as radon. Multiple sump pits are recommended. The project architect should determine the sump pump locations based upon architectural and structural details of the building. The sump pumps should be equipped with generator or battery back-up systems to reduce water problems in the event of a power failure. Drain pipe bleeders should be cast in the perimeter strip footing pads to serve as water conduits between interior and exterior drainpipes. The bleeder pipes should be about 3 inches in diameter and about 6 to 8 feet-on-center.

Exterior Ground Surface Positive Drainage: The ground surface should be properly sloped to direct water away from the backfill of the below-grade walls. Roof drains are recommended to be connected to the storm water drainage system where allowed. Where utility excavations intersect the basement wall drainage backfill, a clay backfill “dam” may need to be constructed to reduce the potential for water that accumulates within the utility backfill to backflow into the below-ground wall drainage system backfill.

Drainage Aggregate Compaction: Backfill that is placed adjacent to below-ground walls, and will also provide structural support, should be compacted to between 88 and 90 percent of the maximum dry density obtained by the Modified Proctor compaction test (ASTM D1557) or to an in-place density specified by the project architect or structural engineer. The drainage aggregate should be compacted in maximum 8-inch-thick lifts (measured loose). Heavy compaction equipment, such as mechanical rollers, should not be used within approximately 10 feet of the below-grade walls because high lateral pressures could develop and the walls could move and possibly fail. Hand-operated compaction equipment, such as vibratory plates, should be used within approximately 10 feet of below-ground walls. Below-ground walls should be braced during construction, backfilling, and compaction. The bracing should remain in-place until the below-ground floor slabs and main floor deck are installed.

It is common for below-grade wall backfilled to be compacted with minimal effort. As a result, settlement of the ground surface around the perimeter of structures commonly occurs. To reduce the potential for excessive settlements and the related damages, we recommend ECS observe and test backfill activities full-time during construction.

Lateral Pressures: An architect or structural engineer should design the below-grade walls to resist lateral pressures from the adjacent soil, water and any surface surcharges. The walls should be designed as restrained retaining walls based on at-rest earth pressures. Based on the test borings, it is expected silty clay soils will be retained by the walls. Assuming that drainage aggregate will continuously abut the below-ground walls and where properly drained, an equivalent at-rest fluid pressure of 70 psf per foot of depth may be used for below-grade wall design. Where not fully drained, an equivalent at-rest fluid pressure of 130 psf per foot of depth is recommended to be used for below-grade wall design. Lower equivalent fluid pressures are possible if a sloped excavation bank extending outside the active pressure zone and granular backfill are used. Where not fully drained, the walls both inside and out may be subject to moisture and/or water problems. Any surcharge loads imposed within a 45 degree slope of the base of the wall should be considered in the below grade wall design. The influence of these surcharge loads on the below grade walls should be based on an at-rest pressure coefficient, k_o, of 0.53 in the case of restrained walls. We can provide supplemental recommendations regarding surcharge loads on a case-by-case basis. Below-grade walls that are not designed to resist the actual pressures will be prone to dampness and/or lateral movement and potential distress. A soil-footing coefficient of sliding friction of 0.34 is recommended for sliding resistance. A cohesion value of 1,500 psf may be used for lateral sliding resistance on the lean clay soil.

5.1.5 Seismic Design Considerations

Seismic Site Classification: The 2012/15 International Building Code (IBC) requires the site be classified as Site Class A, B, C, D, E or F in accordance with Chapter 20 of ASCE 7 based on the site soil properties. The three parameters used to classify sites are shear wave velocity (v_s); undrained shear strength (s_u); and Standard Penetration Test (SPT) resistance (N-value). The seismic Site Class definitions for the weighted average of shear wave velocity, shear strength or SPT N-value in the upper 100 feet of the soil profile are listed Table 5.1.4.

Table 5.1.4.1: Seismic Site Classification

Site Class	Soil Profile Name	Shear Wave Velocity, Vs, (ft./s)	N value (bpf)	S_u value (psf)
A	Hard Rock	Vs > 5,000 fps	N/A	N/A
B	Rock	2,500 < Vs ≤ 5,000 fps	N/A	N/A
C	Very dense soil and soft rock	1,200 < Vs ≤ 2,500 fps	>50	≥2,000
D	Stiff Soil Profile	600 ≤ Vs ≤ 1,200 fps	15 to 50	1,000 to 2,000
E	Soft Soil Profile	Vs < 600 fps	<15	≤1,000

Chapter 20 of ASCE 7 requires the Site Class be based on the upper 100 feet of the soil profile. The modeled ReMi data collected from Line 1 produced an average shear wave velocity of 1,220 feet/second to a depth of 100 feet below the existing ground surface as measured from the current ground surface. Based on the results of the ReMi test, it is our opinion the site soils/rock may be characterized as Site Class C.

5.2 PAVEMENT DESIGN CONSIDERATIONS

The following sections provide recommendations for pavement design.

Subgrade Characteristics: A California Bearing Ratio (CBR) test is commonly used to determine soil support parameters for pavement design. A CBR test or other appropriate test was not part of the scope for this project, so it was necessary to assume the CBR design value. Based on the test borings, it appears the pavement subgrade soils will mainly consist of very stiff to hard lean clay. Because lean clay is frost susceptible and does not drain well, it is generally considered a poor subgrade material. Based on these assumptions, we used a design CBR value of 3. The pavement design recommendations assume the subgrade consists of suitable materials evaluated by ECS, and the subgrade is prepared as recommended in the **Subgrade Preparation** and **Earthwork Operations** sections of this report.

Areas of subgrade stabilization and/or undercut may be needed if the subgrade is subjected to construction traffic disturbance or if construction is during adverse weather conditions, particularly in areas where existing fill is present.

Pavement Sections: The recommended minimum pavement sections listed in Table 5.2.1 are based on the anticipated usage at the project site and a 20-year design service life, but were not developed based on specific traffic patterns, loading and resiliency factors, as those parameters were not provided by the design team. The assumption for the light-duty pavement section is that typical traffic loads will be limited to standard automobiles and does not account for more heavily loaded vehicles (i.e., multiple axle trucks) and should be used for parking lanes. The heavy-duty Portland cement concrete pavement section is recommended for frequent traffic areas such as where trucks frequently turn, drive through lanes, delivery areas, loading dock aprons, trash enclosure pads, and points of ingress or egress. ***If the anticipated traffic will exceed that assumed in the Proposed Construction section, ECS should be contacted for revised pavement design recommendations; otherwise, increased pavement maintenance and a shortened pavement life should be expected.***

Table 5.2.1 Pavement Section Recommendations

Pavement Material	Compacted Material Thicknesses (Inches)		
	Flexible Pavement		Rigid Pavement
	Light Duty	Heavy Duty	Heavy Duty
Portland Cement Concrete [1]	--	--	6
Hot Mix Asphalt Surface Course [2]	1½	1½	--
Hot Mix Asphalt Binder Course [2]	2	3	--
Aggregate Base Course [3]	6	11	6
Total Pavement Section Thickness	9½	15½	12

1. Section 420 of IDOT Standard Specification for Road and Bridge Construction.
2. Section 406 of IDOT Standard Specification for Road and Bridge Construction.
3. Section 351 of IDOT Standard Specification for Road and Bridge Construction. If crushed gravel or some other material is used in lieu of crushed stone, the material may have a lower structural coefficient and a thicker base may be required.

All pavement materials and construction should be in accordance with the Guidelines for AASHTO Pavement Design and the IDOT Standard Specifications for Road and Bridge Construction.

The pavement sections listed in the table above were developed for the anticipated in-service traffic conditions only and do not provide an allowance for construction traffic conditions or traffic conditions in excess of the assumed traffic. Therefore, if pavements will be constructed early during site development to accommodate construction traffic, consideration should be given to the construction of designated haul roads, where thickened pavement sections can be provided to accommodate the construction traffic, as well as the future in-service traffic. ECS can provide additional design assistance with pavement sections for haul roads upon request.

We recommend the crushed granular base course be compacted to at least 95 percent of the maximum dry density obtained in accordance with ASTM D1557, Modified Proctor Method. The asphalt concrete pavement should be compacted to a minimum of 93 percent of the theoretical density value. Prior to placing the granular material, the pavement subgrade soil should be properly compacted, observed to be stable during a final proofroll and free of standing water, mud, and frozen soil.

Adequate construction joints, contraction joints and isolation joints should be provided in the areas of rigid pavement to reduce the impacts of cracking and shrinkage. Please refer to ACI 330R-92 *Guide for Design of Concrete Parking Lots*. The Guide recommends an appropriate spacing strategy for the anticipated loads and pavement thickness. It has been our experience that joint spacing closer to the minimum values results in a pavement with less cracking and better long term performance.

Pavement Drainage: An important consideration with the design and construction of pavements is surface and subsurface drainage. Where standing water develops, either on the pavement surface or within the base course layer, softening of the subgrade and other problems related to the deterioration of the pavement can be expected. Shape or crowned the final pavement surface to properly direct surface water to suitable on or off-site stormwater drainage infrastructure. Properly slope the clay pavement subgrade to avoid dips or pockets where water may become trapped. Dips in the clay subgrade could result in a “bathtub” effect, which may trap water and potentially soften the subgrade. Good drainage should help reduce the possibility of the subgrade materials becoming saturated over a long period of time.

Infiltration and subterranean water are generally the main sources of water that should be considered in the design of the pavement. Infiltration is surface water that enters the pavement through the joints, pores or cracks in the pavement, and through shoulders and areas adjacent to pavements as a result of precipitation. Subterranean water is a source of water from a high water table on the site. Based on our estimated groundwater level, we consider surface water infiltration to be the main source of water to be considered for pavement design on this project.

To reduce the potential for shallow perched water to develop in areas of the site, install “stub” or “finger” drains around catch basins and in other low-lying areas of the parking lot to reduce the accumulation of water above and within the subgrade soils and aggregate base. As an alternative to the use of stub or finger drains, perforate existing manholes and storm sewer inlets with 1-inch diameter holes at 2-foot centers, and wrap the manhole/inlet with a non-woven geotextile to reduce migration of material into the manhole/inlet. The holes could be placed at 90 degree intervals around the perimeter of the manhole, and the excavation around the manhole backfilled with free draining granular materials.

Pavement Maintenance: A sound maintenance program should be implemented to help maintain and enhance the performance of pavements, and help attain the design service life. A preventative maintenance program should be implemented early in the pavement life to be effective. The "standard in the industry" supported by research indicates that preventative maintenance should typically begin within 2 to 5 years of the placement of pavement. However, maintenance of pavement on undocumented fill sites may require more maintenance and sooner. Failure to perform preventative maintenance will reduce the service life of the pavement, and increase the costs for corrective maintenance and full pavement rehabilitation. To help reduce water infiltration thru the pavement section into the base course layer, which may result in softening of the subgrade and deterioration of the pavement, we recommend timely sealing of pavement joints and cracks with elastomeric caulk. We recommend exterior pavements be observed for distresses, such as cracks, depressions and poor drainage, at least twice a year, typically once in the spring and once in the fall.

Weather Restrictions: In this region, asphalt plants may close during the months of December, January, and/or February if particularly cold weather conditions prevail. However, this can change based on year to year temperature fluctuations. Daily temperatures from November to April will often stay below 40°F, limiting the days that asphalt placement can occur.

6.0 SITE CONSTRUCTION RECOMMENDATIONS

6.1 SUBGRADE PREPARATION

6.1.1 Stripping and Initial Site Preparation

The initial subgrade preparation should consist of removing the existing topsoil and concrete pavements along with any other soft or unsuitable materials from the 10-foot expanded building areas, 5-foot expanded pavement limits, and to 5 feet beyond the toe of engineered fills. The project team may choose to stockpile the existing topsoil for later reuse in landscape and non-structural applications. The existing gravel base course can be stockpiled for later reuse as engineered fill.

ECS does not recommend the final slab/pavement subgrade soils remain exposed to the elements or construction traffic for a prolonged period of time as the subgrade may be disturbed and/or softened. If the slab section is not constructed within a few days after exposing the final design subgrade, consideration should be given to leaving the subgrade approximately 1 foot above the final design subgrade to help reduce disturbance of the subgrade soils (if feasible).

Based on our observations at the boring locations at the project site, we anticipate the soils at the slab/pavement subgrade elevation will consist of natural lean clay (fill, possible fill or natural) or sand with gravel FILL. We typically recommend removing and replacing the existing soils classified as fill. Removing and replacing the existing soils classified as fill, requiring excavations in the order of about 3½ to 5 feet below existing site grades (potentially deeper in unexplored areas of the project site). However, the existing fill and possible fill soils exhibited moderate strength properties, and the project team could consider leaving the existing fill and possible fill in place provided the proposed subgrade proofrolls satisfactorily. After the subgrade elevation has been exposed, it should be proofrolled as described below.

6.1.2 Proofrolling

After removing all unsuitable surface materials, cutting to the proposed grade, and prior to the placement of any engineered fill or other construction materials, the exposed subgrade should be observed by ECS. The exposed subgrade should be thoroughly proofrolled with previously approved construction equipment having a minimum axle load of 10 tons (e.g. fully loaded tandem-axle dump truck). The areas subject to proofrolling should be traversed by the equipment in two perpendicular (orthogonal) directions with overlapping passes of the vehicle under the observation of ECS. This procedure is intended to assist in identifying any localized yielding materials. In the event that unstable or “pumping” subgrade is identified by the proofrolling, those areas should be marked for repair prior to the placement of any subsequent engineered fill or other construction materials. If soft or yielding soils are observed during the proofroll of the subgrades, the soft soils should be undercut up to a maximum of 2 feet and replaced with properly manipulated onsite soils or compacted engineered fill to the design subgrade (see the Earthwork Operations Fill Placement section for recommendations).

This proofrolling procedure will only identify near surface soils that are unsuitable for slab and pavement support and any potential deeper pockets of unsuitable fill soils may not be fully identified and could lead to premature deterioration/cracking of the building slab/pavements. Methods of repair of unstable subgrade, such as undercutting, or moisture conditioning and recompaction, should be discussed with ECS to determine the appropriate procedure with regard to the existing conditions causing the instability. Test pit(s) may be excavated to explore the shallow subsurface materials in the area of the instability to help in determined the cause of the observed

unstable materials and to assist in the evaluation of the appropriate remedial action to stabilize the subgrade.

To help limit the required volume of undercuts, we recommend that soft or yielding soils be evaluated in approximately 6 to 12-inch intervals. That is to say, if soft or yielding soils are identified, the contractor should remove 6 to 12 inches of material in the subject area and then proofroll/evaluate the undercut subgrade. This could potentially limit the need to remove 2 feet of soil at once at all locations where soft or yielding soils are identified. A DCP (dynamic cone penetrometer) or Army Corps of Engineers penetrometer can also be used in conjunction with proofrolling to help determine appropriate depths for remedial action.

6.1.3 Site Temporary Dewatering

It appears the hydrostatic groundwater level at this site may be approximately between 8½ to 15 feet below existing site grades. Where excavations will extend below the groundwater level encountered at the boring locations, excavation dewatering will be necessary. Seasonal variations in precipitation and site drainage conditions can cause the accumulation of water in the upper soils. Where excavations extend less than 2 feet below the groundwater level, especially in areas containing primarily clayey soils, initial attempts to control water may be accomplished by pumping from sump pits in the excavation bottom, which are backfilled with AASHTO Size No. 57 Stone or open-graded bedding material. If water control cannot be maintained with sump pumps, or where excavations extend more than 2 feet below the groundwater level, dewatering likely will require installation of a well-point system or some other dewatering system to aid in maintaining the groundwater level below the excavation bottom. A qualified dewatering contractor should be consulted if groundwater cannot be satisfactorily controlled through the use of sump pumps.

6.2 EARTHWORK OPERATIONS

6.2.1 Engineered fill Materials

All fills should consist of approved materials, free of organic matter and debris, particles greater than 3-inches and have a Liquid Limit and Plasticity Index less than 40 and 15, respectively. Unacceptable fill materials include topsoil and organic materials (PT, OH, OL), high plasticity silts and clays (CH, MH), and low-plasticity silts (ML). Under no circumstances should high plasticity soils be used as fill material in proposed structural areas or close to site slopes.

The on-site soil, with the exception of topsoil, may be feasible to use as Engineered Fill, but should be further evaluated and approved by ECS prior to its use. ***As an exception, use lean concrete or structural concrete where fill below foundations is needed.*** On-site soil used as Engineered Fill must not contain an adverse amount of organic matter, and must be free of frozen matter, deleterious materials, over-sized material (maximum 3-inch particle diameter), or chemicals that may result in the material being classified as "contaminated." Depending on the conditions at the time of construction, the use of on-site soil may not be practical, and use of a less moisture sensitive imported granular material may be needed. The material used as Engineered Fill must be considered low volume change material with a maximum Liquid Limit of 40 and maximum Plasticity Index of 15, unless specifically tested and found to have low volume change properties and approved by ECS. The soils must be compacted within a narrow range of the materials optimum moisture content. The soil samples had relatively high moisture contents so some drying of on-site soil prior to reuse as Engineered Fill may be needed. The soil should not be compacted too dry as it may lose its apparent stability if it later becomes wet. The suitability of Engineered Fill materials is recommended to be checked by ECS prior to placement. Sorting to remove over-sized material (i.e. cobbles and boulders) may be needed prior to re-use of on-site soil as Engineered Fill.

We do not recommend the use of pea gravel as engineered fill. Pea gravel has round/smooth characteristics, no fines and does not interlock when compacted which make it more susceptible to future movement and instability resulting in excessive and variable settlement.

6.2.2 Compaction

Fill materials should be placed in lifts not exceeding 8-inches in loose thickness and moisture conditioned to within ±2 percentage points of the optimum moisture content. Soil bridging lifts should not be used, since excessive settlement of overlying structures could occur. Controlled fill soils should be compacted to a minimum of 95 percent of the maximum dry density obtained in accordance with ASTM D1557, Modified Proctor method.

The zone of the engineered fill placed below the foundations should extend 1 foot beyond the outside edges of the footings and from that point, outward laterally 1 foot for every 2 feet of fill thickness below the footing. Fill material should be placed in horizontal lifts. Where fill materials will be placed to widen existing embankment fills, or placed up against sloping ground, the soil subgrade should be scarified, and the new fill benched and keyed into the existing material. Fill is recommended to be placed and compacted on a 5 (H):1 (V) or flatter slope, or must be stepped or benched as required to flatten. In confined areas such as utility trenches, portable compaction equipment and thin lifts of 3 to 4 inches may be required to achieve specified degrees of compaction.

The expanded footprint of the proposed structure pad and fill areas should be well defined, including the limits of the fill zones at the time of fill placement. Grade control should be maintained throughout the fill placement operations. All fill operations should be observed on a full-time basis by a qualified soil technician to determine that the specified compaction requirements are being met. A minimum of one compaction test per 2,500 square foot area or 50 linear feet of trench should be tested in each lift placed with a minimum of 3 tests per lift. The elevation and location of the tests should be clearly identified at the time of fill placement.

Compaction equipment suitable to the soil type used as fill should be used to compact the fill material. Theoretically, any equipment type can be used as long as the required density is achieved; however, the standard of practice typically dictates that a vibratory roller be utilized for compaction of granular soils and a sheepsfoot roller be utilized for compaction of cohesive soils. In addition, a steel drum roller is typically most efficient for compacting and helping to seal the surface soils. All areas receiving fill should be graded to facilitate positive drainage from building pad areas of free water associated with precipitation and surface runoff.

It should be noted that prior to the commencement of fill operations and/or utilization of off-site borrow materials, ECS should be provided with representative samples to determine the material's suitability for use in a controlled compacted fill and to develop moisture-density relationships. To expedite the earthwork operations, if off-site borrow materials are required, it is recommended they consist of suitable fill materials in accordance with the recommendations previously outlined in this section. If frost susceptible soils are imported to the project site, the frost susceptible soils should not be placed within 3 feet of final site grades.

Fill materials should not be placed on frozen soils or frost-heaved soils and/or soils that have been recently subjected to precipitation. All frozen soils should be removed prior to continuation of fill operations. Borrow fill materials, if required, should not contain frozen materials at the time of

placement. All frost-heaved soils should be removed prior to placement of controlled, compacted fill, granular subbase materials, and foundation or slab concrete.

6.3 FOUNDATION AND SLAB OBSERVATIONS

Protection of Foundation Excavations: Exposure to the environment may weaken the soils at the footing bearing level if the foundation excavations remain open for too long a time. Therefore, foundation concrete should be placed the same day that excavations are made. If the bearing soils are softened by surface water intrusion or exposure, the softened soils must be removed from the foundation excavation bottom immediately prior to placement of concrete. If the excavation must remain open overnight, or if rainfall becomes imminent while the bearing soils are exposed, a 2 to 3-inch thick "mud mat" of "lean" concrete should be placed on the bearing soils before the placement of reinforcing steel.

Foundation Subgrade Observations: The recommendations of this report are predicated upon ECS checking the suitability of the actual foundation support soils during construction. We recommend hand auger probes and appropriate bearing capacity tests be conducted during construction. Cone penetrometer tests (static or dynamic, depending on soil type) or other appropriate bearing capacity tests should be conducted within the probe holes to evaluate the support characteristics of the soil. The suitability of the actual bearing grade is recommended to be observed and tested to a depth below the foundation bearing grade or undercut subgrade equivalent to ½ the footing width (i.e., ½ B), or a minimum of 3 feet below each isolated column footing and continuous footings, whichever is deeper. This observation and testing should be performed at each isolated column footing and at approximately 20-foot intervals along continuous wall footings to check that the soils are as indicated by the borings and are suitable to support the recommended maximum net allowable bearing pressure.

Unsuitable bearing soils encountered at the proposed foundation bearing grade or within the foundation influence zone are recommended to be removed to a suitable bearing subgrade. Any undercut should be backfilled with lean concrete ($f'_c \geq 1{,}000$ psi at 28 days) or structural concrete up to the original design bottom of footing elevation. The original footing is recommended to be constructed on top of the hardened lean concrete. If lean concrete is utilized to replace weaker/low bearing soils or unsuitable soils, lateral over-excavation is typically not necessary, but the excavation is recommended to be at least 1 foot wider than the footing (6 inches on each side), and the lean concrete should be allowed to sufficiently harden prior to placement of the foundation concrete.

Special Qualifications Disclaimer: ECS utilized in-situ pressuremeter test in the evaluation of this site and the development of the foundation recommendations. Therefore, we can take no responsibility for the misinterpretation of our analysis by others unfamiliar with pressuremeter engineering or its applications, or for inspections performed by others. Note that the maximum allowable bearing pressure was determined based on the results of the in-situ pressuremeter testing performed at the project site and proper interpretation of the field conditions encountered during foundation construction is critical for proper foundation performance. ECS must observe the foundation excavations.

Slab Subgrade Verification: ECS should be called on to observe exposed subgrades within the expanded building limits prior to Engineered fill Placement to check that adequate subgrade preparation has been achieved. A proofroll using a drum roller or loaded dump truck should be performed in their presence at that time. Once subgrades have been prepared, subgrades should

be properly compacted and new Engineered fill can be placed. Engineered fill should be moisture conditioned to within a narrow range of the optimum moisture content and then compacted to the required density. If there will be a significant time lag between the site grading work and final grading of concrete slab areas prior to the placement of the subbase stone and concrete, ECS should be called on to verify the condition of the prepared subgrade. Prior to final slab construction, the subgrade may require scarification, moisture conditioning, and re-compaction to restore stable conditions.

6.4 UTILITY INSTALLATIONS

Utility Subgrades: The soils encountered in our exploration are expected to be generally suitable for support of utility pipes. The pipe subgrade should be observed and tested by ECS to check the suitability of the materials encountered at the time of construction. Any soft, loose or otherwise unsuitable materials encountered at the utility pipe subgrade elevation should be removed and replaced with suitable compacted engineered fill or pipe bedding material.

Utility Backfilling: The granular bedding material should be at least 4 inches thick, but not less than that specified by the project drawings and specifications. Fill placed for support of the utilities, as well as backfill over the utilities, should satisfy the recommendations for engineered fill given in this report. Compacted backfill should be free of topsoil, roots, ice, or any other material designated by ECS as unsuitable. The backfill should be moisture conditioned, placed, and compacted as recommended in this report.

6.5 GENERAL CONSTRUCTION CONSIDERATIONS

Subgrade Protection: Measures should also be taken to limit site disturbance, especially from rubber-tired heavy construction equipment, and to control and remove surface water from development areas, including structural and pavement areas. It would be advisable to designate a haul road and construction staging area to limit the areas of disturbance and to prevent construction traffic from excessively degrading sensitive subgrade soils and existing pavement areas. Haul roads and construction staging areas could be covered with excess depths of aggregate to help protect those subgrades. The aggregate can later be removed and used in pavement areas if not contaminated with subgrade soils.

Surface Drainage: Surface drainage conditions should be properly maintained. Surface water should be directed away from the construction area, and the work area should be sloped away from the construction area at a gradient of 1 percent or greater to reduce the potential of ponding water and the subsequent saturation of the surface soils. At the end of each work day, the subgrade soils should be sealed by rolling the surface with a smooth drum roller to reduce infiltration of surface water.

Erosion Control: The surface soils may be erodible. Therefore, the Contractor should provide and maintain good site drainage during earthwork operations to maintain the integrity of the surface soils. All erosion and sedimentation controls should be in accordance with sound engineering practices and local requirements.

Excavation Safety: All excavations and slopes should be made and maintained in accordance with OSHA excavation safety standards. The contractor is solely responsible for designing and constructing stable, temporary excavations and slopes and should shore, slope, or bench the sides of the excavations and slopes as required to maintain stability of both the excavation sides and bottom. The contractor's responsible person, as defined in 29 CFR Part 1926, should evaluate the

soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations. ECS is providing this information solely as a service to our client. ECS is not assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

7.0 CLOSING

ECS has prepared this report of findings, evaluations, and recommendations to guide geotechnical-related design and construction aspects of the project.

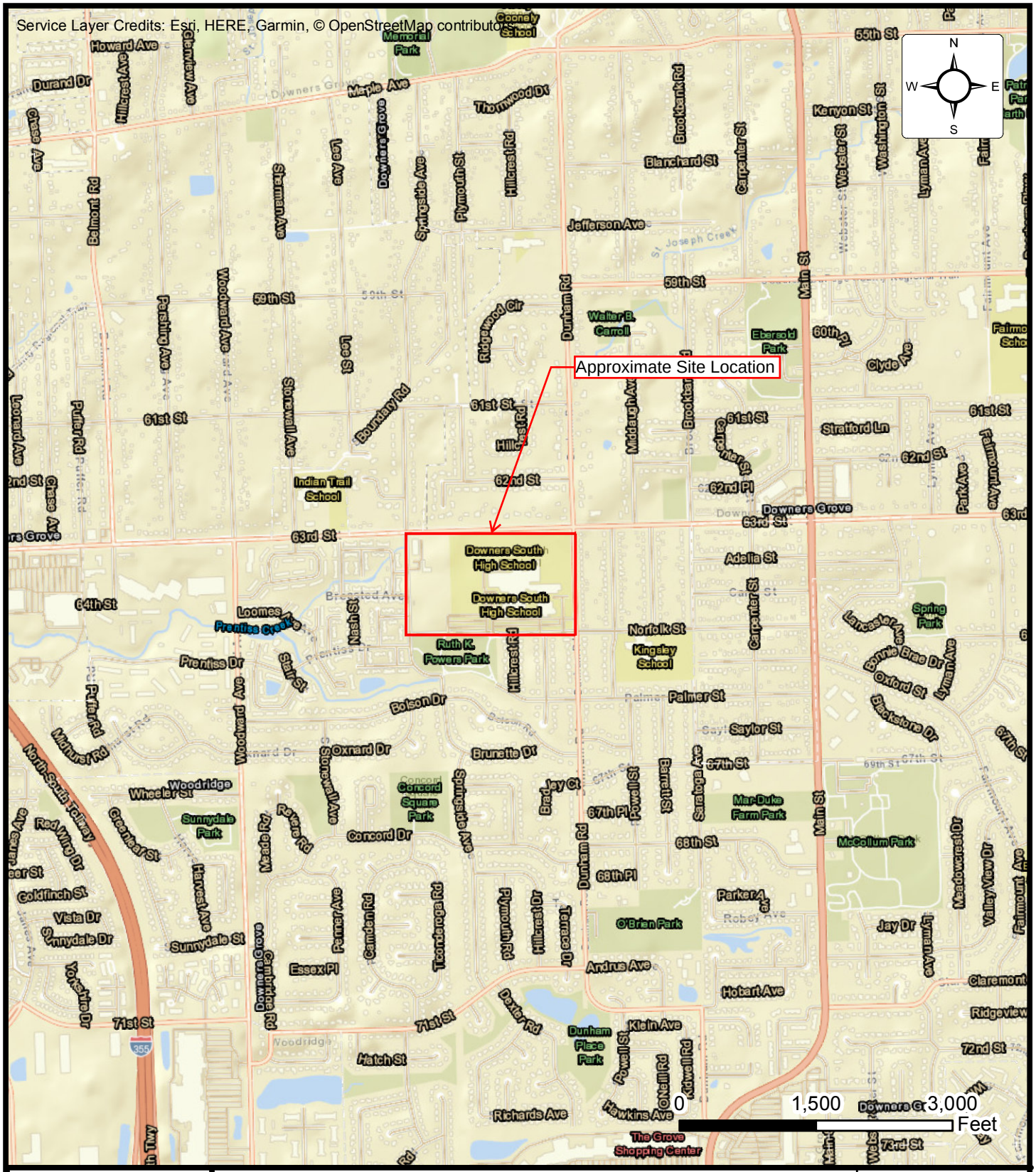
The description of the proposed project is based on information provided to ECS by your office. If any of this information is inaccurate, either due to our interpretation of the documents provided or site or design changes that may occur later, ECS should be contacted immediately so that we can review the report in light of the changes and provide additional or alternate recommendations as may be required to reflect the proposed construction.

We recommend that ECS be allowed to review the project's plans and specifications pertaining to our work so that we may ascertain consistency of those plans/specifications with the intent of the geotechnical report.

Field observations, and quality assurance testing during earthwork and foundation installation are an extension of and integral to the geotechnical design recommendation. We recommend that the owner retain these quality assurance services and that ECS be allowed to continue our involvement throughout these critical phases of construction to provide general consultation as issues arise. ECS is not responsible for the conclusions, opinions, or recommendations of others based on the data in this report.

APPENDIX A – Drawings & Reports

Site Location Diagram
Boring Location Diagram

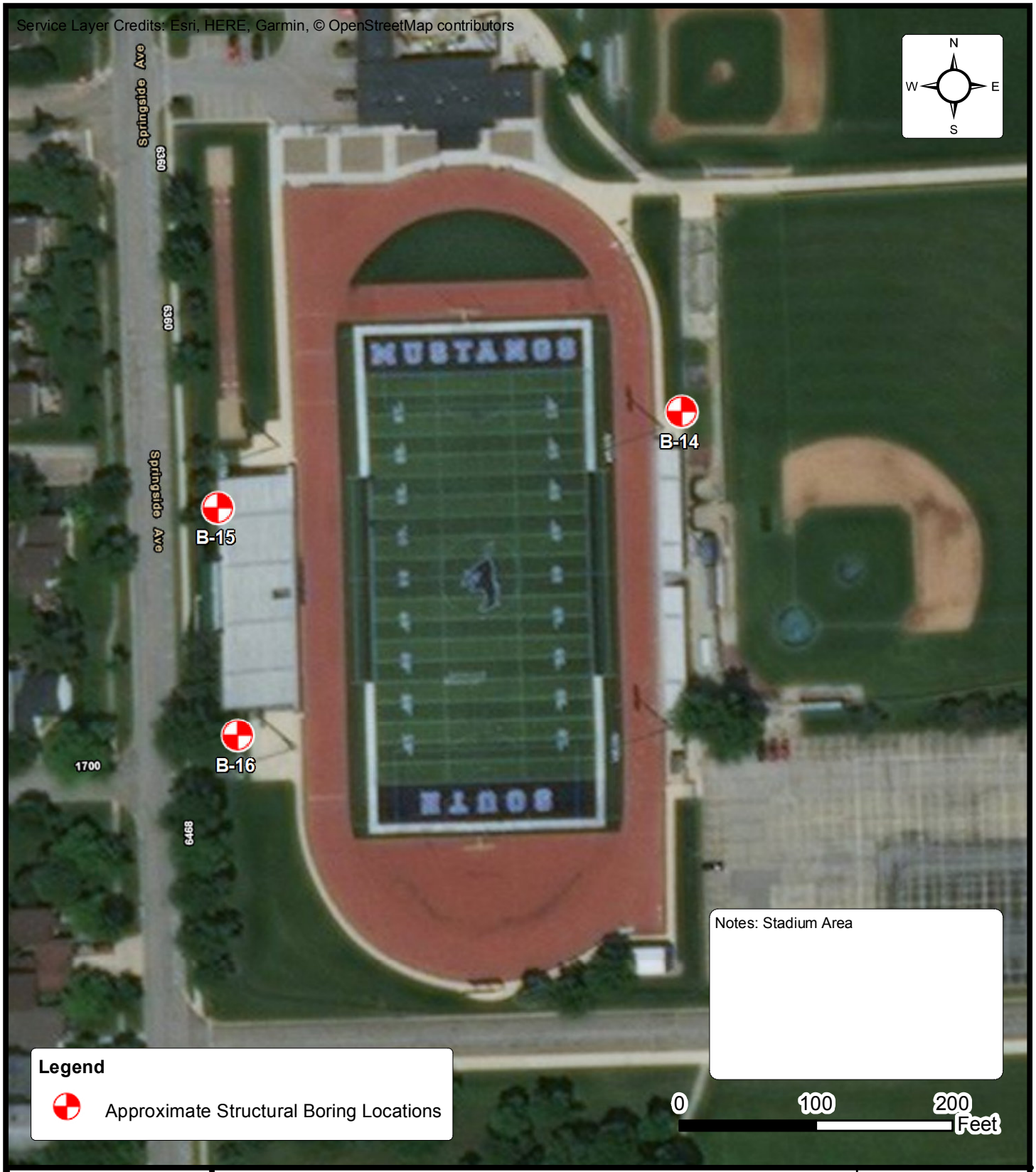


SITE LOCATION DIAGRAM
SOUTH HIGH SCHOOL RENOVATIONS

1436 NORFOLK STREET, DOWNERS GROVE, ILLINOIS

COMMUNITY HIGH SCHOOL DISTRICT 99

ENGINEER	BMT
SCALE	1 " = 1500'
PROJECT NO.	8421-C1
SHEET	1 OF 1
DATE	8/23/2018

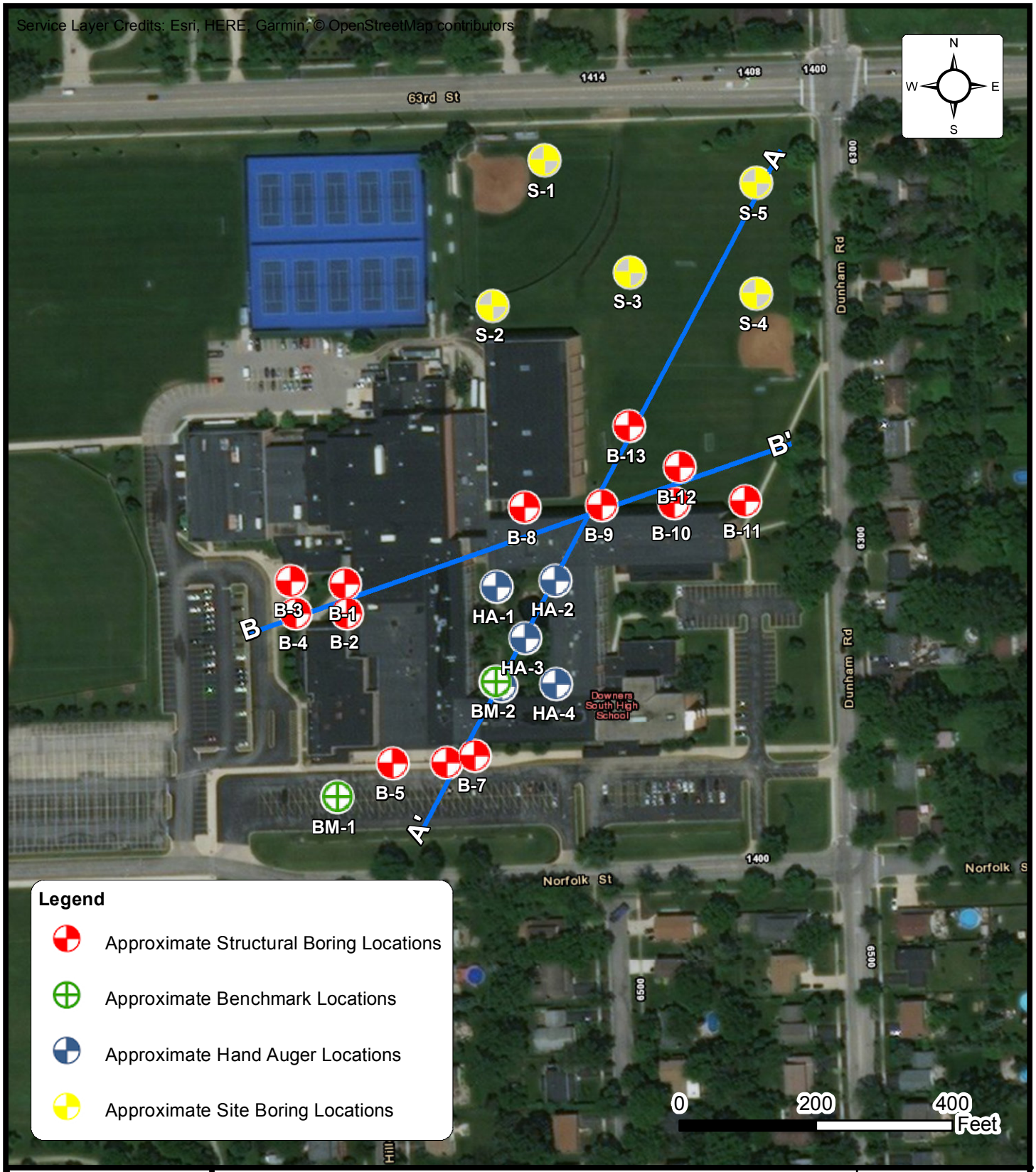


BORING LOCATION DIAGRAM
SOUTH HIGH SCHOOL RENOVATIONS

1436 NORFOLK STREET, DOWNERS GROVE, ILLINOIS

COMMUNITY HIGH SCHOOL DISTRICT 99

ENGINEER	BMT
SCALE	1 " = 100 '
PROJECT NO.	8421-C1
SHEET	1 OF 1
DATE	8/23/2018



BORING LOCATION DIAGRAM
SOUTH HIGH SCHOOL RENOVATIONS

1436 NORFOLK STREET, DOWNERS GROVE, ILLINOIS

COMMUNITY HIGH SCHOOL DISTRICT 99

ENGINEER	BMT
SCALE	1 " = 200 '
PROJECT NO.	8421-C1
SHEET	1 OF 1
DATE	8/23/2018

APPENDIX B – Field Operations

Reference Notes for Boring Logs
Boring Logs B-8 through B-16, S-1 through S-5 and HA-1 through HA-5
Subsurface Profiles (Sections A-A' and B-B')
In-Situ Pressuremeter Testing Results
Refraction Microtremor (ReMi) Testing Results

REFERENCE NOTES FOR BORING LOGS

MATERIAL[1,2]	
	ASPHALT
	CONCRETE
	GRAVEL
	TOPSOIL
	VOID
	BRICK
	AGGREGATE BASE COURSE
	FILL[3] MAN-PLACED SOILS
GW	**WELL-GRADED GRAVEL** gravel-sand mixtures, little or no fines
GP	**POORLY-GRADED GRAVEL** gravel-sand mixtures, little or no fines
GM	**SILTY GRAVEL** gravel-sand-silt mixtures
GC	**CLAYEY GRAVEL** gravel-sand-clay mixtures
SW	**WELL-GRADED SAND** gravelly sand, little or no fines
SP	**POORLY-GRADED SAND** gravelly sand, little or no fines
SM	**SILTY SAND** sand-silt mixtures
SC	**CLAYEY SAND** sand-clay mixtures
ML	**SILT** non-plastic to medium plasticity
MH	**ELASTIC SILT** high plasticity
CL	**LEAN CLAY** low to medium plasticity
CH	**FAT CLAY** high plasticity
OL	**ORGANIC SILT or CLAY** non-plastic to low plasticity
OH	**ORGANIC SILT or CLAY** high plasticity
PT	**PEAT** highly organic soils

DRILLING SAMPLING SYMBOLS & ABBREVIATIONS			
SS	Split Spoon Sampler	PM	Pressuremeter Test
ST	Shelby Tube Sampler	RD	Rock Bit Drilling
WS	Wash Sample	RC	Rock Core, NX, BX, AX
BS	Bulk Sample of Cuttings	REC	Rock Sample Recovery %
PA	Power Auger (no sample)	RQD	Rock Quality Designation %
HSA	Hollow Stem Auger		

PARTICLE SIZE IDENTIFICATION		
DESIGNATION		**PARTICLE SIZES**
Boulders		12 inches (300 mm) or larger
Cobbles		3 inches to 12 inches (75 mm to 300 mm)
Gravel:	Coarse	¾ inch to 3 inches (19 mm to 75 mm)
	Fine	4.75 mm to 19 mm (No. 4 sieve to ¾ inch)
Sand:	Coarse	2.00 mm to 4.75 mm (No. 10 to No. 4 sieve)
	Medium	0.425 mm to 2.00 mm (No. 40 to No. 10 sieve)
	Fine	0.074 mm to 0.425 mm (No. 200 to No. 40 sieve)
Silt & Clay ("Fines")		<0.074 mm (smaller than a No. 200 sieve)

COHESIVE SILTS & CLAYS		
UNCONFINED COMPRESSIVE STRENGTH, Q_P[4]	**SPT[5] (BPF)**	**CONSISTENCY[7] (COHESIVE)**
<0.25	<3	Very Soft
0.25 - <0.50	3 - 4	Soft
0.50 - <1.00	5 - 8	Medium Stiff
1.00 - <2.00	9 - 15	Stiff
2.00 - <4.00	16 - 30	Very Stiff
4.00 - 8.00	31 - 50	Hard
>8.00	>50	Very Hard

GRAVELS, SANDS & NON-COHESIVE SILTS	
SPT[5]	**DENSITY**
<5	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
>50	Very Dense

RELATIVE AMOUNT[7]	COARSE GRAINED (%)	FINE GRAINED (%)
Trace	<5	<5
Dual Symbol *(ex: SW-SM)*	10	10
With	15 - 20	15-25
Adjective *(ex: "Silty")*	25 - <50	30 - <50

WATER LEVELS[6]		
	WL	Water Level (WS)(WD)
		(WS) While Sampling
		(WD) While Drilling
	SHW	Seasonal High WT
	ACR	After Casing Removal
	SWT	Stabilized Water Table
	DCI	Dry Cave-In
	WCI	Wet Cave-In

[1] *Classifications and symbols per ASTM D 2488-09 (Visual-Manual Procedure) unless noted otherwise.*

[2] *To be consistent with general practice, "POORLY GRADED" has been removed from GP, GP-GM, GP-GC, SP, SP-SM, SP-SC soil types on the boring logs.*

[3] *Non-ASTM designations are included in soil descriptions and symbols along with ASTM symbol [Ex: (SM-**FILL**)].*

[4] *Typically estimated via pocket penetrometer or Torvane shear test and expressed in tons per square foot (tsf).*

[5] *Standard Penetration Test (SPT) refers to the number of hammer blows (blow count) of a 140 lb. hammer falling 30 inches on a 2 inch OD split spoon sampler required to drive the sampler 12 inches (ASTM D 1586). "N-value" is another term for "blow count" and is expressed in blows per foot (bpf).*

[6] *The water levels are those levels actually measured in the borehole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in granular soils. In clay and cohesive silts, the determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally employed.*

[7] *Minor deviation from ASTM D 2488-09.*

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	B-1	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

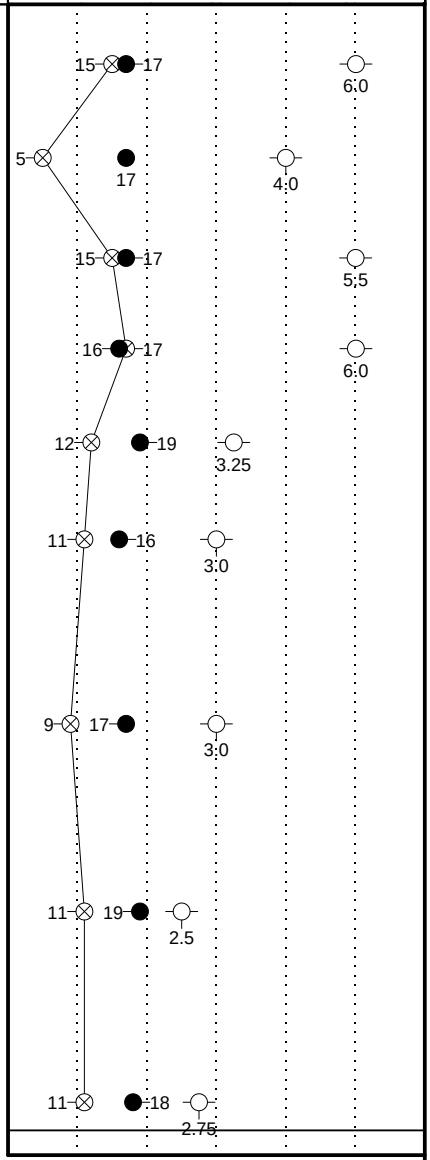
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 103.1 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [12"] (+/-)			
	S-1	SS	14	14	(CL) FILL, LEAN CLAY, trace gravel, trace silt, dark brown, moist, hard			10 7 8
	S-2	SS	14	10	(CL) LEAN CLAY, trace gravel, trace sand, brown and gray, moist, hard		100	2 2 3
5	S-3	SS	18	5				4 5 10
	S-4	SS	16	16	(CL) LEAN CLAY, trace gravel, trace sand, gray, moist, hard to very stiff		95	4 7 10
10	S-5	SS	16	16				3 5 7
	S-6	SS	18	16			90	3 5 6
15								
	S-7	SS	16	18			85	2 3 6
20								
	S-8	SS	16	18		▽	80	3 5 6
25								
	S-9	SS	18	18			75	4 5 6
30					END OF BORING @ 30'			



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 23.5 WS ☒ WD ☐	BORING STARTED 07/30/18	CAVE IN DEPTH @ 15.0'
WL(SHW) WL(ACR) DRY	BORING COMPLETED 07/30/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	B-2	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

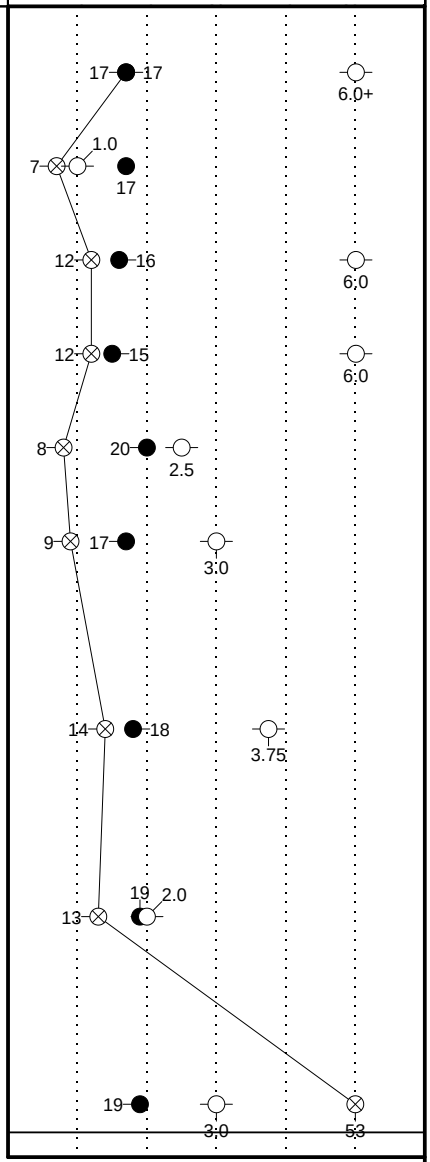
STANDARD PENETRATION BLOWS/FT

ENGLISH UNITS

BOTTOM OF CASING ▰ LOSS OF CIRCULATION ⟩⟨

SURFACE ELEVATION 102.7 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [12"] (+/-)			
	S-1	SS	18	16	(CL) FILL, LEAN CLAY, trace gravel, trace sand, trace silt, dark brown, moist, hard		100	7 9 8
	S-2	SS	18	16				3 4 3
5					(CL) LEAN CLAY, trace gravel, trace silt, brown and gray, moist, stiff to hard			
	S-3	SS	18	18			95	3 5 7
	S-4	SS	18	14	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, gray, moist, hard to very stiff			3 4 8
10								
	S-5	SS	18	18			90	3 3 5
	S-6	SS	18	18				2 3 6
15								
							85	
	S-7	SS	18	18				3 5 9
20								
							80	
	S-8	SS	18	18				3 5 8
25								
							75	
	S-9	SS	18	18				6 34 19
30					END OF BORING @ 30'			



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 17.5 WS ☐ WD ☒	BORING STARTED 08/01/18	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/01/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	B-3	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 103.2 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	ELEVATION (FT)	BLOWS/6"
0						
					Concrete [4"] (+/-)	
					Gravel Base [6"] (+/-)	
	S-1	SS	18	16	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, dark brown to gray and brown, moist, very stiff to hard	3 4 4
	S-2	SS	18	16		2 3 4
5	S-3	SS	18	18		4 5 6
	S-4	SS	18	16		3 6 8
10	S-5	SS	18	18	(CL) LEAN CLAY, trace gravel, trace sand, gray, moist, very stiff to hard	3 4 6
	S-6	SS	18	16		2 5 5
15	S-7	SS	18	18		4 6 8
20	S-8	SS	18	14		3 5 7
25	S-9	SS	18	18		4 6 14
30					END OF BORING @ 30'	

WATER LEVELS

100 95 90 85 80 75

Depth	Blows/6"	Water Content%	Penetrometer TONS/FT^2
0	3 4 4	19	2.75
		8	
	2 3 4	18	3.0
		7	
5	4 5 6	17	4.0
		11	
	3 6 8	17	5.5
		14	
10	3 4 6	19	3.5
		10	
	2 5 5	18	3.0
		10	
15			
	4 6 8	16	5.0
		14	
20			
	3 5 7	18	2.5
		12	
25			
	4 6 14	20	2.5
		17	
30			

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 22 WS ☐ WD ☒	BORING STARTED 08/04/18	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/04/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	B-4	1 OF 2

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

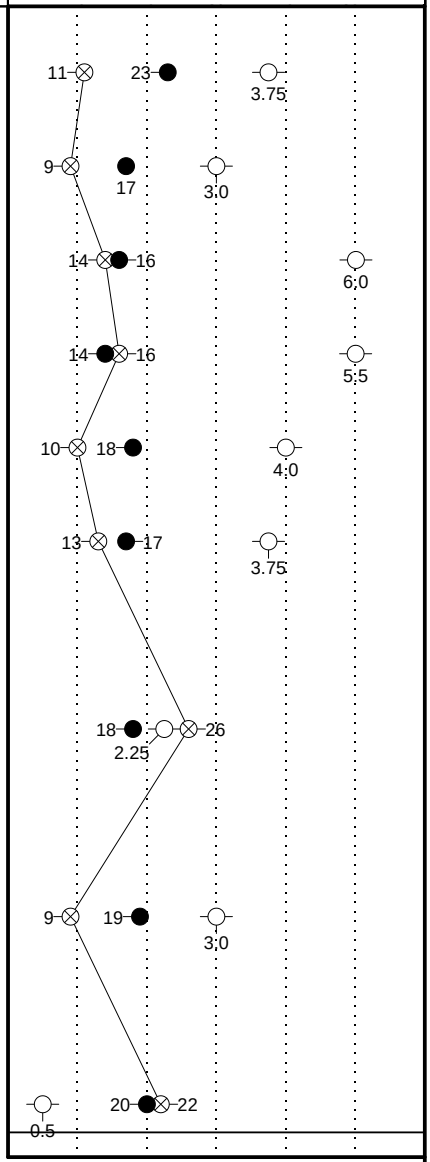
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 103.3 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Concrete [4"] (+/-)			
					Gravel Base [6"] (+/-)			
	S-1	SS	18	16	(CL) FILL, LEAN CLAY, trace gravel, trace sand, trace silt, dark brown, moist, very stiff			5 6 5
	S-2	SS	18	16	(CL) LEAN CLAY, trace gravel, trace silt, brown and gray, moist, very stiff to hard		100	4 4 5
5	S-3	SS	18	16				3 6 8
	S-4	SS	18	18			95	4 7 9
10	S-5	SS	18	16	(CL) LEAN CLAY, trace gravel, trace sand, gray, moist, hard to very stiff			3 4 6
	S-6	SS	18	16			90	3 5 8
15	S-7	SS	18	0			85	12 14 12
20	S-8	SS	18	18			80	3 4 5
25	S-9	SS	18	18			75	4 11 11
30					(SP) SAND WITH GRAVEL, trace clay, gray, wet, medium dense			



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 11 WS ☒ WD ☐	BORING STARTED 07/30/18	CAVE IN DEPTH @ 11'
WL(SHW) WL(ACR) 10	BORING COMPLETED 07/30/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	B-4	2 OF 2

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 103.3 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"

END OF BORING @ 30'

ELEVATION (FT): 70, 65, 60, 55, 50, 45

DEPTH (FT): 35, 40, 45, 50, 55, 60

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 11 WS ☒ WD ☐	BORING STARTED 07/30/18	CAVE IN DEPTH @ 11'
WL(SHW) WL(ACR) 10	BORING COMPLETED 07/30/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	B-5	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 103.1 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Concrete [4.5"] (+/-)			
					Gravel Base [6.5"] (+/-)			
	S-1	SS	18	14	(SP) FILL, SAND WITH GRAVEL, trace silt, dark brown, moist, medium dense			6 6 5
	S-2	SS	18	18	(CL) LEAN CLAY, trace gravel, trace sand, brown and gray, moist, very stiff to hard		100	2 3 4
5	S-3	SS	18	18				4 5 6
	S-4	SS	18	16			95	3 3 4
10	S-5	SS	18	6				5 9 13
	S-6	SS	18	18	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, gray, moist, hard to very stiff		90	5 7 9
15	S-7	SS	18	18			85	3 5 7
20	S-8	SS	18	18			80	6 7 9
25					END OF BORING @ 25'		75	
30								

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 08/04/18	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/04/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	B-6	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 103.0 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0							
						Concrete [6"] (+/-)	
						Gravel Base [8"] (+/-)	
	S-1	SS	18	12		(CL) LEAN CLAY, trace gravel, trace sand, trace silt, dark brown to gray and brown, moist, hard to very stiff	1 2 4
						100	
	S-2	SS	18	18			3 3 4
5							
	S-3	SS	18	16			3 3 5
						95	
	S-4	SS	18	16			3 3 9
10							
	S-5	SS	18	18			4 6 9
						(CL) LEAN CLAY, trace gravel, trace sand, trace silt, gray, moist, very stiff	
						90	
	S-6	SS	18	18			3 6 5
15							
						85	
	S-7	SS	18	18			3 4 6
20							
						80	
	S-8	SS	18	18			3 5 6
25							
						END OF BORING @ 25'	
						75	
30							

Penetrometer / standard penetration values plotted on the profile:

Depth (FT)	Standard penetration BLOWS/FT	Penetrometer TONS/FT^2
0	6 – 17	4.25
5	7 – 14	2.25
10	8 – 16	3.0
15	12 – 17	5.25
20	15 – 19	6.0+
25	11 – 17	3.0
	10 – 16	3.5
	11 – 17	3.25

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 08/04/18	CAVE IN DEPTH @ 15'
WL(SHW) WL(ACR)	BORING COMPLETED 08/04/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	B-7	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC%

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

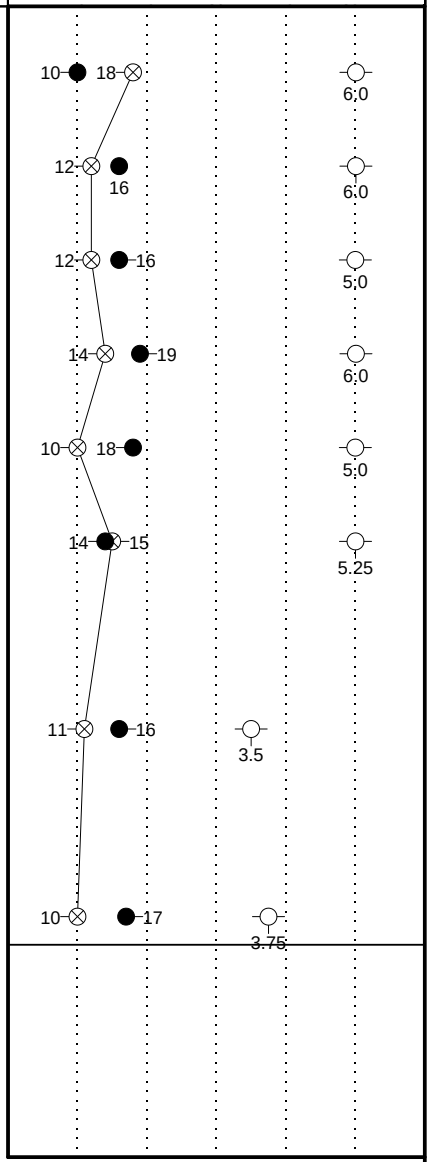
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 103.3 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [12"] (+/-)			
	S-1	SS	18	14	(CL) LEAN CLAY, trace gravel, trace sand, brown to gray and brown, moist, hard			7 8 10
							100	
	S-2	SS	18	16				4 6 6
5								
	S-3	SS	18	18				3 5 7
							95	
	S-4	SS	18	16				3 7 7
10								
	S-5	SS	18	16	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, gray, moist, hard to very stiff			3 4 6
							90	
	S-6	SS	18	14				7 7 8
15								
							85	
	S-7	SS	18	16				5 5 6
20								
							80	
	S-8	SS	18	16				2 3 7
25					END OF BORING @ 25'			
							75	
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 08/04/18	CAVE IN DEPTH @ 15'
WL(SHW) WL(ACR)	BORING COMPLETED 08/04/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	B-8	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

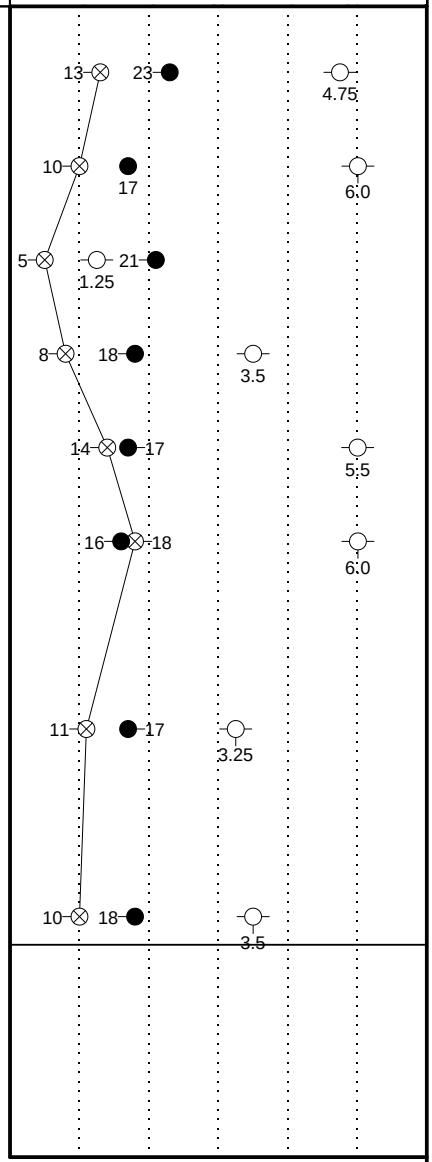
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 105.7 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [12"] (+/-)		105	
	S-1	SS	18	12	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, brown to gray and brown, moist, hard to stiff			3 5 8
	S-2	SS	18	16				4 5 5
5	S-3	SS	18	12			100	3 2 3
	S-4	SS	18	16				2 3 5
10	S-5	SS	18	18			95	3 6 8
	S-6	SS	18	16	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, gray, moist, hard to very stiff			3 8 10
15	S-7	SS	18	16			90	3 4 7
20	S-8	SS	18	16			85	3 4 6
25					END OF BORING @ 25'		80	
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 08/04/18	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/04/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	B-9	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

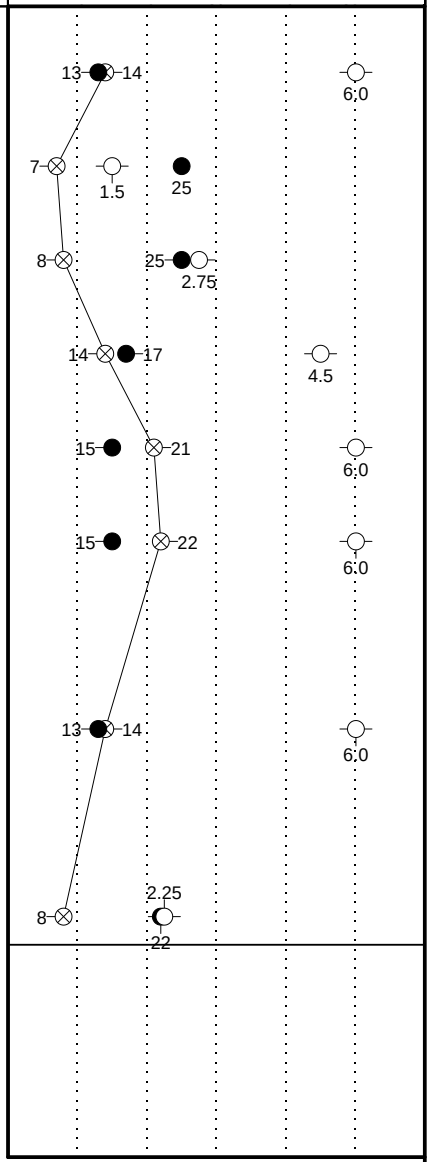
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 105.5 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [12"] (+/-)		105	
	S-1	SS	18	14	(CL) POSSIBLE FILL, LEAN CLAY, trace gravel, trace sand, trace silt, dark brown, moist, hard to stiff			7 8 6
	S-2	SS	18	6				3 4 3
5					(CL) LEAN CLAY, trace gravel, trace sand, trace silt, brown to gray and brown, moist, very stiff to hard		100	
	S-3	SS	18	14				4 3 5
	S-4	SS	18	12				2 7 7
10							95	
	S-5	SS	18	16				4 8 13
	S-6	SS	18	16				5 10 12
15					(CL) LEAN CLAY, gray, moist, hard to very stiff		90	
	S-7	SS	18	16				4 5 9
20							85	
	S-8	SS	18	16				2 4 4
25					END OF BORING @ 25'		80	
30							75	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 08/04/18	CAVE IN DEPTH @ 14'
WL(SHW) WL(ACR)	BORING COMPLETED 08/04/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	B-10	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

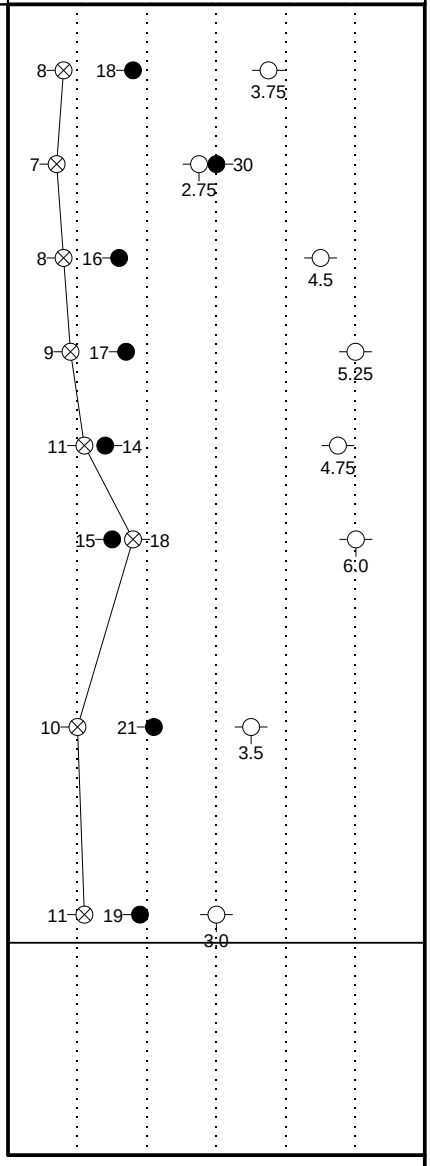
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 105.6 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [12"] (+/-)		105	
	S-1	SS	18	10	(CL) FILL, LEAN CLAY, trace gravel, trace sand, trace silt, dark brown, moist, very stiff			4 4 4
	S-2	SS	18	6	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, black, moist, very stiff, Buried Topsoil			2 3 4
5					(CL) LEAN CLAY, trace gravel, trace sand, trace silt, brown and gray, moist, hard		100	
	S-3	SS	18	14				3 3 5
	S-4	SS	18	16				3 3 6
10							95	
	S-5	SS	18	16				2 4 7
	S-6	SS	18	16				4 8 10
15					(CL) LEAN CLAY, trace gravel, trace sand, trace silt, gray, moist, very stiff		90	
	S-7	SS	18	18				2 4 6
20							85	
	S-8	SS	18	18				3 4 7
25					END OF BORING @ 25'		80	
30							75	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 08/04/18	CAVE IN DEPTH @ 16'
WL(SHW) WL(ACR)	BORING COMPLETED 08/04/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	B-11	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

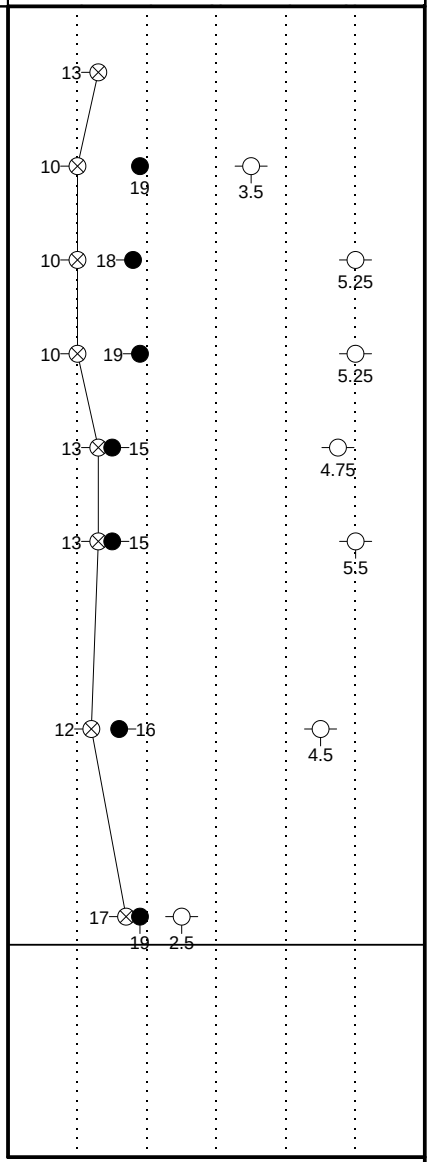
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 105.9 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [12"] (+/-)		105	
	S-1	SS	18	5	(SP) FILL, SAND WITH GRAVEL, trace silt, dark brown, moist, medium dense			8 9 4
					(CL) LEAN CLAY, trace gravel, trace silt, brown to gray and brown, moist, very stiff to hard			
	S-2	SS	18	16			100	2 4 6
5								
	S-3	SS	18	16				3 5 5
	S-4	SS	18	16				3 4 6
10							95	
	S-5	SS	18	16	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, gray, moist, hard to very stiff			3 6 7
	S-6	SS	18	14				3 5 8
15							90	
	S-7	SS	18	16				3 4 8
20							85	
	S-8	SS	18	0				4 6 11
25					END OF BORING @ 25'		80	
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 08/04/18	CAVE IN DEPTH @ 15'
WL(SHW) WL(ACR)	BORING COMPLETED 08/04/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	B-12	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

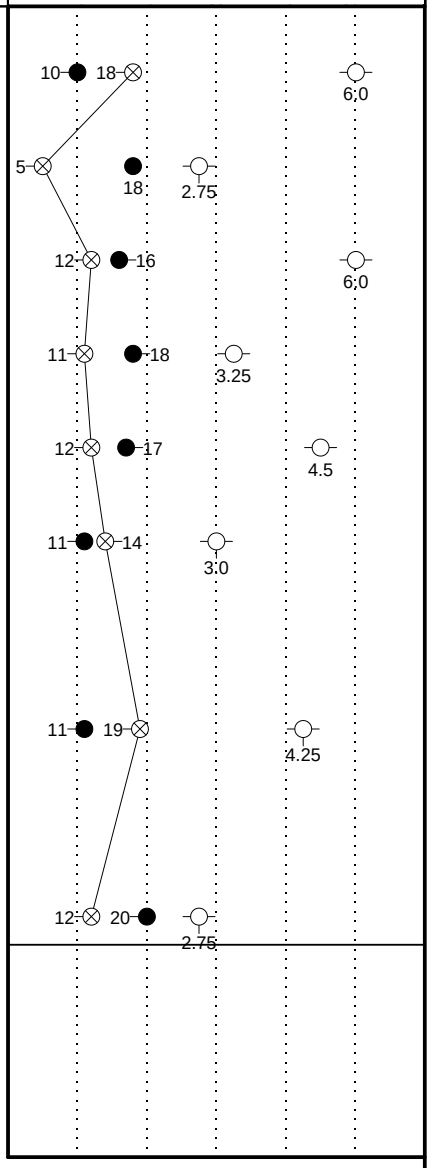
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 103.5 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [12"] (+/-)			
	S-1	SS	18	12	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, brown and gray, moist, hard to very stiff			8 9 9
	S-2	SS	18	10			100	2 2 3
5	S-3	SS	18	16				3 6 6
	S-4	SS	18	18			95	3 4 7
10	S-5	SS	18	16				3 4 8
	S-6	SS	18	18	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, gray, moist, very stiff to hard		90	3 5 9
15								
	S-7	SS	18	18			85	8 9 10
20								
	S-8	SS	18	16			80	4 5 7
25					END OF BORING @ 25'			
30							75	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 08/04/18	CAVE IN DEPTH @ 14'
WL(SHW) WL(ACR)	BORING COMPLETED 08/04/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	B-13	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT²

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

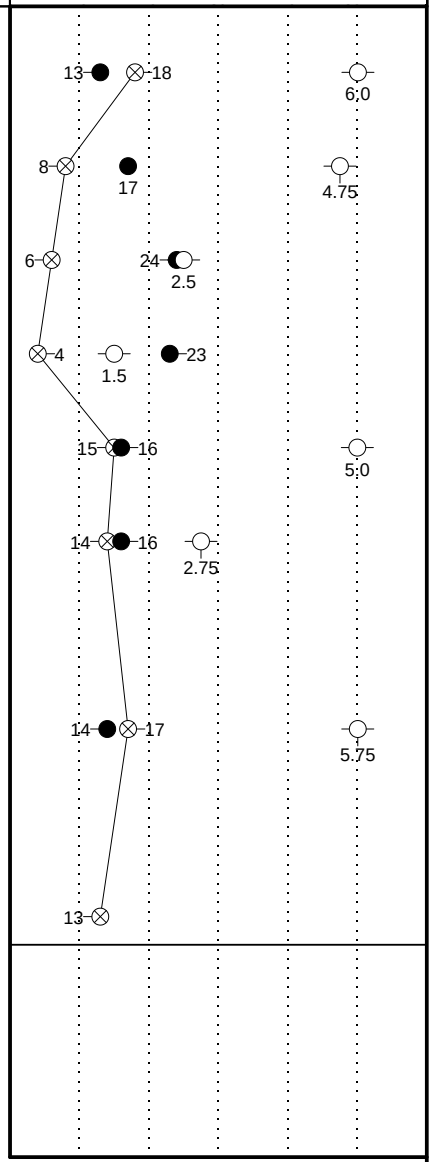
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 102.7 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [18"] (+/-)			
	S-1	SS	18	18	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, brown and gray, moist, hard to stiff		100	6 8 10
	S-2	SS	18	16				3 4 4
5	S-3	SS	18	16			95	2 3 3
	S-4	SS	18	16				2 2 2
10	S-5	SS	18	16			90	5 6 9
	S-6	SS	18	12	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, gray, moist, hard to very stiff			3 6 8
15							85	
	S-7	SS	18	10				5 7 10
20					(SP) SAND WITH GRAVEL, gray, wet, medium dense		80	
	S-8	SS	18	12				5 6 7
25					END OF BORING @ 25'		75	
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 08/04/18	CAVE IN DEPTH @ 15'
WL(SHW) WL(ACR)	BORING COMPLETED 08/04/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	B-14	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Downers Grove South High School Renovations	

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

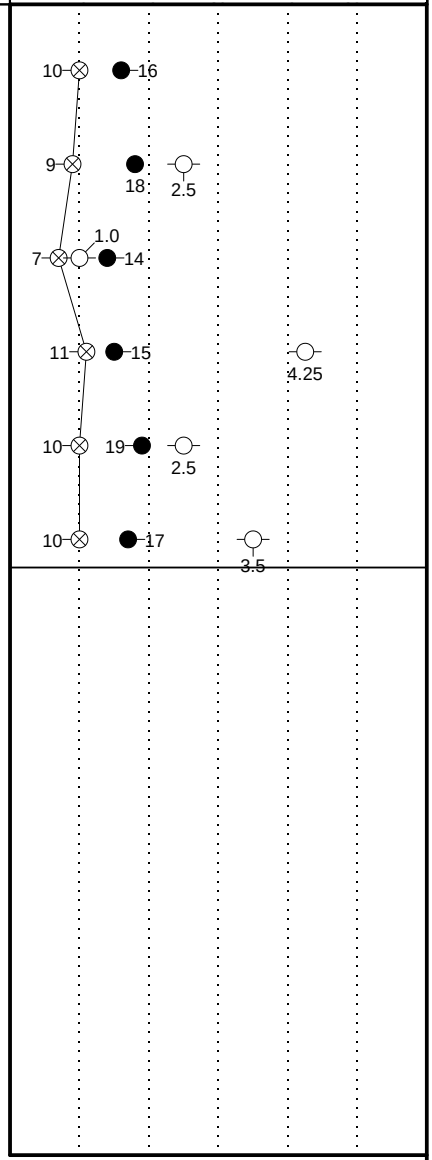
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 102.6 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [12"] (+/-)			
	S-1	SS	18	16	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, brown and gray, moist, very stiff, Sample at 2.5 very dry		100	4 4 6
	S-2	SS	18	16				3 4 5
5								
	S-3	SS	18	18	(CL) SANDY LEAN CLAY, trace gravel, brown, moist, stiff		95	3 3 4
	S-4	SS	18	16	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, gray, moist, hard to very stiff			3 5 6
10								
	S-5	SS	18	8			90	5 4 6
	S-6	SS	18	3				3 4 6
15					END OF BORING @ 15'		85	
20							80	
25							75	
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 08/04/18	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/04/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	B-15	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

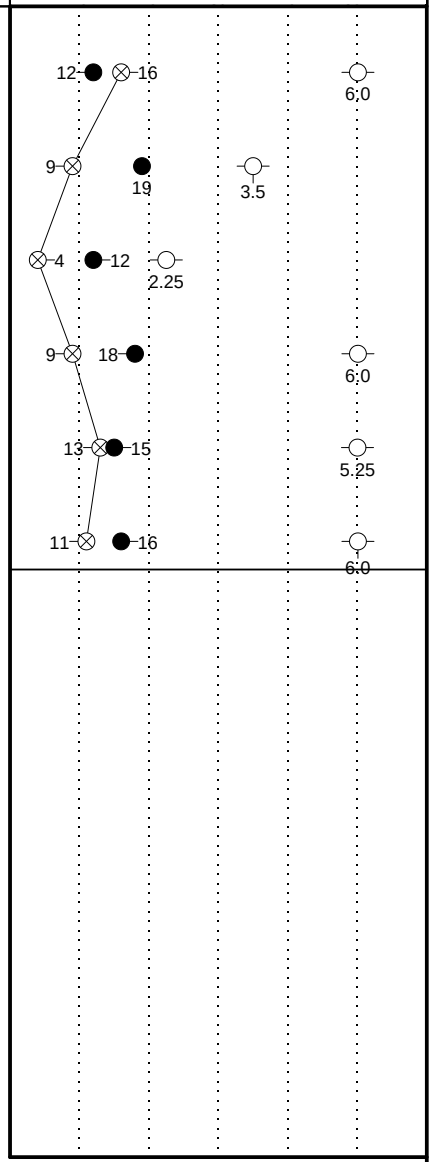
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 102.4 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [12"] (+/-)			
	S-1	SS	18	16	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, brown and gray, moist, hard to very stiff		100	7 7 9
	S-2	SS	18	16				4 4 5
5								
	S-3	SS	18	14			95	2 2 2
	S-4	SS	18	16	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, gray, moist, hard			4 4 5
10								
	S-5	SS	18	16			90	4 6 7
	S-6	SS	18	16				3 5 6
15					END OF BORING @ 15'		85	
20							80	
25							75	
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 08/04/18	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/04/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	B-16	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

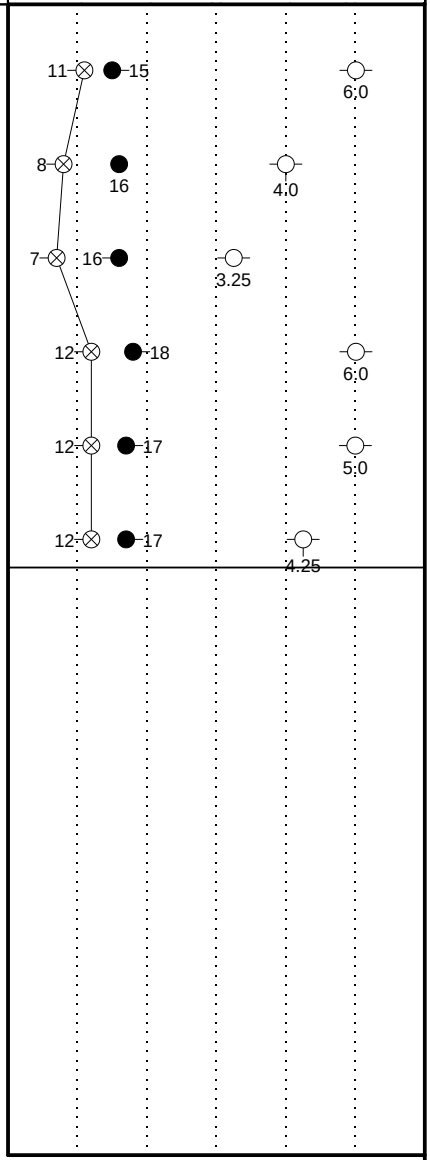
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 102.1 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [12"] (+/-)			
	S-1	SS	18	12	(CL) POSSIBLE FILL, LEAN CLAY, dark brown, moist, hard		100	5 5 6
	S-2	SS	18	16	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, brown and gray, moist, hard to very stiff			3 5 3
5	S-3	SS	18	16			95	3 3 4
	S-4	SS	18	18				3 4 8
10	S-5	SS	18	18	(CL) LEAN CLAY, trace gravel, trace sand, gray, moist, hard		90	3 5 7
	S-6	SS	18	18				3 5 7
15					END OF BORING @ 15'		85	
20							80	
25							75	
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 08/04/18	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/04/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	HA-1	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

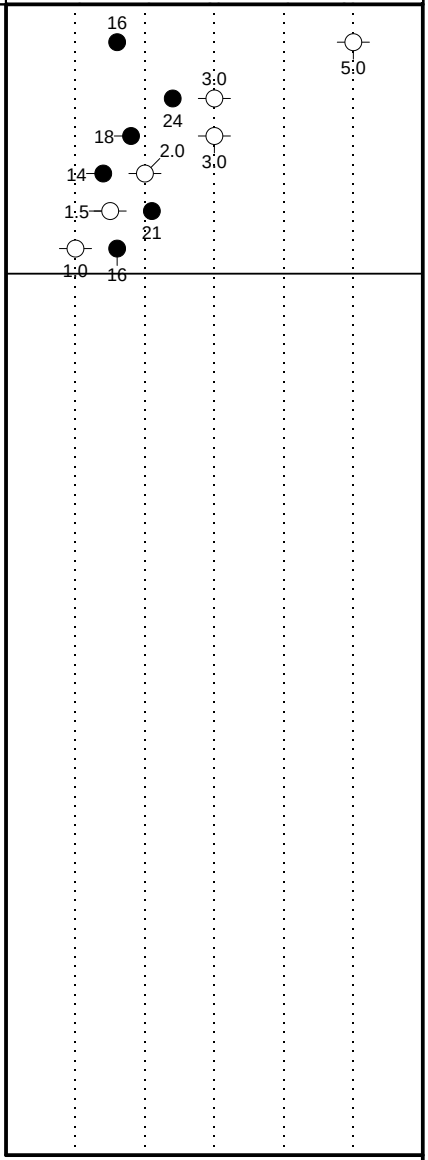
SURFACE ELEVATION 100.0 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	ELEVATION (FT)	BLOWS/6"
0					100	
	S-1	HA	0	12		
	S-2	HA	12	12		
	S-3	HA	12	12		
5	S-4	HA	12	12	95	
	S-5	HA	12	12		
	S-6	HA	12	12		
10					90	
15					85	
20					80	
25					75	
30					70	

Topsoil [12"] (+/-)

(CL) LEAN CLAY, trace gravel, trace sand, trace silt, brown and gray, moist, hard to stiff

END OF BORING @ 7.17'



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 08/04/18	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/04/18	HAMMER TYPE Auto
WL	RIG Hand Augers FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	HA-2	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 100.1 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [3"] (+/-)		100	
					(CL) LEAN CLAY, trace gravel, trace sand, trace silt, brown and gray, moist, hard			
	S-1	HA	24	24				
					AUGER REFUSAL @ 4'			
5							95	
10							90	
15							85	
20							80	
25							75	
30							70	

18 (●) 4.5 (○)

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 08/04/18	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/04/18	HAMMER TYPE Manual
WL	RIG Hand Augers FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	HA-3	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT²

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

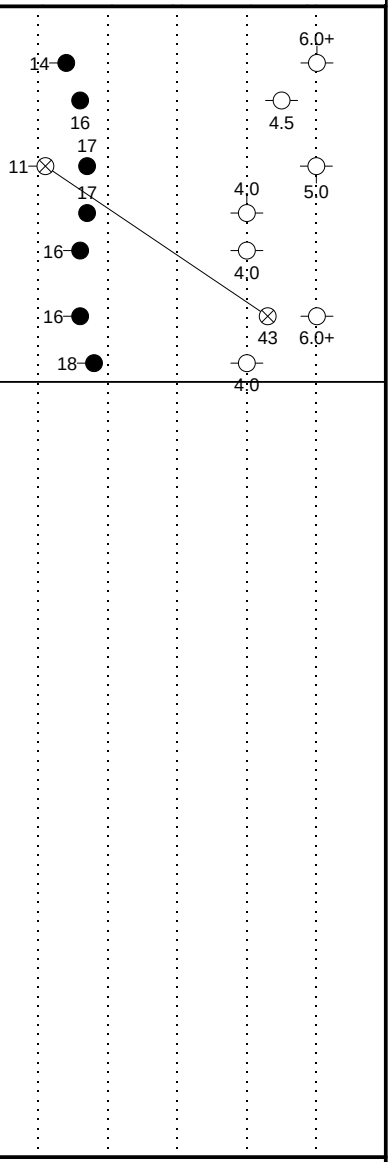
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 99.7 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [5"] (+/-)			
	S-1	HA	12	12	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, brown and gray, moist, hard			5
	S-2	HA	12	12				6
	S-3	SS	18	18				5
5	S-4	HA	12	12			95	
	S-5	HA	12	12				
	S-6	SS	18	18				10
	S-7	HA	12	12	(CL) LEAN CLAY, trace gravel, trace sand, gray, moist, hard			15
10					AUGER REFUSAL @ 10'		90	28
15							85	
20							80	
25							75	
30							70	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 08/04/18	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/04/18	HAMMER TYPE Manual
WL	RIG Hand Augers FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	HA-4	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 100.1 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	HA	12	12		100	
	S-2	HA	12	12			
	S-3	HA	12	12			
	S-4	HA	12	12			
5						95	
10						90	
15						85	
20						80	
25						75	
30						70	

Topsoil [8"] (+/-)

(CL) LEAN CLAY, trace gravel, trace sand, trace silt, brown and gray, moist, stiff to hard

AUGER REFUSAL @ 5'

Penetrometer values: 1.5, 28, 17, 4.0, 2.5, 17, 19, 2.0

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 08/04/18	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/04/18	HAMMER TYPE Manual
WL	RIG Hand Augers FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	HA-5	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT²

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

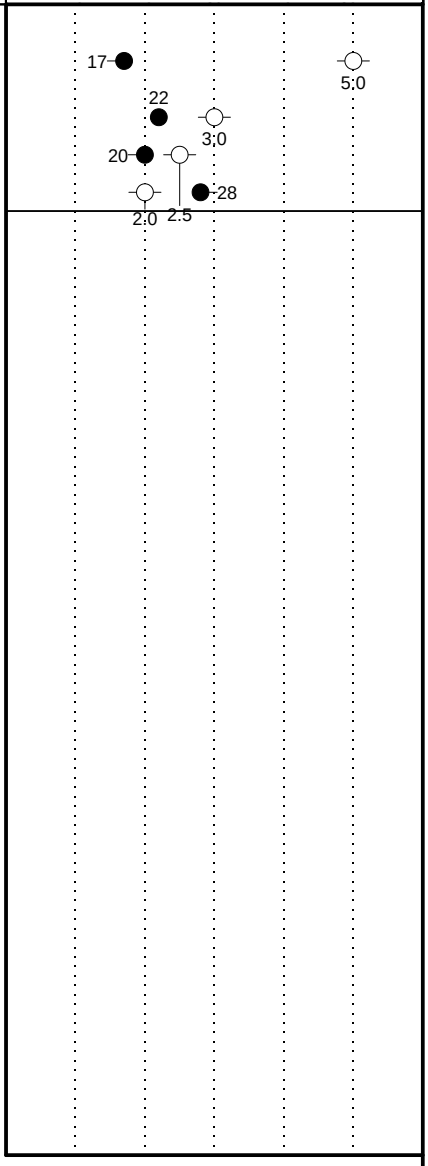
SURFACE ELEVATION 100.1 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0						100	
	S-1	HA	12	12			
	S-2	HA	12	12			
	S-3	HA	12	12			
5	S-4	HA	12	12		95	
10						90	
15						85	
20						80	
25						75	
30						70	

Topsoil [7"]

(CL) LEAN CLAY, trace gravel, trace sand, brown and gray, moist, hard to very stiff

AUGER REFUSAL @ 5.5'



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 08/04/18	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/04/18	HAMMER TYPE Auto
WL	RIG Hand Augers FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	S-1	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

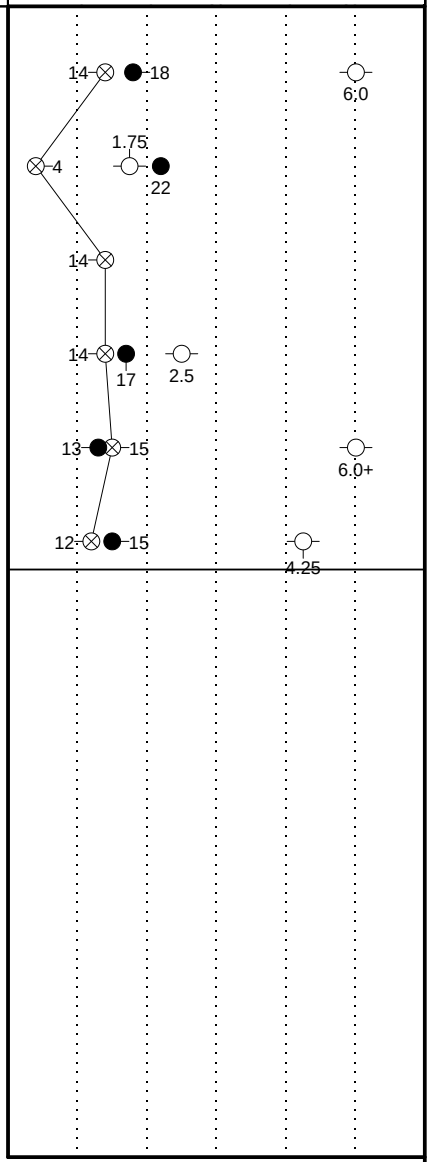
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 100.0 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [12"] (+/-)		100	
	S-1	SS	18	14	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, brown and gray, moist, hard to stiff			8 7 7
	S-2	SS	18	10				2 2 2
5							95	
	S-3	SS	18	5	(SC) CLAYEY SAND WITH GRAVEL, brown, moist, very loose			6 8 6
	S-4	SS	18	16	(CL) LEAN CLAY, trace gravel, brown, moist, very stiff			4 5 9
10							90	
	S-5	SS	18	16	(CL) LEAN CLAY, trace gravel, trace sand, gray, moist, hard			5 6 9
	S-6	SS	18	16				3 5 7
15					END OF BORING @ 15'		85	
20							80	
25							75	
30							70	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 07/30/18	CAVE IN DEPTH @ 15.0'
WL(SHW) WL(ACR)	BORING COMPLETED 07/30/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	S-2	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

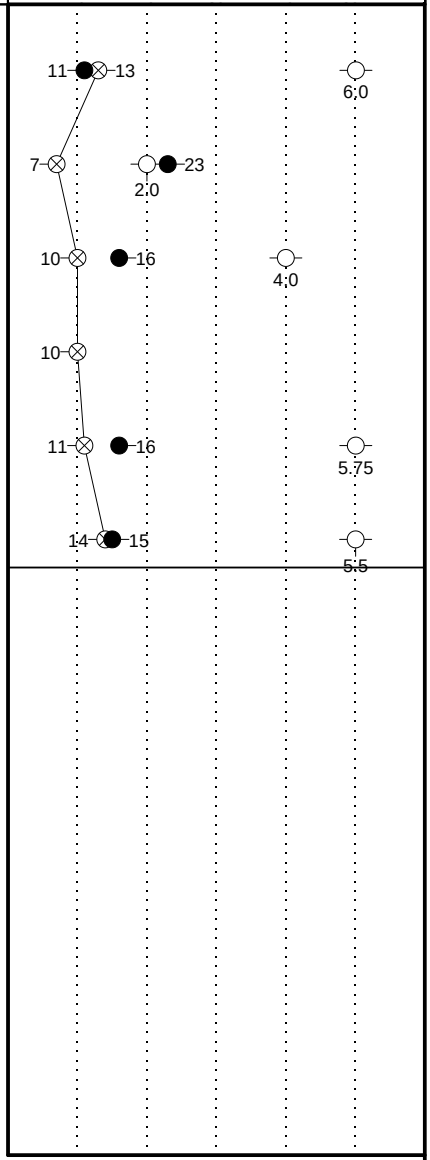
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 101.2 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [12"] (+/-)			
	S-1	SS	18	18	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, brown and gray, moist, hard to very stiff		100	7 7 6
	S-2	SS	18	14				3 3 4
5	S-3	SS	18	8			95	3 4 6
	S-4	SS	18	10	(SP-SC) SAND WITH CLAY, trace gravel, brown, moist, loose			3 3 7
10	S-5	SS	18	16	(CL) LEAN CLAY, trace gravel, trace sand, gray, moist, hard		90	3 5 6
	S-6	SS	18	16				4 6 8
15					END OF BORING @ 15'		85	
20							80	
25							75	
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 07/30/18	CAVE IN DEPTH @ 10'
WL(SHW) WL(ACR)	BORING COMPLETED 07/30/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	S-3	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

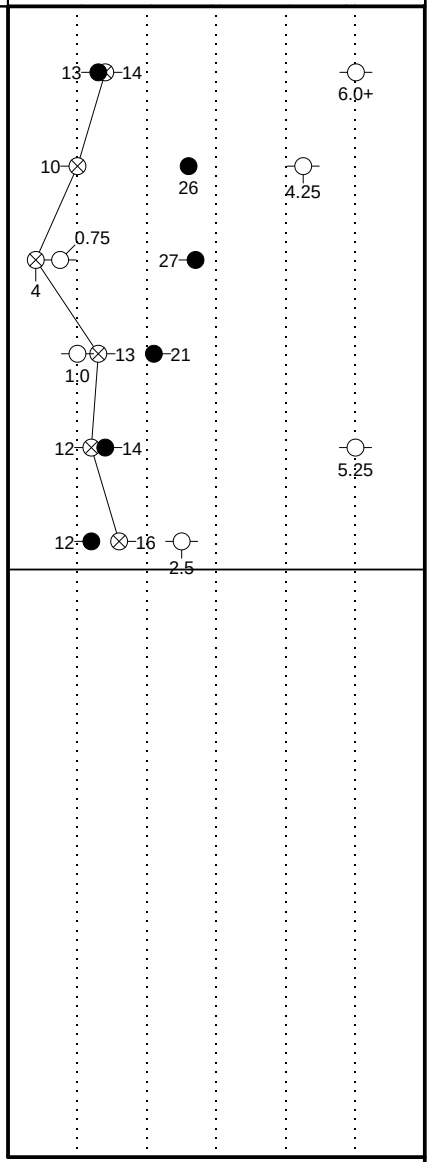
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 102.6 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [12"] (+/-)			
	S-1	SS	18	14	(CL) POSSIBLE FILL, LEAN CLAY, trace gravel, trace sand, dark brown and gray, moist, hard		100	5 6 8
	S-2	SS	18	14				4 5 5
5					(CL) LEAN CLAY, trace gravel, trace sand, brown and gray, moist, firm			
	S-3	SS	18	16			95	2 2 2
	S-4	SS	18	12	(ML/CL) CLAYEY SILT, trace gravel, trace sand, gray, moist to wet, medium dense			2 3 10
10	S-5	SS	18	18	(CL) LEAN CLAY, trace gravel, trace sand, gray, moist, hard to very stiff		90	4 5 7
	S-6	SS	18	3				7 8 8
15					END OF BORING @ 15'		85	
20							80	
25							75	
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 07/30/18	CAVE IN DEPTH @ 15'
WL(SHW) WL(ACR)	BORING COMPLETED 07/30/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	S-4	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

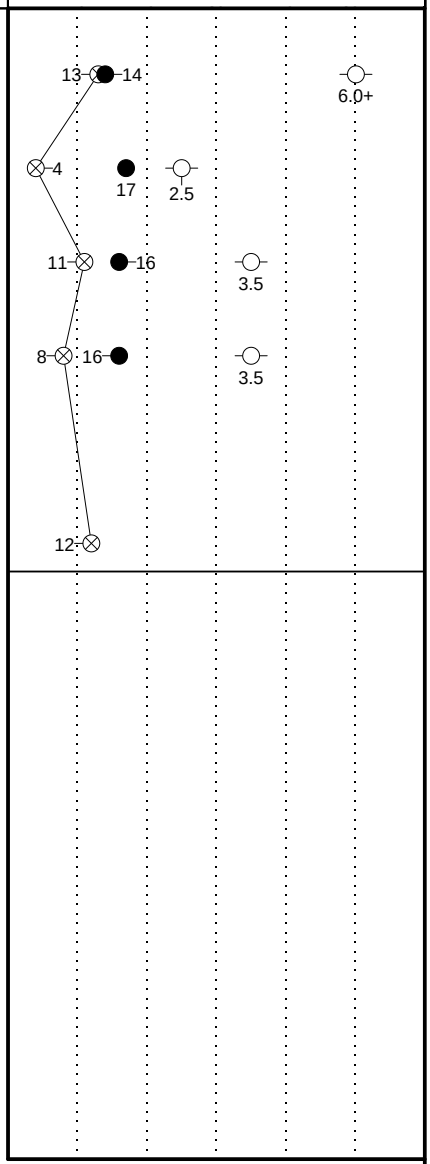
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 101.3 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [7"] (+/-)			
	S-1	SS	18	14	(CL) FILL, LEAN CLAY, trace gravel, trace sand, dark brown and gray, moist, hard		100	7 6 7
	S-2	SS	18	14	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, brown and gray, moist, very stiff			3 2 2
5	S-3	SS	18	6			95	4 6 5
	S-4	SS	18	14	(SP) SAND WITH GRAVEL, gray, wet, loose to medium dense	▼		3 3 5
10							90	
	S-5	SS	18	16				3 6 6
15					END OF BORING @ 15'		85	
20							80	
25							75	
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 11 WS ☐ WD ☒	BORING STARTED 07/30/18	CAVE IN DEPTH @ 11'
WL(SHW) WL(ACR) 10	BORING COMPLETED 07/30/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

CLIENT	Job #:	BORING #	SHEET
Community High School District 99	16:8421-C1	S-5	1 OF 1

PROJECT NAME: Downers Grove South High School Renovations

ARCHITECT-ENGINEER:

SITE LOCATION: 1436 Norfolk Street, Downers Grove, Illinois

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

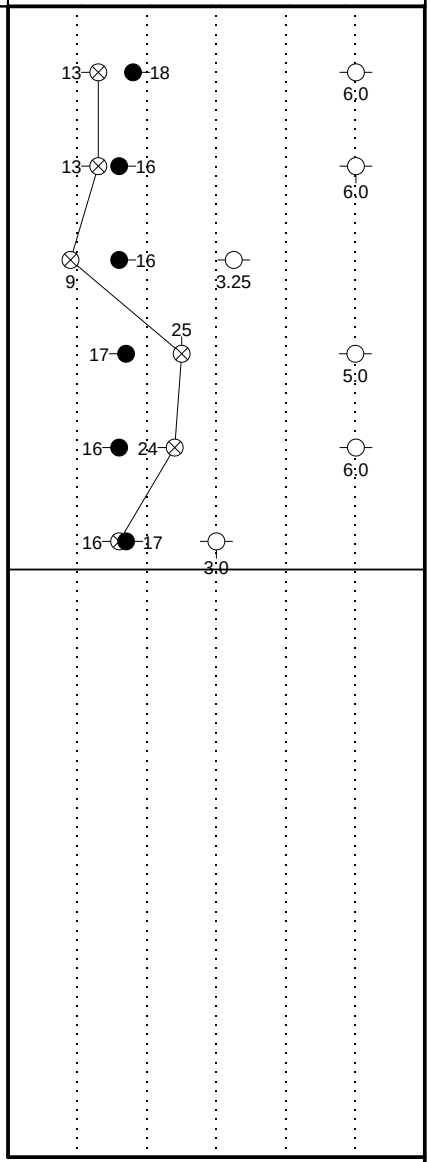
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 102.6 (+/-)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil [15"] (+/-)			
	S-1	SS	18	14	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, brown and gray, moist, hard to very stiff		100	6 6 7
	S-2	SS	18	16				4 6 7
5	S-3	SS	18	16			95	3 4 5
	S-4	SS	18	7				7 12 13
10	S-5	SS	18	18	(CL) LEAN CLAY, trace gravel, trace sand, trace silt, gray, moist, hard to very stiff		90	5 9 15
	S-6	SS	18	14				5 7 9
15					END OF BORING @ 15'		85	
20							80	
25							75	
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☒	BORING STARTED 07/30/18	CAVE IN DEPTH @ 15'
WL(SHW) WL(ACR)	BORING COMPLETED 07/30/18	HAMMER TYPE Auto
WL	RIG ATV FOREMAN Gabriel S.	DRILLING METHOD HSA

SOIL CLASSIFICATION LEGEND

GW - WELL GRADED GRAVEL
GM - SILTY GRAVEL
GP - POORLY GRADED GRAVEL
GC - CLAYEY GRAVEL
SW - WELL GRADED SAND
ML - LOW PLASTICITY SILT

ST - SHELBY TUBE
CL - LOW PLASTICITY CLAY
MH - HIGH PLASTICITY SILT
SM - SILTY SAND

RC - ROCK CORE
SP - POORLY GRADED SAND
SC - CLAYEY SAND
CH - HIGH PLASTICITY CLAY

PM - PRESSURE METER
OH - HIGH PLASTICITY ORGANIC SILTS AND CLAYS
OL - LOW PLASTICITY ORGANIC SILTS AND CLAY
PT - PEAT

NOTE: NUMBERS IMMEDIATELY TO THE LEFT OF THE BORING PROFILE ARE SPT-N VALUES.
WR - WEATHERED ROCK
PWR - PARTIALLY WEATHERED ROCK
- FILL
- POSSIBLE FILL
- PROBABLE FILL

SURFACE MATERIALS

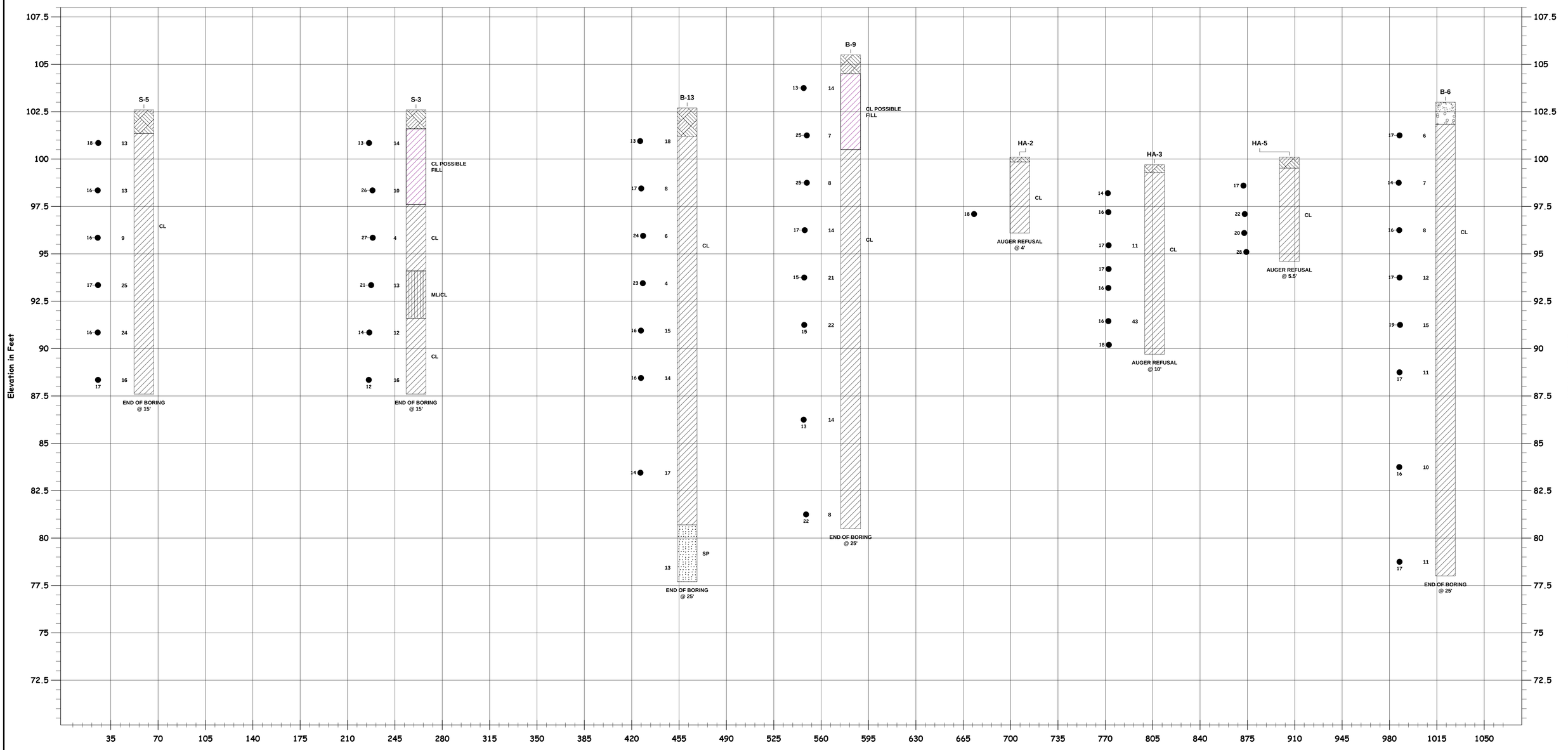
TOPSOIL
ASPHALT
GRAVEL
CONCRETE
VOID

ROCK TYPES

IGNEOUS
METAMORPHIC
SEDIMENTARY

SYMBOL LEGEND

WATER LEVEL - DURING DRILLING/SAMPLING
WATER LEVEL - SEASONAL, HIGH WATER
WATER LEVEL - AFTER CASING REMOVAL
WATER LEVEL - AFTER 24 HOURS
PLASTIC LIMIT% | WATER CONTENT% | % PASSING #200 SIEVE (88%) | LIQUID LIMIT%



NOTES:
1 SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.
2 PENETRATION TEST RESISTANCE IN BLOWS PER FOOT (ASTM D1586).

Downers Grove South High School

1436 Norfolk Street, Downers Grove, Illinois

Subsurface Soil Section A-A'

Community High School District 99

PROJECT NO.: 8421-C1 | DATE: 8/23/2018 | VERTICAL SCALE: 1"=2.5'

SOIL CLASSIFICATION LEGEND

GW - WELL GRADED GRAVEL
GM - SILTY GRAVEL
GP - POORLY GRADED GRAVEL
GC - CLAYEY GRAVEL
SW - WELL GRADED SAND
ML - LOW PLASTICITY SILT

ST - SHELBY TUBE
CL - LOW PLASTICITY CLAY
MH - HIGH PLASTICITY SILT
SM - SILTY SAND

RC - ROCK CORE
SP - POORLY GRADED SAND
SC - CLAYEY SAND
CH - HIGH PLASTICITY CLAY

PM - PRESSURE METER
OH - HIGH PLASTICITY ORGANIC SILTS AND CLAYS
OL - LOW PLASTICITY ORGANIC SILTS AND CLAY
PT - PEAT

NOTE: NUMBERS IMMEDIATELY TO THE LEFT OF THE BORING PROFILE ARE SPT-N VALUES.

WR - WEATHERED ROCK
PWR - PARTIALLY WEATHERED ROCK

- FILL
- POSSIBLE FILL
- PROBABLE FILL

SURFACE MATERIALS

TOPSOIL
ASPHALT
GRAVEL
CONCRETE
VOID

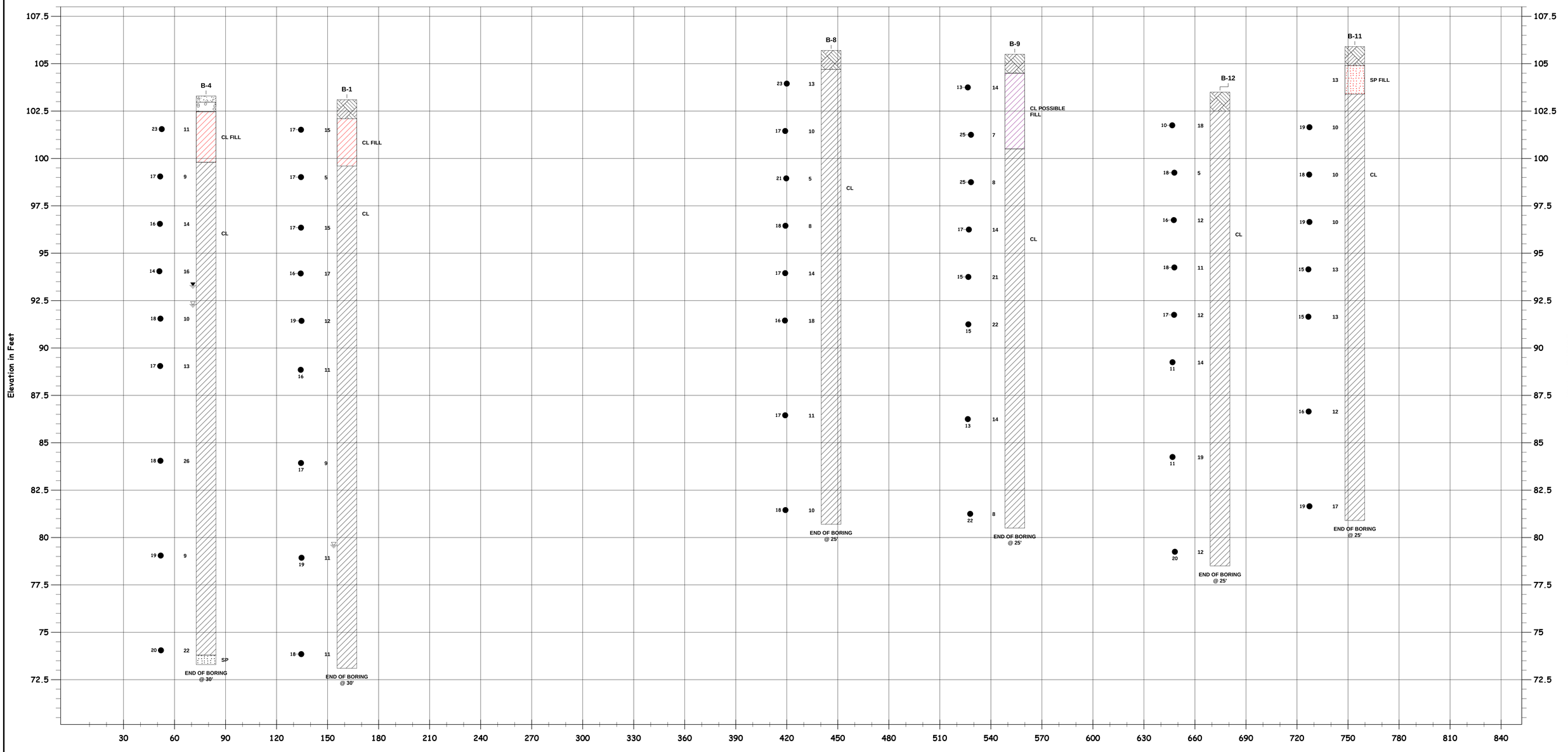
ROCK TYPES

IGNEOUS
METAMORPHIC
SEDIMENTARY

SYMBOL LEGEND

WATER LEVEL - DURING DRILLING/SAMPLING
WATER LEVEL - SEASONAL, HIGH WATER
WATER LEVEL - AFTER CASING REMOVAL
WATER LEVEL - AFTER 24 HOURS

PLASTIC LIMIT% | WATER CONTENT% | % PASSING #200 SIEVE (88%) | LIQUID LIMIT%



NOTES:
1 SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.
2 PENETRATION TEST RESISTANCE IN BLOWS PER FOOT (ASTM D1586).

Downers Grove South High School

1436 Norfolk Street, Downers Grove, Illinois

Subsurface Soil Section B-B'

Community High School District 99

PROJECT NO.: 8421-C1 | DATE: 8/23/2018 | VERTICAL SCALE: 1"=2.5'

ECS Midwest, LLC
Buffalo Grove, Illinois
Pressuremeter Testing Summary

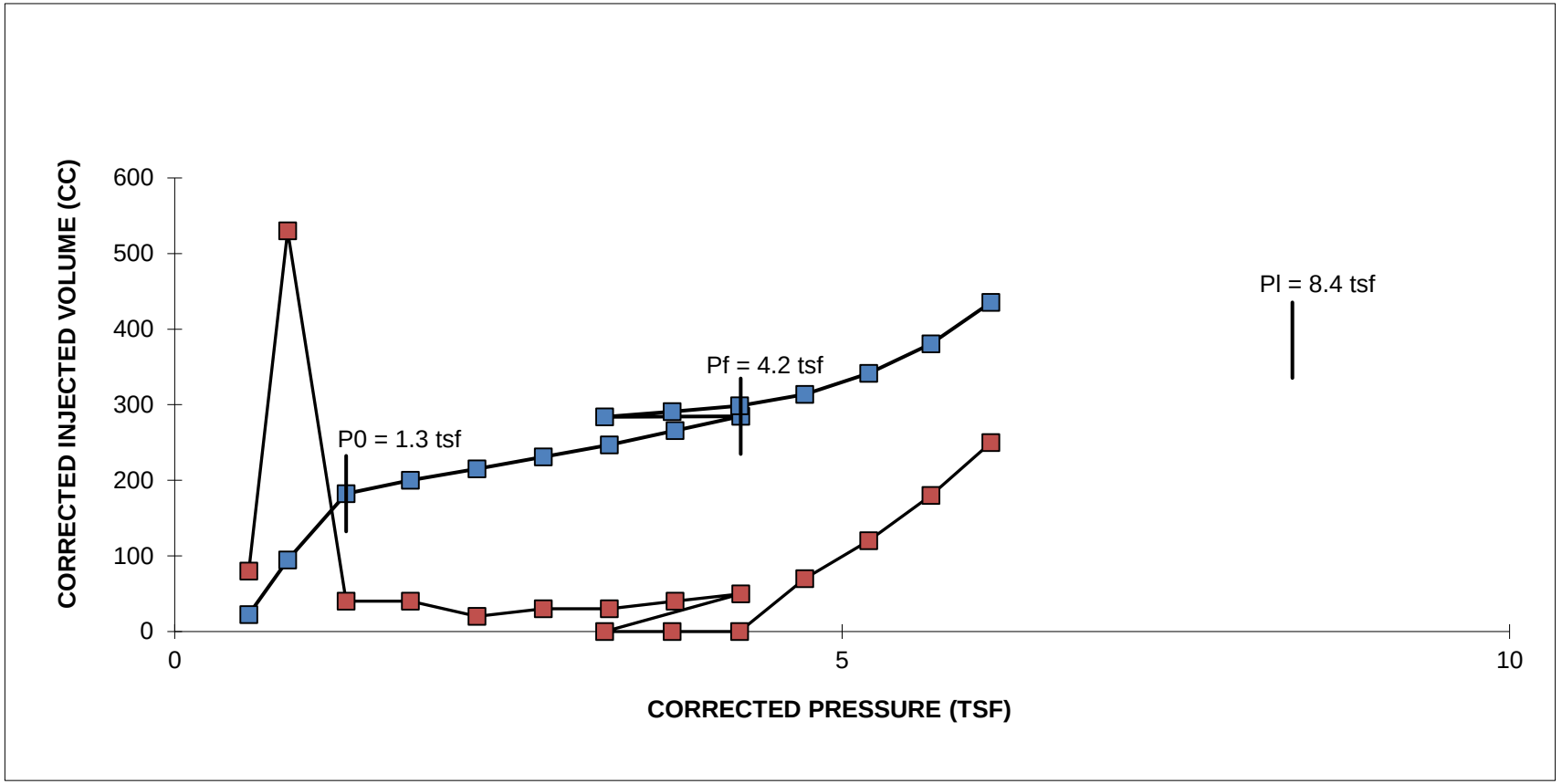
Project Number: 8421-C1 **Project Name: Downers Grove South High School** **Date: 8/1/2018**

Project Engineer: BMT **Principal Engineer: DM** **Summary By: BMT**

Boring Number	Test Depth (feet)	Test Elevation	Water Depth	USCS	P_o	P_f	P_l	E_d	E_r	"N"	E_d / P_l	E_d / E_r	E_d / "N"	P_l / P_f
B-10	7.5	98.1	17	CL	1.3	4.2	8.4	59	150	8	7.1	0.4	7.4	2.0
B-10	10	95.6	17	CL	1.3	6.3	14.2	102	368	9	7.2	0.3	11.3	2.3
B-10	15	90.6	17	CL	1.4	9.3	22.5	103	196	18	4.6	0.5	5.7	2.4
B-2	7.5	95.2	9	CL	1.0	9.1	21.4	130	301	12	6.1	0.4	10.8	2.4
B-2	12.5	90.2	9	CL	1.1	5.1	12.0	66		8	5.5		8.3	2.4
B-2	20	82.7	9	CL	0.6	5.0	13.0	64	208	14	4.9	0.3	4.6	2.6
HA-3	5	94.7	9	CL	1.0	4.5	9.5	61	100	11	6.4	0.6	5.6	2.1
HA-3	9	90.7	9	CL	1.0	10.1	21.0	136	234	42	6.5	0.6	3.2	2.1

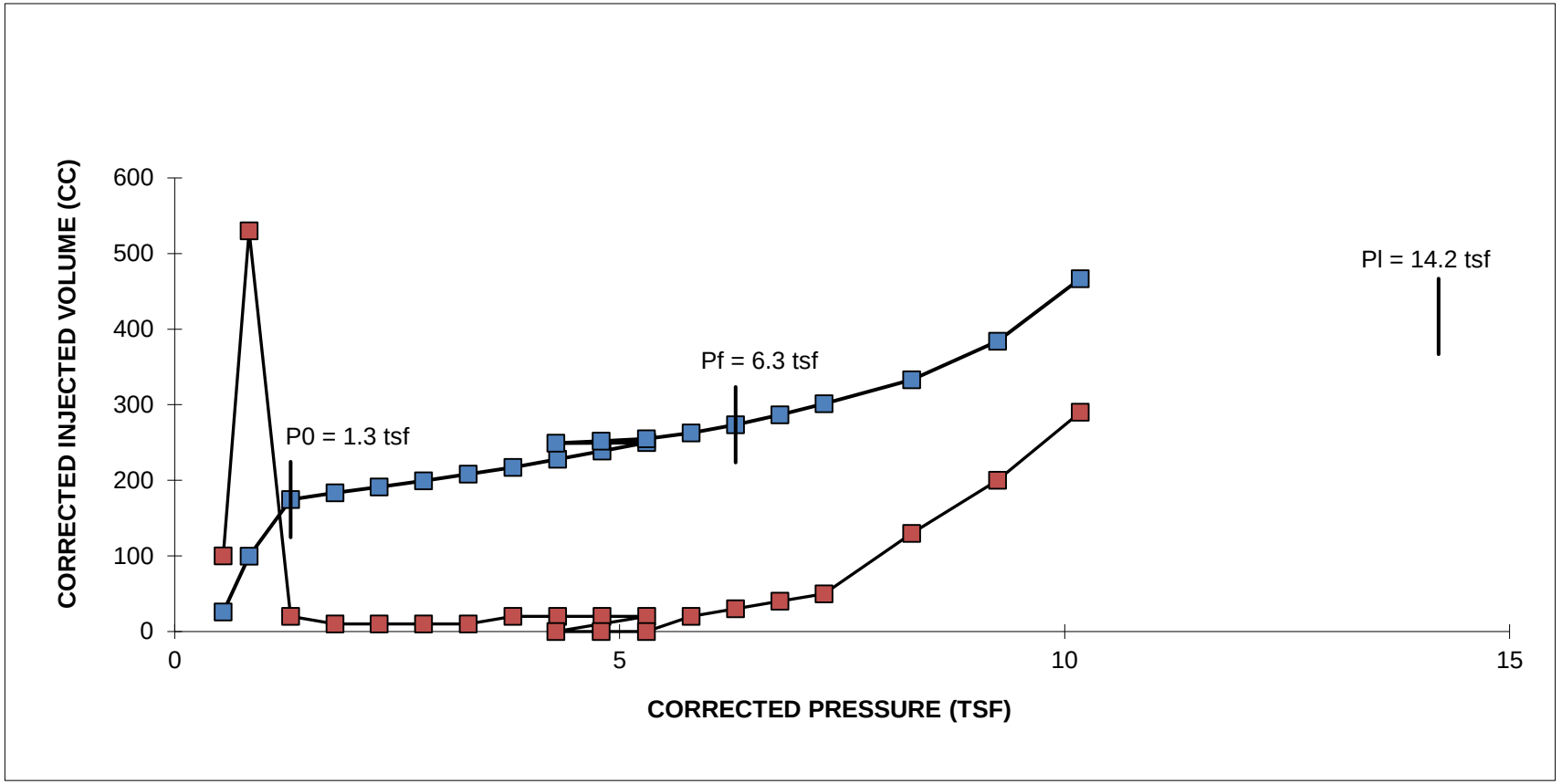
Notes:
Po, Pf, Pl, Ed and Er are in units of tons per square foot.

N.O. = Water Elevation Not Observed



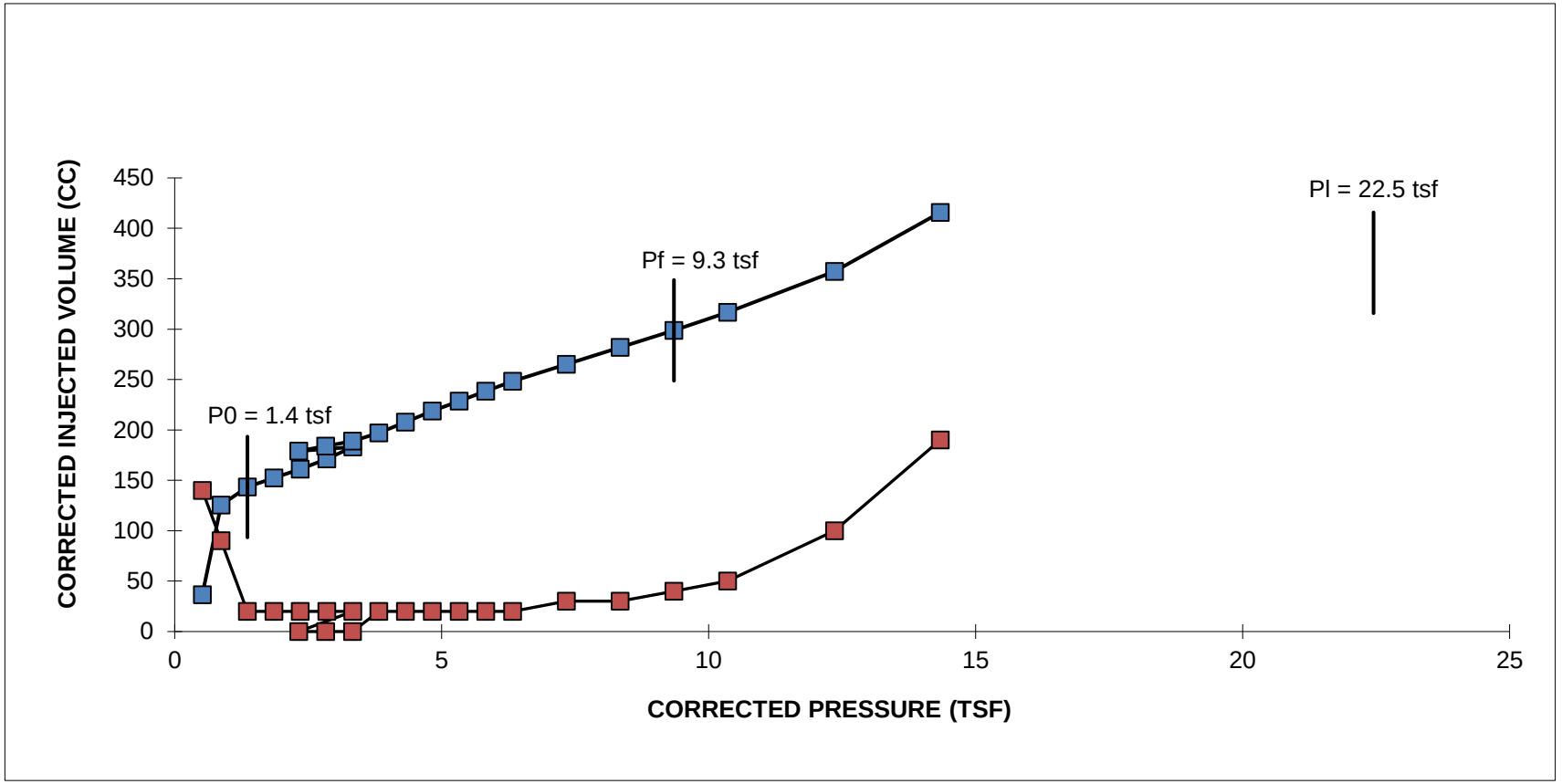
Boring No:	B-10	Depth:	7.5
Soil Description:	Lean Clay	"N":	8
Classification:	CL		

Project:	**Downers Grove High School South**	**ECS Midwest, LLC**
Project No.:	**8421-C1**	**Buffalo Grove, Illinois**
Date:	**8/1/2018**	**Pressure Meter Data Reduction**



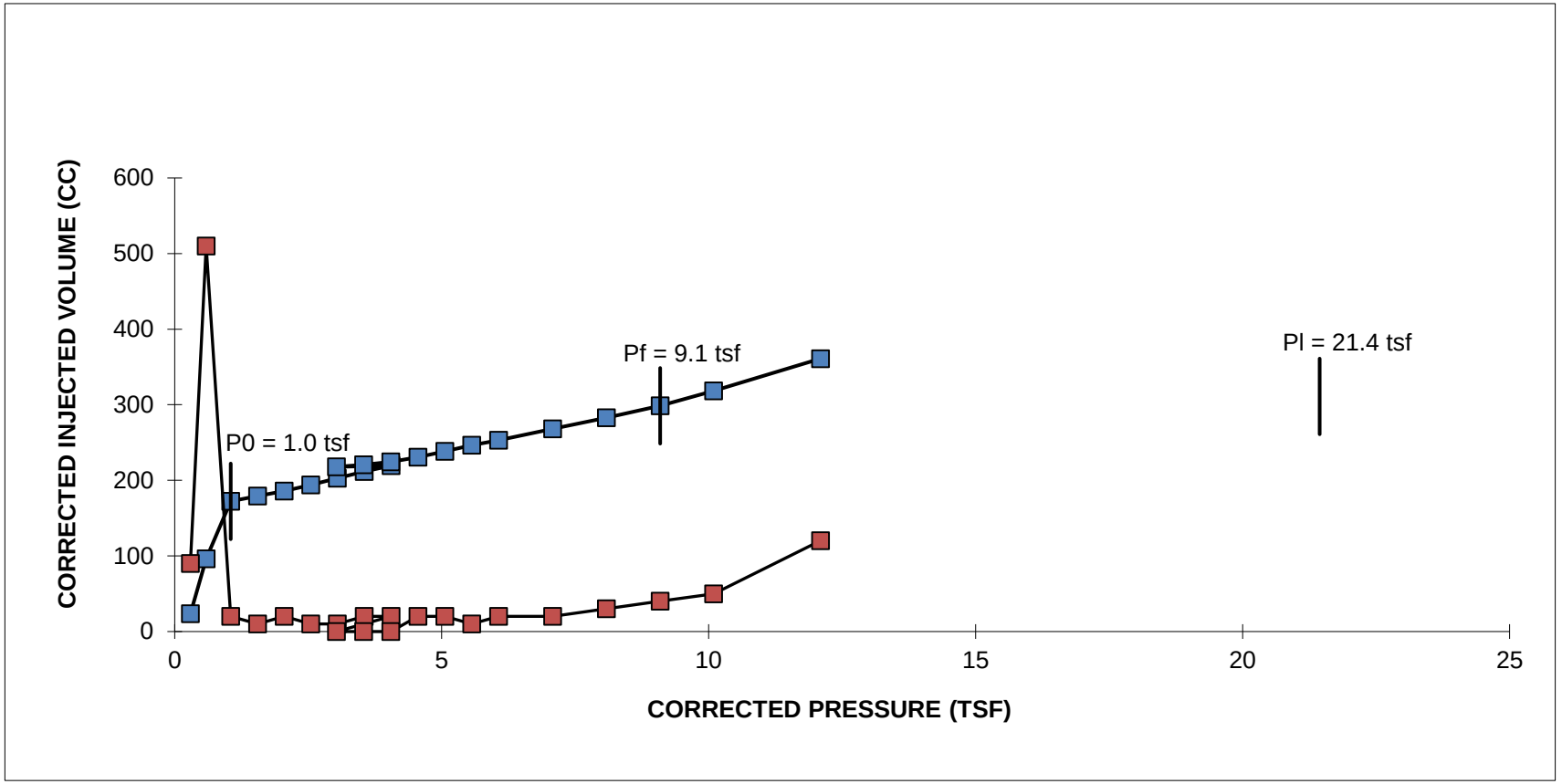
Boring No:	B-10	Depth:	10
Soil Description:	Lean Clay	"N":	9
Classification:	CL		

Project:	**Downers Grove High School South**	**ECS Midwest, LLC**
Project No.:	**8421-C1**	**Buffalo Grove, Illinois**
Date:	**8/1/2018**	**Pressure Meter Data Reduction**



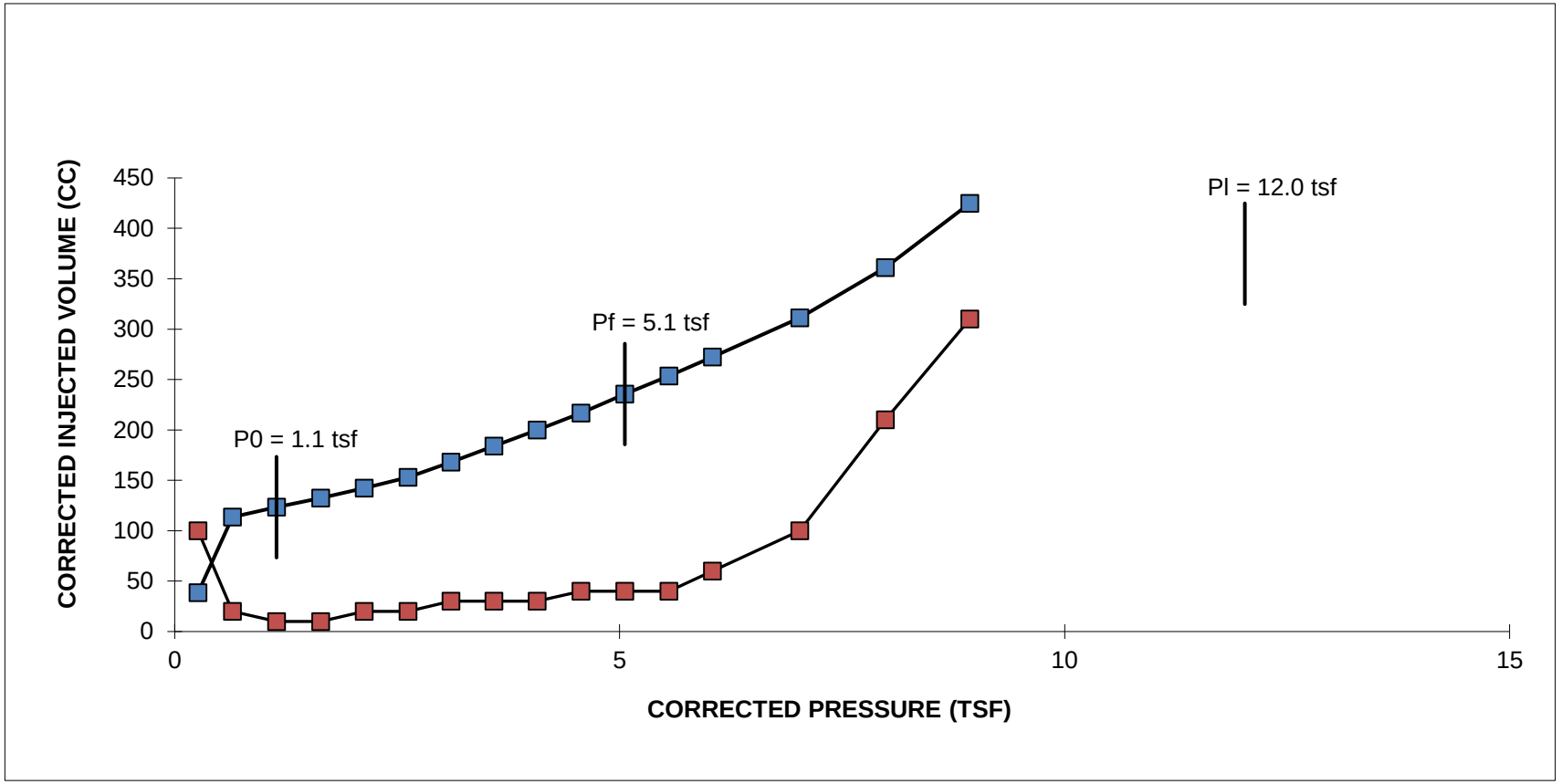
Boring No:	B-10	Depth:	15
Soil Description:	Lean Clay	"N":	18
Classification:	CL		

Project:	**Downers Grove High School South**	**ECS Midwest, LLC**
Project No.:	**8421-C1**	**Buffalo Grove, Illinois**
Date:	**8/1/2018**	**Pressure Meter Data Reduction**



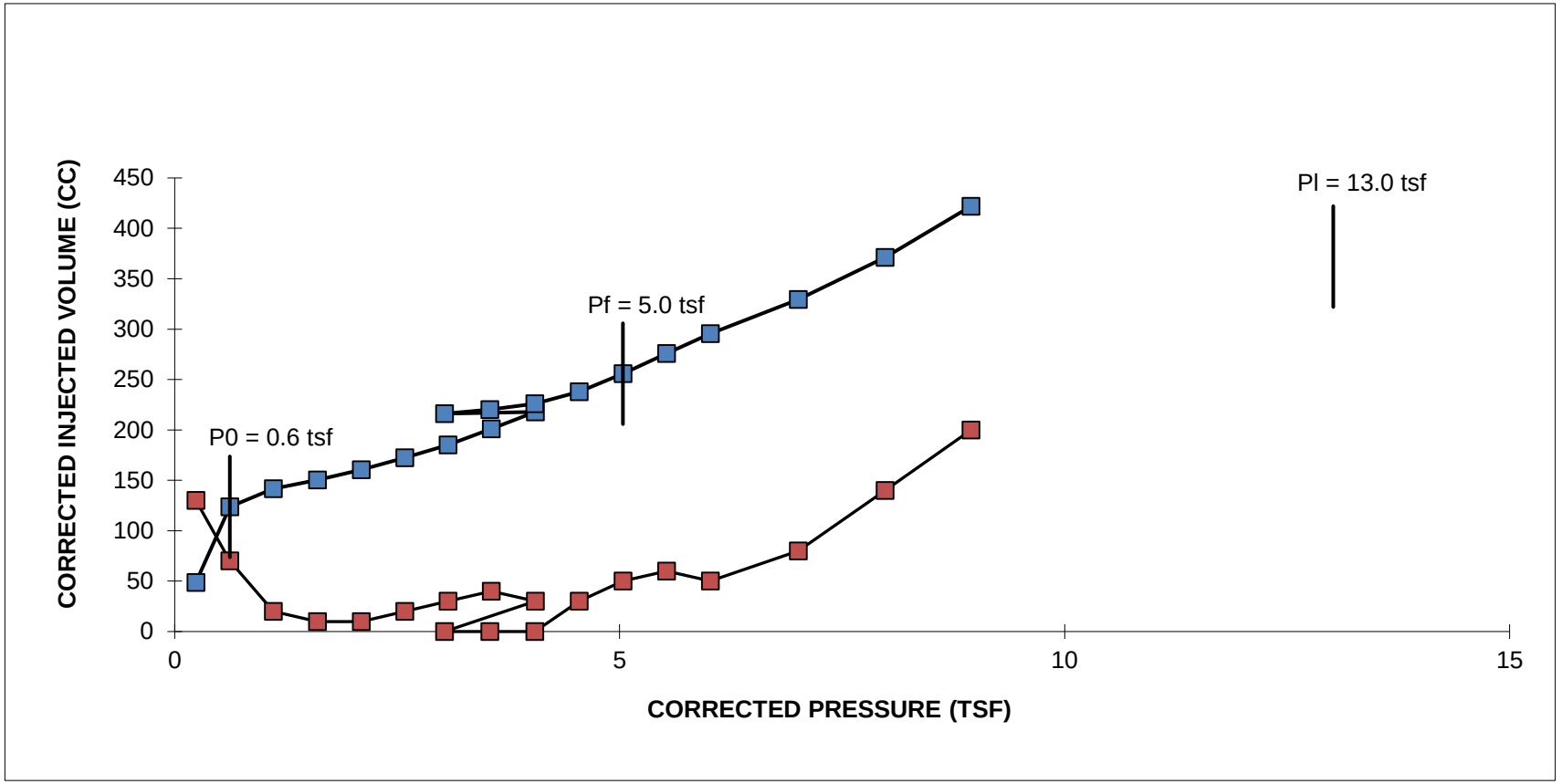
Boring No:	B-2	Depth:	7.5
Soil Description:	Lean Clay	"N":	12
Classification:	CL		

Project:	**Downers Grove High School South**	**ECS Midwest, LLC**
Project No.:	**8421-C1**	**Buffalo Grove, Illinois**
Date:	**8/1/2018**	**Pressure Meter Data Reduction**



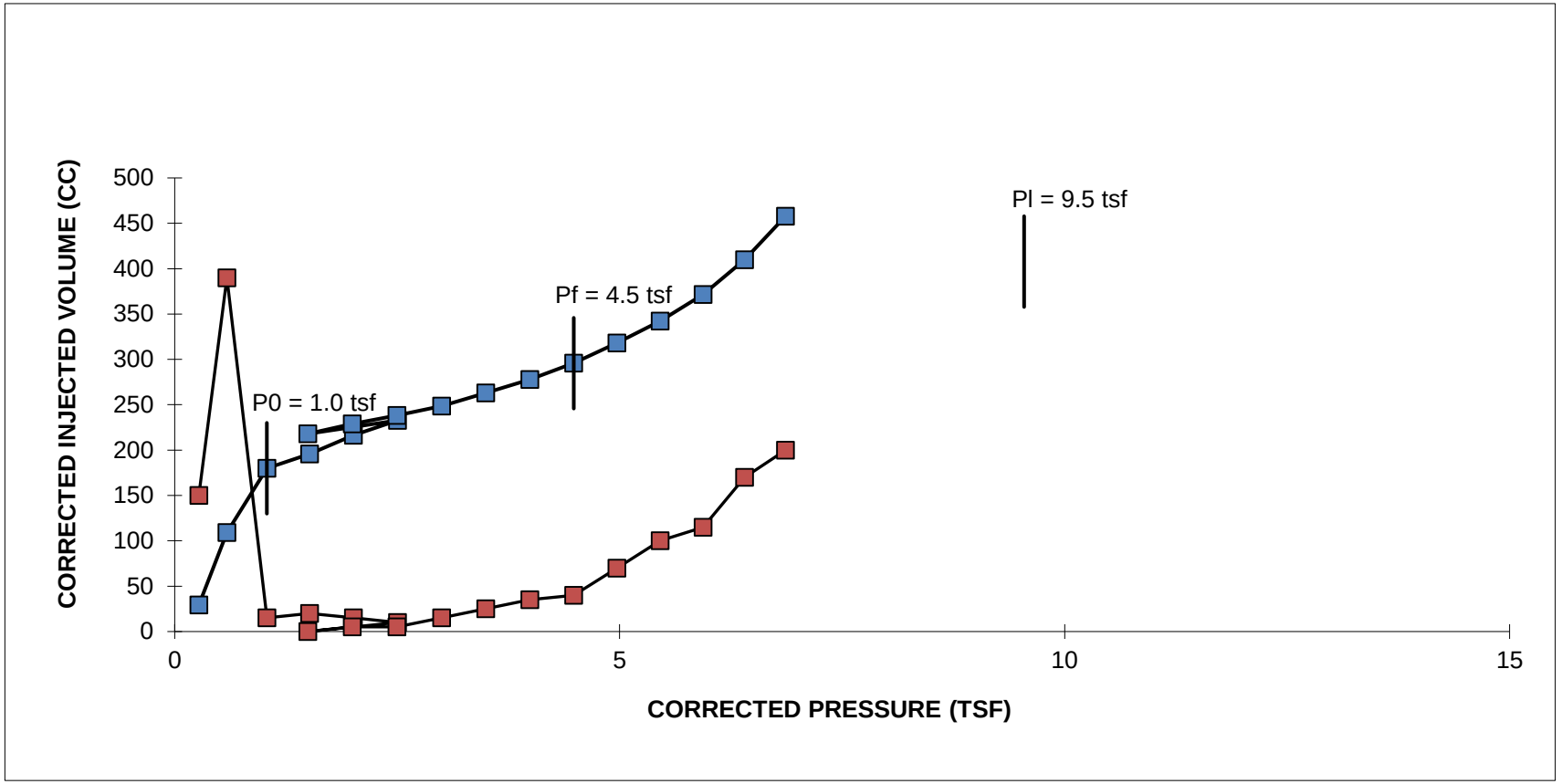
Boring No:	B-2	Depth:	12.5
Soil Description:	Lean Clay	"N":	8
Classification:	CL		

Project:	**Downers Grove High School South**	**ECS Midwest, LLC**
Project No.:	**8421-C1**	**Buffalo Grove, Illinois**
Date:	**8/1/2018**	**Pressure Meter Data Reduction**



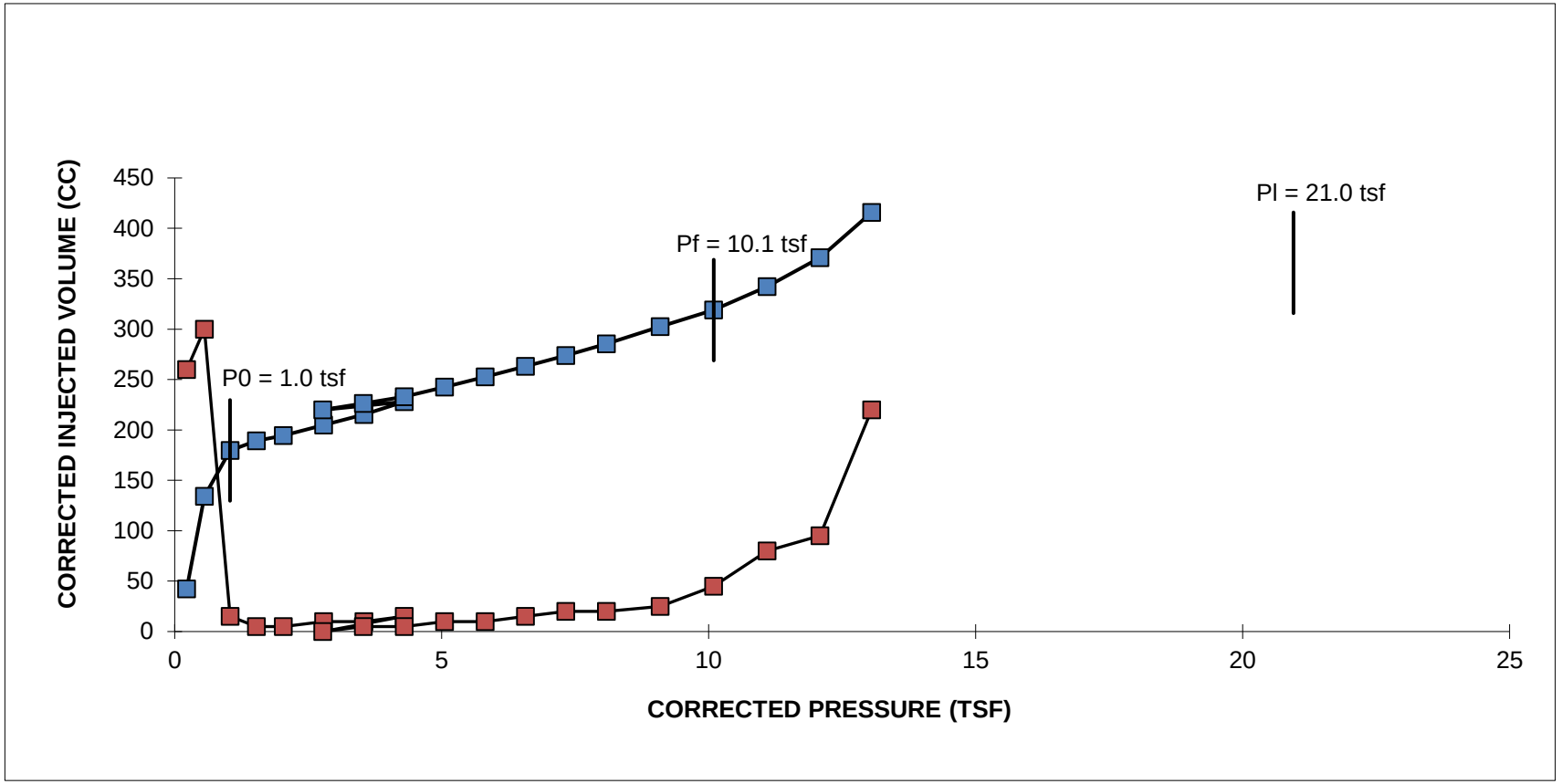
Boring No:	B-2	Depth:	20
Soil Description:	Lean Clay	"N":	14
Classification:	CL		

Project:	**Downers Grove High School South**	**ECS Midwest, LLC**
Project No.:	**8421-C1**	**Buffalo Grove, Illinois**
Date:	**8/1/2018**	**Pressure Meter Data Reduction**



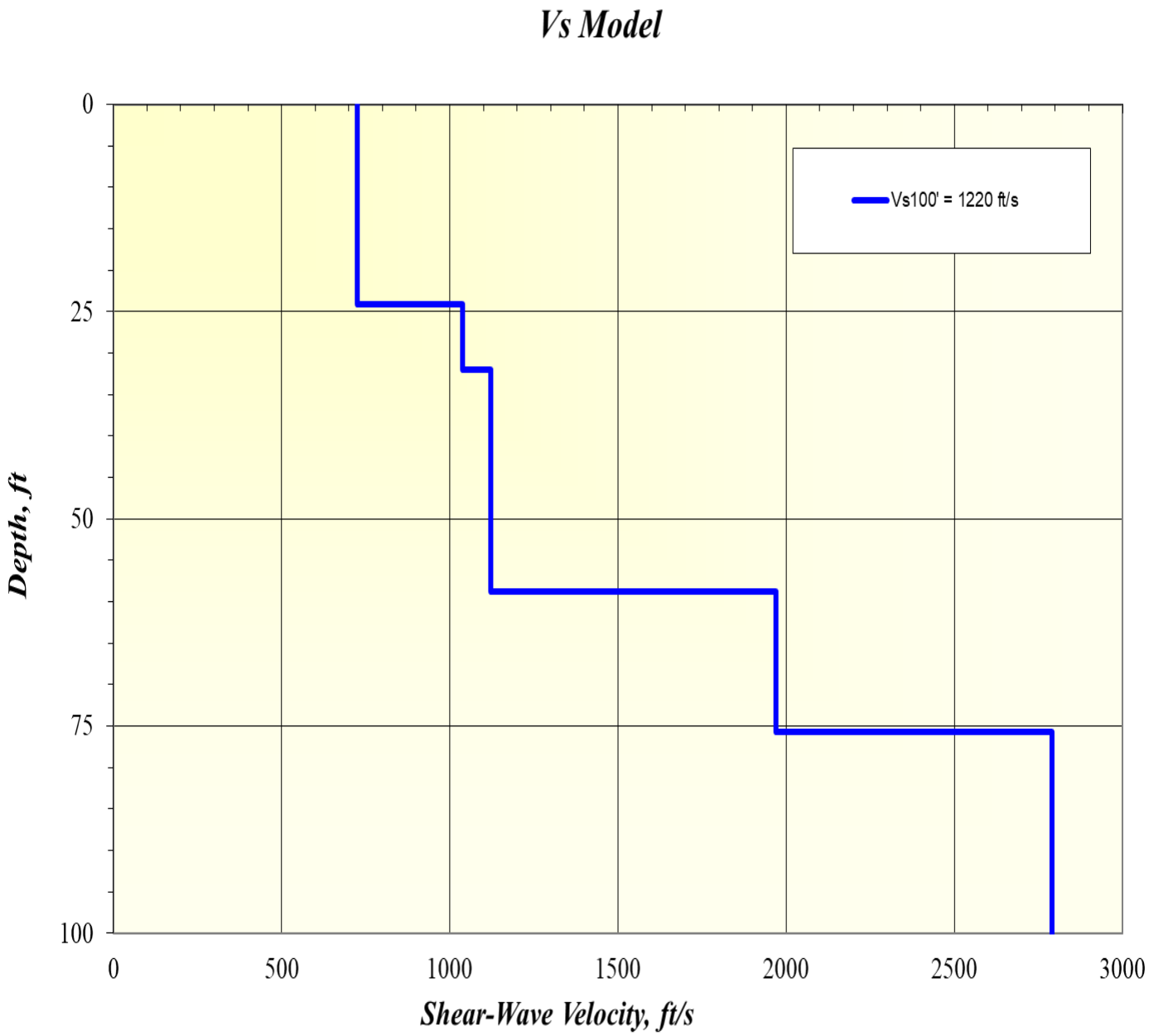
Boring No:	HA-3	Depth:	5
Soil Description:	Lean Clay	"N":	11
Classification:	CL		

Project:	**Downers Grove High School South**	**ECS Midwest, LLC**
Project No.:	**8421-C1**	**Buffalo Grove, Illinois**
Date:	**8/7/2018**	**Pressure Meter Data Reduction**



Boring No:	HA-3	Depth:	9
Soil Description:	Lean Clay	"N":	42
Classification:	CL		

Project:	**Downers Grove High School South**	**ECS Midwest, LLC**
Project No.:	**8421-C1**	**Buffalo Grove, Illinois**
Date:	**8/7/2018**	**Pressure Meter Data Reduction**



ARRAY 1 GEOPHONE SPACING = 25 Feet		SHEAR WAVE VELOCITY PROFILE Downers Grove South High School Downers Grove, Illinois ECS Project 16:8421-C1

Appendix C – Field Operations

Important Information about This Geotechnical-Engineering Report

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, clients can benefit from a lowered exposure to the subsurface problems that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed below, contact your GBA-member geotechnical engineer. Active involvement in the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Geotechnical-Engineering Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. *Those who rely on a geotechnical-engineering report prepared for a different client can be seriously misled*. No one except authorized client representatives should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one – not even you – should apply this report for any purpose or project except the one originally contemplated.*

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read it *in its entirety*. Do not rely on an executive summary. Do not read selected elements only. *Read this report in full.*

You Need to Inform Your Geotechnical Engineer about Change

Your geotechnical engineer considered unique, project-specific factors when designing the study behind this report and developing the confirmation-dependent recommendations the report conveys. A few typical factors include:

- the client's goals, objectives, budget, schedule, and risk-management preferences;
- the general nature of the structure involved, its size, configuration, and performance criteria;
- the structure's location and orientation on the site; and
- other planned or existing site improvements, such as retaining walls, access roads, parking lots, and underground utilities.

Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.*

This Report May Not Be Reliable

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, that it could be unwise to rely on a geotechnical-engineering report whose reliability may have been affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If your geotechnical engineer has not indicated an "apply-by" date on the report, ask what it should be*, and, in general, *if you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying it. A minor amount of additional testing or analysis – if any is required at all – could prevent major problems.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface through various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing were performed*. The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgment to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team from project start to project finish, so the individual can provide informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, *they are not final*, because the geotechnical engineer who developed them relied heavily on judgment and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* revealed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a full-time member of the design team, to:

- confer with other design-team members,
- help develop specifications,
- review pertinent elements of other design professionals' plans and specifications, and
- be on hand quickly whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction observation.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for informational purposes only*. To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report, but they may rely on the factual data relative to the specific times, locations, and depths/elevations referenced. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely*. Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures*. If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. As a general rule, *do not rely on an environmental report prepared for a different client, site, or project, or that is more than six months old.*

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, none of the engineer's services were designed, conducted, or intended to prevent uncontrolled migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration.*** Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

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GENERAL NOTES

1. GENERAL BUILDING CODE: 2015 INTERNATIONAL BUILDING CODE

2. DESIGN LIVE LOADS:

A.	THEATRES:	
	• FIXED SEATS	100 PSF
	• LOBBIES/OTHER ASSEMBLY AREAS	100 PSF
	• STAGES AND PLATFORMS	100 PSF
	• PROJECTION / CONTROL ROOMS	100 PSF
	• STUDIO THEATRE CATWALK	40 PSF
	• LOADING GALLERY CATWALK	80 PSF PLUS 75,610 LBS OF COUNTERWEIGHT STORAGE
	• GRIDIRON	75 PSF WITH UP TO (10) 300 LB SIMULTANEOUS POINT LOADS
	• STAGE LEFT & RIGHT PINRAIL GALLERY CATWALKS	80 PSF
	• AUDITORIUM CATWALKS	40 PSF
	• DRESSING ROOM	40 PSF
	• SCENE SHOP	100 PSF
	• STUDIO THEATRE	100 PSF
	• EVENT CORRIDOR	100 PSF
	• PIT AND CATWALK STAIRS	100 PSF
	• DIMMER ROOM	100 PSF
	• MEZZANINE STORAGE	125 PSF
	• LIGHTING ROOMS BY CHEEK WALLS	100 PSF
	•	
B.	OFFICE BUILDINGS:	
	• OFFICES	50 PSF OR 2,000 LBS. CONCENTRATED LOAD PLUS 15 PSF PARTITION LIVE LOAD
C.	ROOFS:	
	• ORDINARY	20 PSF OR 300 LBS. CONCENTRATED LOAD
D.	SCHOOLS:	
	• CLASSROOMS/STUDY LOFTS	40 PSF OR 1,000 LBS. CONCENTRATED LOAD
	• 1ST FLOOR CORRIDORS	100 PSF OR 1,000 LBS. CONCENTRATED LOAD
	• CORRIDORS ABOVE 1ST FLOOR	80 PSF OR 1,000 LBS. CONCENTRATED LOAD
	• LEARNING COMMONS	100 PSF OR 1,000 LBS CONCENTRATED LOAD
	• READING ROOMS	40 PSF OR 1,000 LBS. CONCENTRATED LOAD
E.	STORAGE:	
	• LIGHT	125 PSF
F.	LOBBIES	100 PSF
G.	STAIRS & EXITS	100 PSF
H.	BALCONIES AND DECKS	100 PSF
I.	VESTIBULES	100 PSF
J.	COMMONS PASSAGE	100 PSF
K.	STAIR STUDY LOFTS	100 PSF
L.	TOILET ROOMS	60 PSF
M.	SECURITY ROOM	40 PSF
N.	CAFES	100 PSF
O.	ELECTRICAL ROOM	100 PSF
P.		
Q.	SEE PLANS FOR SPECIAL LIVE LOAD AREAS.	
R.	DESIGN LIVE LOADS HAVE BEEN REDUCED ACCORDING TO INDICATED GENERAL BUILDING CODE.	

3. WIND DESIGN DATA:

A.	BASIC WIND SPEED (3-SECOND GUST):	120 MPH
B.	RISK CATEGORY:	III
C.	WIND EXPOSURE:	B
D.	INTERNAL PRESSURE COEFFICIENT (Gcpi):	+/- 0.18
E.	SEE ARCHITECTURAL DRAWINGS FOR COMPONENTS AND CLADDING WIND LOADS	

4. EARTHQUAKE DESIGN DATA:

A.	IMPORTANCE FACTOR (Ie):	1.25
B.	RISK CATEGORY	III
	• Ss: 0.1543 g S1: 0.0657 g	
	• Sds: 0.123 g SD1: 0.074 g	
C.	SITE CLASS:	C
D.	SEISMIC DESIGN CATEGORY:	B
E.	DIRECTION: BOTH	
F.	FORCE RESISTING SYSTEMS: (COMMONS - STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE), (AUDITORIUM - ORDINARY PRECAST SHEAR WALLS)	
G.	RESPONSE COEFFICIENTS (Cs):	0.051
H.	RESPONSE MODIFICATION FACTOR(R):	3
I.	DESIGN BASE SHEAR:	COMMONS - 95 KIPS (BOTH DIRECTIONS) AUDITORIUM - 410 KIPS (BOTH DIRECTIONS)
J.	ANALYSIS PROCEDURE:	EQUIVALENT LATERAL FORCE PROCEDURE

5. SNOW DESIGN DATA:

A.	GROUND SNOW LOAD (Pg):	30 PSF
B.	FLAT ROOF SNOW LOAD (Pf):	30 PSF
C.	EXPOSURE FACTOR (Ce):	B
D.	IMPORTANCE FACTOR (Is):	1.10
E.	THERMAL FACTOR (Ct):	1.0

6. SEE PLANS FOR SPECIAL SNOW LOAD AREAS AND DRIFTING.

7. REFERENCES TO STANDARDS ARE TO EDITIONS INDICATED IN SPECIFICATIONS AND APPLICABLE BUILDING CODE.

8. CONSTRUCTION MANAGER SHALL SUBMIT ANTICIPATED LOCATIONS OF CONSTRUCTION JOINTS TO ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

9. PRINCIPAL OPENINGS ARE INDICATED ON THE DRAWINGS. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR SLEEVES, BLOCKOUTS, CURBS AND INSERTS.

10. ELEVATOR EQUIPMENT FURNISHED INCLUDING MACHINE ROOMS, PITS, AND PENTHOUSES, SHALL CONFORM TO THE FRAMING AND DETAILS INDICATED ON THE DRAWINGS.

11. THE STRUCTURAL DRAWINGS REPRESENT THE COMPLETED STRUCTURE AND DO NOT INDICATE CONSTRUCTION MEANS AND METHODS, SEQUENCES, PROCEDURES, TEMPORARY CONDITIONS, OR TEMPORARY SHORING AND BRACING.

12. SUBMIT SHOP DRAWINGS AND SUPPORTING CALCULATIONS, PERFORMED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF ILLINOIS, FOR PRE-FABRICATED OR PRE-ENGINEERED ELEMENTS INCLUDING BUT NOT LIMITED TO PRECAST CONCRETE FRAMING, STRUCTURAL STEEL CONNECTIONS, STEEL STAIRS, LIGHT GAUGE STEEL FRAMING, EXTERIOR STEEL STUD BACKUP, ETC.

EXISTING CONSTRUCTION NOTES

1. EXISTING CONSTRUCTION INDICATED ON DRAWINGS IS FOR REFERENCE ONLY. VERIFY HORIZONTAL AND VERTICAL DIMENSIONS OF EXISTING CONSTRUCTION BEFORE WORK IS BEGUN. REPORT ANY VARIATION BETWEEN INDICATED DIMENSIONS AND MEASURED DIMENSIONS TO ARCHITECT/ENGINEER.

2. EXISTING CONSTRUCTION HAS NOT BEEN VERIFIED FOR CONFORMANCE WITH REQUIREMENTS OF APPLICABLE BUILDING CODE EXCEPT FOR AREAS DIRECTLY AFFECTED BY MODIFICATIONS INDICATED ON STRUCTURAL DRAWINGS.

3. THE CONTRACTOR IS RESPONSIBLE FOR ERECTION PROCEDURES AND SEQUENCES AND SHALL PROVIDE ADEQUATE SHORING AND TEMPORARY BRACING FOR EXISTING CONSTRUCTION.

4. DRILLING INTO EXISTING CONCRETE SHALL BE PERFORMED IN A MANNER THAT AVOIDS DAMAGE TO EXISTING REINFORCEMENT. UTILIZE BAR DETECTION METHODS TO LOCATE REINFORCEMENT PRIOR TO DRILLING.

5. THOROUGHLY CLEAN THE FACE OF CONCRETE SURFACES CUT FROM EXISTING CONCRETE. ALLOW SURFACE TO COMPLETELY DRY, COAT WITH AN APPROVED BONDING AGENT AND FINISH WITH AN APPROVED PATCHING COMPOUND. CUT OFF EXPOSED REINFORCEMENT AND GROUND FLUSH TO THE NEW CONCRETE SURFACE AND FINISH WITH AN EPOXY PAINT.

6. WHERE EXISTING CONCRETE REINFORCEMENT IS TO BE REUSED IN PLACE, REMOVE CONCRETE IN A MANNER THAT MINIMIZES DAMAGE TO THE REINFORCEMENT. REPLACE DAMAGED REINFORCEMENT IN A MANNER APPROVED BY THE ARCHITECT/ENGINEER.

7. EXISTING STRUCTURAL FRAMING AND LAYOUT IS BASED UPON EXISTING DRAWINGS PREPARED BY FUGARD, BURT, WILKINSON & ORTH ARCHITECTS DATED JUNE 15, 1963, FUGARD, ORTH & ASSOCIATES, INC., DATED MARCH 31, 1969, WIGHT & COMPANY, DATED APRIL, 9, 1973 AND HEALY, SNYDER, BENDER & ASSOCIATES, INC., DATED SEPTEMBER 8, 1999.

8. MATERIAL TESTING AND INVESTIGATION OF EXISTING STRUCTURE IS BASED ON INFORMATION AND RECOMMENDATIONS CONTAINED IN A REPORT PREPARED BY ECS MIDWEST, LLC, DATED FEBRUARY 8, 2019.

9. EXISTING STRUCTURE MATERIAL PROPERTY SUMMARY:

CONCRETE SLAB AND BEAM COMP. STRENGTH (F'c):	3,500 PSI
CONCRETE COLUMN COMPRESSIVE STRENGTH (F'c):	3,500 PSI
CONCRETE WALL COMPRESSIVE STRENGTH (F'c):	_____ PSI
STEEL REINFORCEMENT YIELD STRENGTH (Fy):	40 KSI

CONCRETE CORING NOTES

1. CORING OF CONRETE STRUCTURAL ELEMENTS IS NOT PERMITTED UNLESS INDICATED ON THE STRUCTURAL DRAWINGS, APPROVED BY THE ARCHITECT/ENGINEER IN WRITING OR CORING MEETS THE CRITERIA LISTED BELOW.

2. CORING THROUGH COLUMNS, BEAMS, GIRDERS OR JOISTS IS NOT PERMITTED UNLESS APPROVED IN WRITING BY THE ARCHITECT/ENGINEER.

3. CORING OF PAN JOIST SLABS IS PERMITTED PROVIDED A MINIMUM OF 3" CLEAR CONCRETE IS PROVIDED BETWEEN CORES. SAW CUTTING OF PAN JOIST SLABS IS PERMITTED WHEN APPROVED IN WRITING BY THE ARCHITECT/ENGINEER.

4. CORING OF ONE-WAY SLABS IS PERMITTED PROVIDED THE LONGITUDINAL TOP AND BOTTOM REINFORCEMENT IS LOCATED AND AVOIDED UTILIZING NON-DESTRUCTIVE TESTING METHODS. SUBMIT REQUEST IN WRITING TO ARCHITECT/ENGINEER WHEN CUTTING OF LONGITUDINAL REINFORCEMENT IS REQUIRED. CUTTING OF TEMPERATURE REINFORCEMENT IS PERMITTED. SAW CUTTING OF ONE-WAY SLABS IS PERMITTED WHEN APPROVED IN WRITING BY THE ARCHITECT/ENGINEER.

5. CORING OR SAW CUTTING OF TWO-WAY SLABS IS NOT PERMITTED UNLESS APPROVED IN WRITING BY THE ARCHITECT/ENGINEER.

6. CORING OF FROST WALLS/FOUNDATION WALLS SUPPORTED BY CONTINUOUS FOOTING FOUNDATIONS IS PERMITTED. CORING OF CONTINUOUS FOOTING FOUNDATIONS IS NOT PERMITTED UNLESS APPROVED IN WRITING BY THE ARCHITECT/ENGINEER.

7. CORING OF BASEMENT WALLS IS PERMITTED PROVIDED THE WALL REINFORCEMENT IS LOCATED AND AVOIDED UTILIZING NON-DESTRUCTIVE TESTING METHODS. SUBMIT REQUEST IN WRITING TO ARCHITECT/ENGINEER WHEN CUTTING OF WALL REINFORCEMENT IS REQUIRED. SAW CUTTING OF BASEMENT WALLS IS PREMITTED WHEN APPROVED IN WRITING BY THE ARCHITECT/ENGINEER.

8. CORING OF PRECAST CONCRETE HOLLOWCORE PLANKS IS NOT PERMITTED UNLESS APPROVED IN WRITING BY THE PRECAST PLANK ENGINEER OR UNLESS INDICATED AS APPROVED ON THE PRECAST PLANK DRAWINGS.

FOUNDATION NOTES

1. DESIGN SOIL PRESSURE: 6,000 PSF NET ALLOWABLE BEARING PRESSURE FOR NEW FOUNDATIONS BEARING ON COMPETENT NATURAL CLAY SOILS OR ON NEW ENGINEERED FILLLEAN CONCRETE OVERLAYING COMPETENT NATURAL SILTY CLAY SOILS.

   INITIAL SITE PREPARATION SHALL CONSIST OF REMOVING THE EXISTING TOPSOIL AND CONCRETE PAVEMENTS ALONG WITH ANY OTHER SOFT OR UNSUITABLE MATERIALS FROM THE 10-FOOT EXPANDED BUILDING AREAS, 5-FOOT EXPANDED PAVEMENT LIMITS, AND TO 5 FEET BEYOND THE TOE OF ENGINEERED FILLS. THE EXISTING GRAVEL BASE COURSE CAN BE STOCKPILED FOR LATER REUSE AS ENGINEERED FILL.

   SUITABLE BEARING SOILS FOR DIRECT FOUNDATION SUPPORT OR AS THE SUBGRADE FOR ENGINEERED BACKFILL AND INDIRECT FOUNDATION SUPPORT WERE ENCOUNTERED AT THE TEST BORING LOCATIONS AT DEPTHS RANGING FROM ABOUT 3 1/2 TO 5 1/2 FEET (POSSIBLY DEEPER IN UNEXPLORED AREAS OF THE SITE) BELOW THE EXISTING SITE GRADES.TO HELP REDUCE DISTURBANCE OF THE FOUNDATION BEARING GRADE AT LEAST THE LAST (1) FOOT OF MATERIAL ABOVE THE DESIGN BEARING GRADE SHALL BE REMOVED WITH AN EXCAVATOR EQUIPPED WITH A SMOOTH EDGED BUCKET.

   SEE THE GEOTECHNICAL REPORT FOR ADDITIONAL RECOMMENDATIONS/REQUIREMENTS FOR ADJACENT EXISTING FOUNDATION PROTECTION, PROOFROLLING AND COMPACTION REQUIREMENTS, APPROVED ENGINEERED FILL MATERIALS, ETC.

2. THE FOUNDATION DESIGN IS BASED ON SUBSURFACE INFORMATION AND RECOMMENDATIONS CONTAINED IN A REPORT PREPARED BY ECS MIDWEST, LLC, REPORT # 16:8421-C1 AND DATED AUGUST 23, 2018 PLUS SUPPLEMENTAL REPORT DATED SEPTEMBER 11, 2019.

3. ESTABLISH BEARING OF FOOTINGS IN STRATUM AS INDICATED. ELEVATIONS GIVEN ARE FOR BIDDING/ESTIMATING PURPOSES ONLY.

4. CONDUCT ON-SITE INSPECTION OF FOUNDATION BEARING STRATA DURING CONSTRUCTION BY A QUALIFIED TESTING AGENCY.

5. EXTEND EXTERIOR FOUNDATION ELEMENTS BELOW THE MAXIMUM ANTICIPATED FROST DEPTH. SEE GEOTECHNICAL REPORT FOR FROST DEPTH REQUIREMENTS.

6. UNLESS NOTED OTHERWISE, FOUNDATION ELEMENTS AT INTERIOR CONDITIONS HAVE NOT BEEN DESIGNED FOR WINTER CONDITIONS. PROVIDE ADEQUATE MEASURES TO PROTECT AGAINST FROST HEAVE.

7. DO NOT BACKFILL AGAINST BASEMENT WALLS UNTIL WALLS HAVE ACHIEVED 100% AND FLOOR CONSTRUCTION AT BASE AND TOP OF WALL HAS ACHIEVED AT LEAST 50% OF THEIR RESPECTIVE DESIGNATED COMPRESSIVE STRENGTHS.

8. PERFORM BACKFILL OPERATIONS ON BOTH SIDES OF GRADE BEAMS AND WALLS IN AN EQUAL MANNER AS NOT TO CREATE UNBALANCED LATERAL EARTH PRESSURES.

9. SLAB-ON-GRADE SHALL BE UNDERLAIN BY A MINIMUM OF 6 INCHES OF GRANULAR BASE COURSE LAYER OVER PROPERLY PREPARED SUBGRADE AND A 15 MIL CONTINUOUS VAPOR RETARDER UNO ON PLANS. SEE GEOTECHNICAL REPORT FOR SPECIFIC DRAINAGE LAYER MATERIAL REQUIREMENTS. COMPACT THE SUBGRADE TO AT LEAST THE 95 PERCENT OF THE MAXIMUM DRY DENSITY PER ASTM D1557.

   THE INITIAL SUBGRADE PREPARATION SHALL CONSIST OF REMOVING THE EXISTING TOPSOIL AND PAVEMENTS ALONG WITH ANY OTHER SOFT OR UNSUITABLE MATERIALS FROM THE 10-FOOT EXPANDED BUILDING AREAS AND 5-FEET BEYOND THE TOE OF ENGINEERED FILLS.

   THE GEOTECHNICAL REPORT RECOMMENDS AGAINST THE FINAL SLAB SOILS REMAINING EXPOSED TO THE ELEMENTS FOR A PROLONGED PERIOD OF TIME AS THE SUBGRADE MAY BE DISTURBED AND/OR SOFTENED. IF THE SLAB SECTION IS NOT CONSTRUCTED WITHIN A FEW DAYS AFTER EXPOSING THE FINAL DESIGN SUBGRADE, CONSIDERATION SHALL BE GIVEN TO LEAVING THE SUBGRADE APPROXIMATELY 1 FOOT ABOVE THE FINAL DESIGN SUBGRADE TO HELP REDUCE DISTURBANCE OF THE SUBGRADE SOILS.

   PER GEOTECHNICAL REPORT, IF THE EXISTING FILLS SOILS ARE TO REMAIN IN PLACE, THEY SHALL BE COMPACTED PER THE PROOFROLLING REQUIREMENTS IN THE GEOTECHNICAL REPORT.

CONCRETE NOTES

1. COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE (ACI) STANDARDS .

2. PROVIDE CONCRETE IN THE FOLLOWING AREAS WITH SAND AND GRAVEL OR CRUSHED STONE AGGREGATES AND THE DESIGNATED COMPRESSIVE STRENGTH IN 28 DAYS.

A.	FOOTINGS / MATS	4000 PSI
B.	GRADE BEAMS	4000 PSI
C.	FOUNDATION WALLS / BASEMENT WALLS / PILASTERS / PIERS	4000 PSI
D.	MISCELLANEOUS WALLS	4000 PSI
E.	SLABS-ON-GRADE	3500 PSI
F.	NON-STRUCTURAL TOPPING SLAB OVER GEOFOAM	3500 PSI
G.	SLAB-ON-STEEL FORM DECK	3000 PSI
H.	STRUCTURAL PRECAST PANELS	5000 PSI

3. PROVIDE CONCRETE IN FOLLOWING AREAS WITH LIGHTWEIGHT COARSE AGGREGATE, SAND FINE AGGREGATE AND THE DESIGNATED COMPRESSIVE STRENGTH IN 28 DAYS. THE 28-DAY AIR DRY DENSITY SHALL NOT EXCEED 125 PCF.

A.	SLAB-ON-STEEL COMPOSITE DECK	3000 PSI

4. PROVIDE CONCRETE PROTECTION FOR DEFORMED BAR REINFORCEMENT AS INDICATED BELOW (UNLESS NOTED OTHERWISE ON THE DRAWINGS). THE INDICATED COVER APPLIES TO FIRE-RESISTANCE RATINGS OF 2 HOURS OR LESS (UNLESS INDICATED AS A 3 OR 4 HOUR RATING). SEE ACI 318 AND THE GENERAL BUILDING CODE FOR CONDITIONS NOT INDICATED.

A.	CONCRETE CAST AGAINST EARTH	3"
B.	CONCRETE EXPOSED TO EARTH OR WEATHER:	
a.	GRADE BEAMS (SIDES FORMED)	2" SIDES AND TOP
b.	BASEMENT WALLS AND WALLS (FORMED)	
	• #5 BARS AND SMALLER	1 1/2" EXTERIOR FACE
	• #6 BARS AND GREATER	2" EXTERIOR FACE
c.	PILASTERS	
	• #3 TIES OR SPIRALS	1 5/8"
	• #4 OR #5 TIES / SPIRALS	1 1/2"
d.	SLABS	
	• #5 BARS AND SMALLER	1 1/2" 1 3/4" BOTTOM AT DISCONT. SPANS (3 OR 4 HR. RATING)
	• #6 BARS AND GREATER	2"
C.	CONCRETE NOT EXPOSED TO EARTH, WEATHER OR CORROSIVE ENVIRONMENTS:	
a.	WALLS	3/4"
b.	PILASTERS	1 5/8" #3 TIES OR SPIRALS 1 1/2" OTHERWISE
c.	SLABS	1" BOTTOM AT DISCONT. SPANS 1 1/4" BOTTOM AT DISCONT. SPANS (3 HOUR RATING) 1 3/4" BOTTOM AT DISCONT. SPANS (4 HOUR RATING) 3/4" OTHERWISE
d.	COMPOSITE DECK SLABS	3/4" TOP

5. REINFORCING STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

   A. DEFORMED BAR REINFORCEMENT, #3 BARS THROUGH # 18 BARS, PER ASTM A615 - GRADE 60.
   B. WELDABLE DEFORMED BAR REINFORCEMENT PER ASTM A706. WELDING PER AWS D1.4.
   C. WELDED PLAIN WIRE REINFORCEMENT (WWR) OF COLD-DRAWN WIRE (70,000 PSI YIELD) PER ASTM A185.
   D. HEADED SHEAR STUD REINFORCEMENT (STUD RAILS) PER ASTM A1044.

6. STRUCTURAL FIBERS SHALL CONFORM TO MACRO SYNTHETIC, MONOFILAMENT, "COARSE FIBERS" MADE FROM VIRGIN POLYOLEFIN THAT HAVE AN EQUIVALENT DIAMETER OF AT LEAST 0.016-INCHES (0.4 MM) BUT NOT GREATER THAN 0.05-INCHES (1.25 MM) WITH A MINIMUM ASPECT RATIO OF (LENGTH/EQUIVALENT DIAMETER) OF AT LEAST 90 PER ASTM C1399 AND ASTM C1609.

7. DETAILING OF CONCRETE REINFORCEMENT AND ACCESSORIES SHALL CONFORM TO ACI 315.

8. SPLICE REINFORCING BARS ONLY AS INDICATED ON DRAWINGS EXCEPT LAP SPLICE REINFORCING BARS DESIGNATED AS "CONTINUOUS" OR "CONT." WITH CLASS B LAP SPLICES. LAP SPLICE CONTINUOUS REINFORCING BARS AT SUPPORTS FOR BOTTOM BARS AND AT MIDSPAN FOR TOP AND SIDE BARS.

9. HOOK UNSCHEDULED TOP AND SIDE REINFORCING BARS AT DISCONTINUOUS ENDS.

10. PLACING REINFORCEMENT:

    A. LAP WELDED WIRE REINFORCEMENT AT LEAST ONE CROSS WIRE SPACING PLUS 2" BUT NOT LESS THAN 8 INCHES.

11. LOCATE JOINTS NOT INDICATED TO LEAST IMPAIR STRENGTH AND APPEARANCE OF STRUCTURE.

    A. LOCATE HORIZONTAL JOINTS IN CONCRETE ONLY WHERE THEY NORMALLY OCCUR OR WHERE INDICATED.

12. ROUGHEN SURFACE OF HORIZONTAL OR NEARLY HORIZONTAL CONSTRUCTION JOINTS TO EXPOSE AGGREGATE UNIFORMLY, LEAVING NO LAITANCE, LOOSENED PARTICLES OR DAMAGED CONCRETE.

13. FOR SLABS-ON-GRADE REINFORCED WITH MACRO-SYNTHETIC FIBER REINFORCEMENT OR DEFORMED BAR CONCRETE REINFORCEMENT, 12 FEET IS MAXIMUM SPACING FOR CONTROL JOINTS.

14. PROVIDE CHAMFERS, DRIP LEDGES, SCUPPERS AND WASHES AS DETAILED ON ARCHITECTURAL DRAWINGS.

15. CONCRETE ELEMENTS EXPOSED TO WEATHER ARE NOT WATER TIGHT AND WILL DEVELOP CRACKS. CONFIRM REQUIREMENTS FOR SEALING AND/OR TREATING OF CONCRETE WITH ARCHITECTURAL DRAWINGS.

16. DO NOT PLACE SLEEVES OR OPENINGS THROUGH GRADE BEAMS UNLESS INDICATED ON THE STRUCTURAL DRAWINGS OR ACCEPTED IN WRITING BY ARCHITECT / ENGINEER. SLEEVES OR OPENINGS 12-INCH SQUARE OR SMALLER MAY BE PLACTED IN WALLS AND ONE-WAY SLABS.

STRUCTURAL PRECAST CONCRETE NOTES

1. COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE PRECAST / PRESTRESSED CONCRETE INSTITUTE (PCI) AND THE AMERICAN CONCRETE INSTITUTE (ACI) STANDARDS.

2. PROVIDE STRUCTURAL STEEL EMBEDDED ITEMS CONFORMING TO ASTM A36, UNLESS NOTED OTHERWISE.

3. PRECAST SUPPLIER SHALL DESIGN, FABRICATE AND INSTALL CONNECTIONS UNLESS NOTED OTHERWISE ON THE DRAWINGS.

4. GALVANIZE EMBEDDED ITEMS EXPOSED TO THE ELEMENTS AND WHERE INDICATED ON THE DRAWINGS ACCORDING TO ASTM A123. TOUCH-UP FIELD WELDS ON GALVANIZED ITEMS WITH PAINT CONFORMING TO TT-P-641.

5. FOR STRUCTURAL PRECAST CONCRETE ELEMENTS, SUBMIT SHOP DRAWINGS AND SUPPORTING CALCULATIONS PERFORMED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF ILLINOIS.

REINFORCED CONCRETE MASONRY NOTES

1. COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE (ACI), THE AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) AND THE MASONRY SOCIETY (TMS) STANDARDS.

2. REINFORCED GROUTED MASONRY IS DESIGNED FOR AN F'm OF 2,500 PSI USING MEDIUM WEIGHT MASONRY BLOCKS WITH 2 CELLS PER 16" LENGTH OF BLOCK. UNLESS NOTED OTHERWISE, USE RUNNING BOND CONSTRUCTION.

3. IN ADDITION TO NOTE 2, REINFORCED GROUTED MASONRY IS DESIGNED FOR THE FOLLOWING:

   A. F'cmu = 3,250 PSI
   B. F'g = 2,500 PSI

4. FURNISH DEFORMED BAR REINFORCING, #3 BARS THROUGH #11 BARS, CONFORMING TO ASTM A615, GRADE 60.

5. VERTICALLY REINFORCE GROUTED MASONRY AS INDICATED ON PLANS AND SCHEDULES. IF NOT INDICATED, PROVIDE #4 @ 48" VERTICAL REINFORCEMENT.

6. UNLESS NOTED OTHERWISE, DOWEL REINFORCED MASONRY WALLS INTO SUPPORTS WITH MATCHING SIZE AND SPACING OF WALL VERTICAL REINFORCEMENT.

7. LAP SPLICE REINFORCEMENT 48 BAR DIAMETERS BUT NOT LESS THAN 18".

8. HORIZONTALLY REINFORCE GROUTED MASONRY WITH A MINIMUM OF TWO 9 GAUGE OR 3/16" DIAMETER WIRES IN A TRUSS TYPE CONFIGURATION AT 16" IN BED JOINTS. SEE DRAWINGS FOR ADDITIONAL HORIZONTAL REINFORCEMENT REQUIREMENTS.

9. LOCATE BOND BEAMS VERTICALLY AT 10 FEET MAXIMUM, AT SILLS AND TOP OF WALLS. REINFORCE BOND BEAMS WITH ___ CONTINUOUS BARS; UNLESS NOTED OTHERWISE IN THE DRAWINGS. OMIT HORIZONTAL BED JOINT REINFORCEMENT WHERE BOND BEAMS OCCUR.

10. PROVIDE VERTICAL CONTROL JOINTS IN REINFORCED MASONRY WALLS WITH SPACING NOT TO EXCEED 20 FEET. PROVIDE #4 x 4'-0" LONG SMOOTH DOWELS AT 16" ACROSS THE JOINT. PREVENT BOND BETWEEN THE BAR AND GROUT WITH GREASE OR PLASTIC SLEEVE. CAP DOWELS TO ALLOW FOR 1" OF MOVEMENT.

11. LOCATE VERTICAL CONTROL JOINTS AT EXTERIOR EXPOSED REINFORCED MASONRY WALLS AT THE FOLLOWING LOCATIONS AT A MINIMUM AND AS INDICATED ON THE ARCHITECTURAL DRAWINGS:

    A. ABRUPT CHANGES IN WALL HEIGHT.
    B. CHANGES IN WALL THICKNESS.
    C. CENTERED OVER JOINTS IN FOUNDATION WALLS.
    D. AT A MAXIMUM OF ONE-HALF THE INDICATED TYPICAL JOINT SPACING FROM BONDED WALL INTERSECTIONS, CORNERS OR CHANGES IN WALL DIRECTION.

STRUCTURAL STEEL NOTES

1. COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) STANDARDS.

2. STRUCTURAL STEEL MATERIAL REQUIREMENTS:

   A. WIDE FLANGED AND TEE SHAPES SHALL CONFORM TO ASTM A992.
   B. PLATES, ANGLES AND CHANNELS SHALL CONFORM TO ASTM A36.
   C. ROUND HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO ASTM A500, GRADE C (Fy = 46 KSI).
   D. SQUARE AND RECTANGULAR HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO ASTM A500, GRADE C (Fy = 50 KSI).
   E. ANCHOR RODS SHALL CONFORM TO ASTM F1554 – GRADE 55 UNLESS NOTED OTHERWISE ON THE DRAWINGS.

3. STRUCTURAL STEEL CONNECTION REQUIREMENTS:

   A. STRUCTURAL STEEL DETAILS AND CONNECTIONS SHALL CONFORM TO THE STANDARDS OF THE AISC.
   B. SPLICING OF STRUCTURAL STEEL MEMBERS WHERE NOT INDICATED IS PROHIBITED.
   C. SELECT CONNECTIONS NOT INDICATED ON DRAWINGS FROM APPROPRIATE TABLES OF THE AISC MANUAL.
   D. DESIGN BEAM-TO-BEAM AND BEAM-TO-COLUMN SHEAR CONNECTIONS FOR 40% OF SHEAR CAPACITY OF WEB, OR REACTION INDICATED ON DRAWINGS, WHICHEVER IS GREATER.
   E. WELDING OF STRUCTURAL STEEL SHALL CONFORM TO AWS D1.1. USE E70XX ELECTRODES FOR FIELD AND SHOP WELDS. USE ONLY LOW-HYDROGEN ELECTRODES ON ASTM A242, A514, A572 AND A588 STEEL.
   F. PROVIDE CONTINUOUS FILLET WELDS MEETING THE MINIMUM REQUIREMENTS OF AISC WITH A MINIMUM SIZE OF 3/16" UNLESS NOTED OTHERWISE.
   G. CONNECTION BOLTS FOR STRUCTURAL STEEL MEMBERS SHALL CONFORM TO ASTM A325 OR A490, UNLESS NOTED OTHERWISE.
   H. SUBMIT DESIGN CALCULATIONS CONCURRENTLY WITH THE SHOP DRAWINGS FOR STRUCTURAL STEEL CONNECTIONS UNLESS DESIGN IS SPECIFICALLY INDICATED ON THE DRAWINGS. DESIGN CALCULATIONS SHALL BE BASED UPON LOADING CRITERIA INDICATED ON THE DRAWINGS AND SHALL BE PERFORMED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF ILLINOIS.

4. PAINT STRUCTURAL STEEL NOT RECEIVING FIREPROOFING ACCORDING TO SPECIFICATIONS, UNLESS NOTED OTHERWISE. SEE ARCHITECTURAL DRAWINGS FOR FIREPROOFING REQUIREMENTS.

5. TOUCH UP FIELD WELDS AND CONNECTIONS OF PAINTED STRUCTURAL STEEL WITH SAME PAINT AS USED IN SHOP.

6. UNLESS NOTED OTHERWISE, GALVANIZE STRUCTURAL STEEL MEMBERS AND EMBEDS EXPOSED TO ELEMENTS AND WHERE INDICATED ON DRAWINGS. GALVANIZING SHALL CONFORM TO ASTM A123. SEAL WELD CONNECTIONS PRIOR TO GALVANIZING. TOUCH UP FIELD WELDS ON GALVANIZED ITEMS WITH PAINT CONFORMING TO TT-P-641.

7. ERECT STEEL BEAMS WITH CAMBER AS INDICATED ON DRAWINGS. BEAMS WITH SPECIFIED CAMBER OF 1/2" OR GREATER SHALL BE PHYSICALLY CAMBERED. IF CAMBER IS NOT INDICATED ON THE DRAWINGS, BEAMS ARE TO BE FABRICATED AND ERECTED WITH "INCIDENTAL" CAMBER UP.

8. AUTOMATICALLY END WELD HEADED STUDS AND DEFORMED BARS WHERE INDICATED ON DRAWINGS.

STEEL JOIST NOTES

1. COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE STEEL JOIST INSTITUTE (SJI) STANDARDS.

2. PROVIDE STEEL JOISTS WITH DOUBLE ANGLE TOP AND BOTTOM CHORDS.

3. DESIGN STEEL JOISTS AT ROOF FOR NET UPLIFT NORMAL TO ROOF SURFACE OF 15 PSF.

4. ATTACH CONCENTRATED LOADS TO JOISTS AT JOIST PANEL POINTS ONLY.

5. WHERE JOIST BOTTOM CHORD EXTENSIONS ARE INDICATED, DO NOT ATTACH TO COLUMNS, BEAMS, OR WALLS UNTIL ROOF DEAD LOAD IS IN PLACE.

6. PROVIDE JOIST BRIDGING ACCORDING TO SJI REQUIREMENTS.

7. DESIGN STEEL JOIST DIAGONAL WEB MEMBERS LOCATED WITHIN THE MIDDLE ¼ OF THE SPAN FOR A COMPRESSION FORCE OF AT LEAST 10% OF THE JOIST END REACTION.

8. JOIST SEATS AT DIAPHRAGM BOUNDARIES, LATERAL LOAD RESISTING ELEMENTS AND COLLECTOR ELEMENTS SHALL HAVE THE CAPACITY TO RESIST A MINIMUM LATERAL LOAD OF 2000 LBS. APPLIED PERPENDICULAR TO THE TOP OF THE JOIST SEAT (ROLLOVER). SEE PLAN FOR LOCATION AND MAGNITUDE OF JOIST SEATS REQUIRING INCREASED ROLLOVER CAPACITY.

9. DESIGN STEEL JOISTS FOR TRAVELING PROVISIONAL LOADS, OF WHICH ONE CONCENTRATED LOAD OF 300 LBS. MAY BE PLACED BETWEEN ANY TWO TOP CHORD PANEL POINTS AND A CONCENTRATED LOAD OF 100 LBS. MAY BE PLACED BETWEEN ANY TWO BOTTOM CHORD PANEL POINTS.

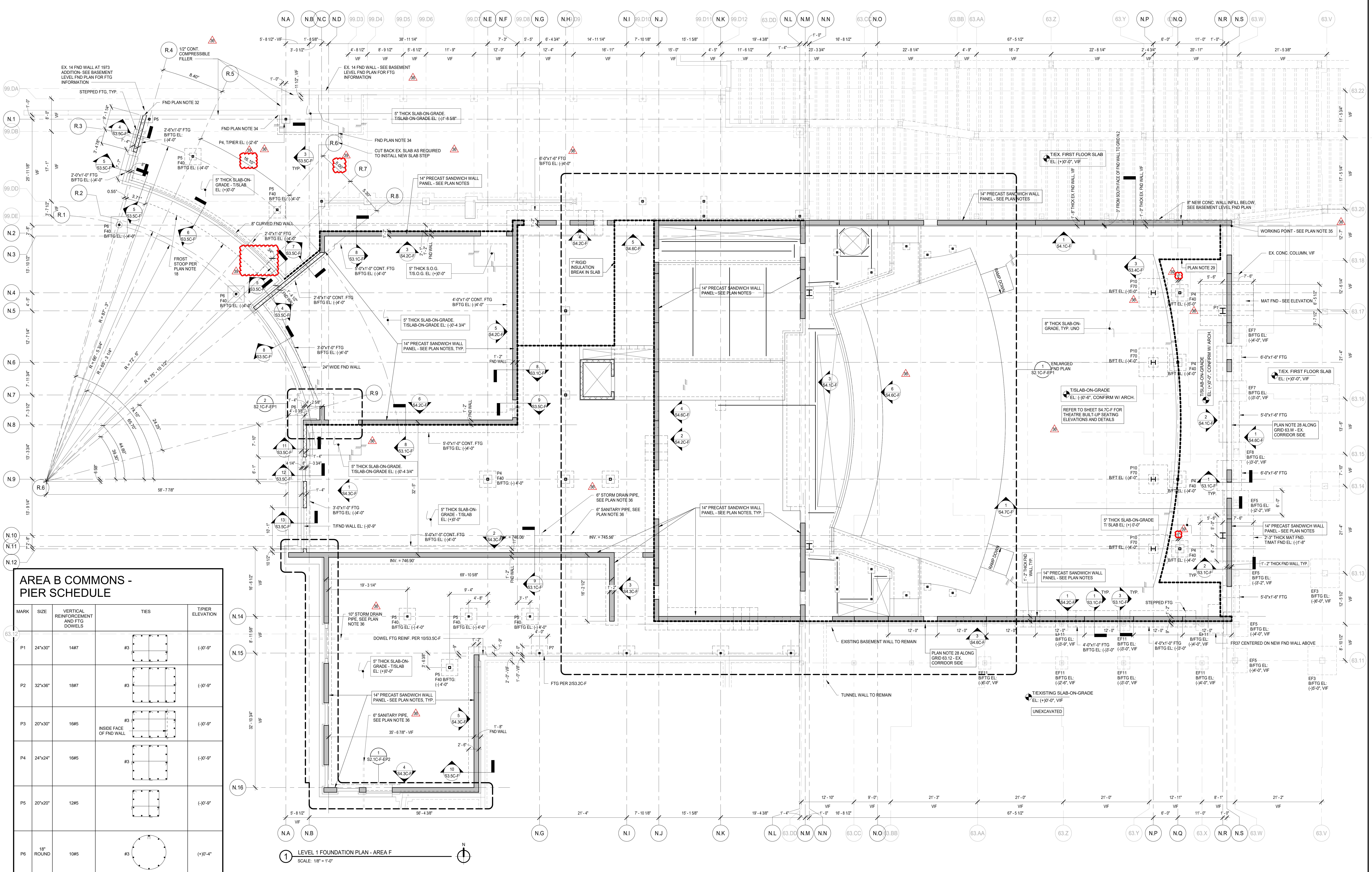
SPECIAL DESIGN JOIST NOTES

1. COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE STEEL JOIST INSTITUTE (SJI) STANDARDS.

2. SEE SHEET S4.5C-F FOR SPECIAL DESIGN JOIST SCHEMATIC LOADING. LOADING INDICATED ON DRAWINGS INDICATES BOTH IMPOSED DEAD LOAD (D) AND IMPOSED LIVE LOAD (L). DEAD LOADING INCLUDES JOIST SELF WEIGHT.

3. DESIGN JOISTS IN EITHER OF FOLLOWING WAYS:

   A. DESIGN



1 LEVEL 1 FOUNDATION PLAN - AREA F

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

AREA B COMMONS - PIER SCHEDULE

MARK	SIZE	VERTICAL REINFORCEMENT AND FTG DOWELS	TIES	T/PIER ELEVATION
P1	24"x30"	14#7	#3	(-)0'-9"
P2	32"x36"	18#7	#3	(-)0'-9"
P3	20"x30"	16#5	#3 INSIDE FACE OF FND WALL	(-)0'-9"
P4	24"x24"	16#5	#3	(-)0'-9"
P5	20"x20"	12#5		(-)0'-9"
P6	18" ROUND	10#5	#3	(+)0'-4"
P7	18"x20"	12#5	#3	(-)0'-9"
P8	20"x20"	12#5	#3	(-)3'-9"
P9	20"x20"	16#5	#3	(-)1'-2"
P10	30"x30"	16#7	#3	(-)1'-3"
P11	24"x34"	18#7	#3 INSIDE FACE OF FND WALL	(-)1'-3"

PLAN NOTES

1. SEE S0 SERIES DRAWINGS FOR GENERAL NOTES, ABBREVIATIONS, SYMBOLS AND LINTEL SCHEDULES AND MATERIAL ALLOWANCES.
2. SEE S1 SERIES DRAWINGS FOR TYPICAL SECTIONS AND DETAILS.
3. SEE S3 SERIES DRAWINGS FOR NON-TYPICAL SECTIONS AND DETAILS.
4. SEE S4 SERIES DRAWINGS FOR ELEVATIONS.
5. SEE S5 SERIES DRAWINGS FOR SCHEDULES.
6. CENTERLINE OF SPREAD FOOTING IS ON GRIDLINE, TYPICAL UNLESS NOTED OTHERWISE.
7. SEE S1.1C FOR TYPICAL SPREAD FOOTING DETAIL AND SPREAD FOOTING SCHEDULE.
8. SEE S2.0C-F AND S2.1C-F FOR CONCRETE PIER SCHEDULE.
9. ESTABLISH BOTTOM OF FOOTINGS IN STRATUM AS INDICATED. ELEVATIONS GIVEN ARE FOR BIDDING/ESTIMATING PURPOSES ONLY. ON-SITE INSPECTION OF FOUNDATION BEARING STRATA SHALL BE CONDUCTED DURING CONSTRUCTION BY A QUALIFIED GEOTECHNICAL ENGINEER.
10. CENTERLINE OF COLUMN IS ON GRIDLINE. TYPICAL UNLESS NOTED OTHERWISE.
11. SEE PLANS FOR COLUMN ORIENTATION AND COLUMN CENTERLINE TO GRIDLINE DIMENSIONS FOR OFFSET COLUMNS.
12. SEE PLANS FOR TOP OF ROUGH SLAB ELEVATION.
13. UNLESS NOTED OTHERWISE ON FOUNDATION PLANS, SLAB-ON-GRADE SHALL BE 5" THICK CONCRETE SLAB OVER PREPARED SUBGRADE. REINFORCE WITH 4 LBS/CU. YD. OF STRUX 90/40 MACROSYNTHETIC FIBERS OR EQUIVALENT.
14. SLAB-ON-GRADE UNDER AUDITORIUM BUILT-UP COLD-FORMED METAL FRAMING SEATING SHALL BE 8" THICK CONCRETE SLAB OVER PREPARED SUBGRADE. REINFORCE WITH 4 LBS/CU. YD. OF STRUX 90/40 MACROSYNTHETIC FIBERS OR EQUIVALENT.
15. PROVIDE THICKENED SLAB AND DOWELS TO CMU WALLS (IN GROUTED CELLS) AT SLAB-ON-GRADE IN ACCORDANCE WITH TYPICAL SECTIONS AND DETAILS. SEE ARCHITECTURAL DRAWINGS FOR CMU WALL SIZE, LOCATION, REINFORCEMENT, TOP-OF-WAL CONNECTION AND CURB, IF ANY.
16. SEE ARCHITECTURAL DRAWINGS FOR CURBS NOT INDICATED (SIZE AND LOCATION). SEE TYPICAL SECTIONS AND DETAILS FOR CURB REINFORCEMENT.
17. SEE TYPICAL DETAILS FOR ELECTRICAL GROUNDING DETAIL AND REQUIREMENTS FOR A CONCRETE ENCASED GROUNDING ELECTRODE. COORDINATE WITH ELECTRICAL CONTRACTOR.
18. FROST STOOP SHALL CONSIST OF STONE FILLED FREE DRAINING MATERIAL, DOWN TO 4'-0" BELOW FINISH GRADE, TYP. SEE ARCH. DRAWINGS FOR PROPER LOCATION OF COMPRESSIBLE 1/2" THICK JOINT FILLER BETWEEN THE INTERIOR SLAB-ON-GRADE AND THE EXTERIOR FLATWORK, WHERE APPLICABLE, TYP.
19. PROVIDE CONTROL JOINTS IN THE SLAB-ON-GRADE AT COLUMN CENTERLINES AND 12' CTS MAX AT REMAINDER. SEE TYPICAL DETAILS 10 AND 14 ON S1.1C FOR CONTROL JOINT AND COLUMN ISOLATION JOINT DETAILS.
20. EXTERIOR BACKUP CMU WALLS SHALL BE 10" THICK WITH #5@48" VERTICAL REINFORCEMENT IN SOLID GROUTED CELLS PLUS MATCHING DOWELS x 5'-6" (2'-9" CONC. EMBED).
21. B/NEW FOOTINGS ADJACENT TO EXISTING FOUNDATIONS SHALL MATCH THE BOTTOM OF THE EXISTING FOUNDATIONS, SEE PLAN, VIF.
22. T/FND WALL EL: (+)0'-0", TYP. UNO. 36
23. T/FND WALL ELEVATION AT DOOR SHALL BE 9" BELOW T/SLAB-ON-GRADE, TYP. UNO
24. ** INDICATES DIMENSIONS TO BE COORDINATED WITH ELEVATOR MANUFACTURER.
25. SEE BASEMENT LEVEL FOUNDATION PLAN FOR WALL THICKNESSES. 36
26. ALL WALL PANELS ARE 14" THICK REINFORCED PRECAST SANDWICH WALLS PANELS WITH 4" INSULATION CENTERED ON THE PANEL. SEE ARCHITECTURE DRAWINGS FOR WALL PANEL WIDTHS, JOINT LOCATIONS AND REVEAL LOCATIONS, TYP. WALL PANELS BEAR ON 14" THICK FOUNDATION WALL, TYP. UNO. 36
27. MEPFP INSTALLING CONTRACTOR(S) SHALL SUBMIT EXISTING ELEVATED FLOOR PLANS INDICATING ALL MEPFP FLOOR PENETRATION SIZES AND LOCATIONS FOR EOR REVIEW. EOR APPROVAL IS REQUIRED PRIOR TO THE START OF CORING ACTIVITIES. COORDINATE THE TIMING OF THE SUBMITTAL ACCORDINGLY.
28. REMOVE EXISTING SLAB-ON-GRADE AS REQUIRED TO INSTALL NEW FOUNDATIONS. REPLACE THE SLAB-ON-GRADE IN KIND, PER TYPICAL DETAILS.
29. 1" RIGID INSULATION BREAK IN SLAB (FULL DEPTH) - SEE ARCH. FOR LOCATION. PROVIDE THICKENED SLAB ON BOTH SIDES OF BREAK.
30. BACKFILL SHALL BE COMPLETED OVER THE HATCHED PORTION OF THE MAT FOUNDATION FROM BASEMENT LEVEL TO LEVEL 1, PRIOR TO THE PRECAST ERECTION TAKING PLACE. 36
31. 3 1/2" NWT CONCRETE ON 9/16" (24 GA.) METAL FORM DECK OVER CFMF JOIST FRAMING OVER OPEN DUCT SHAFT OVER 5" SLAB-ON-GRADE. UPPER CONCRETE TOPPING SHALL BE 4" TOTAL THICKNESS. REINFORCE UPPER CONCRETE TOPPING W/ 4LBS/CU. YD. OF STRUX 90/40 MACROSYNTHETIC FIBERS OR EQUIV. FASTEN WITH #12 TEK SCREWS AT 12" O.C. TO CFMF JOISTS. COLD-FORMED METAL FRAMING (CFMF) JOISTS SHALL BE DESIGNED AND DETAILED BY OTHERS. DESIGN CFMF FOR SELF WEIGHT OF THE SLAB, SUPERIMPOSED DEAD LOAD OF 20 PSF AND LIVE LOAD OF 100 PSF.
32. DRILL & EPOXY GROUT HORIZONTAL WALL AND WALL FOOTING REINFORCEMENT INTO EXISTING FOUNDATION WITH 6" MIN. EMBED.
33. DRILL & EPOXY GROUT HORIZONTAL WALL AND WALL FOOTING REINFORCEMENT INTO EXISTING FOUNDATION WITH 9" MIN. EMBED.
34. DRILL & EPOXY GROUT HORIZONTAL WALL REINFORCEMENT INTO EXISTING FOUNDATION WITH 3" MIN. EMBED. 36
35. WORKING POINT SHALL BE LOCATED AS FOLLOWS:
    - AT THE SOUTH FACE OF THE EXISTING NORTH FOUNDATION WALL
    - 3" WEST OF THE SPECIFIED DEMOLITION LINE
    - DEMOLITION LINE IS SHALL BE LOCATED 3" WEST OF THE WESTERN FACE OF THE EXISTING
    - COLUMN ON GRID 63.W
36. UNDERGROUND PIPING IS CROSSING WALL FOOTINGS. SEE PLUMBING DRAWINGS FOR PIPE LOCATIONS AND INVERT ELEVATIONS. DETAIL THE WALL FOOTING AT PIPE LOCATION PER TYPICAL DETAIL 4/S1.1C, TYPICAL PIPE THROUGH CONT. FOOTING DETAILS.

NOT FOR CONSTRUCTION

DISTRICT 99

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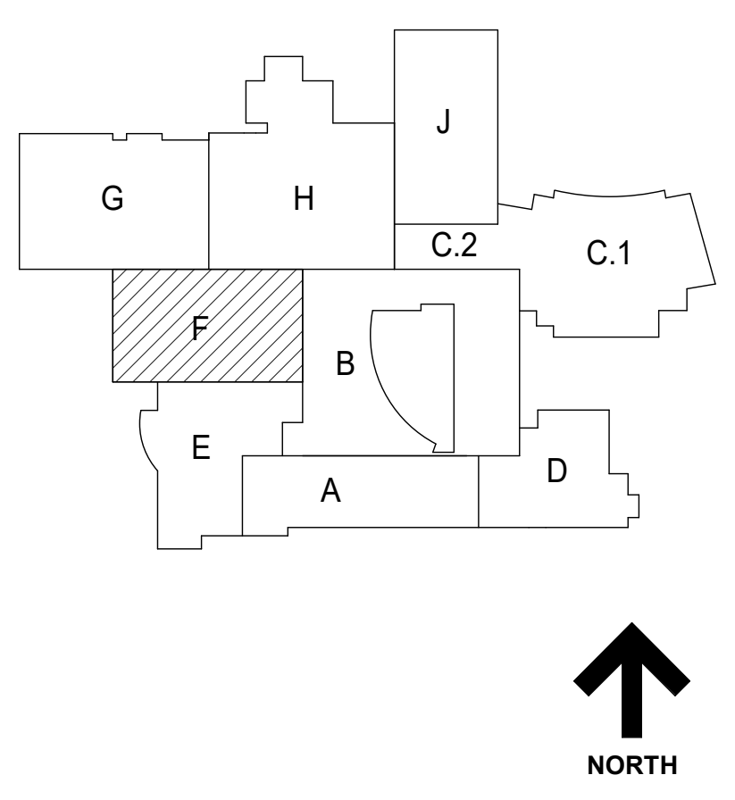


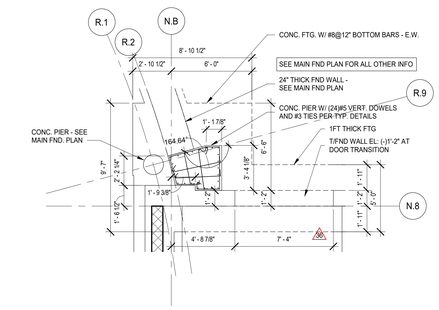
REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019
36	ADDENDUM 2 – BG8	12.04.2019
	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019
	ISSUED FOR 90% CD - PHASE C	11.1.2019
	ISSUED FOR 75% CD - PHASE C	10.14.2019
	ISSUED FOR 25% CD - PHASE C	8.30.2019

MFP IMPLEMENTATION - SOUTH

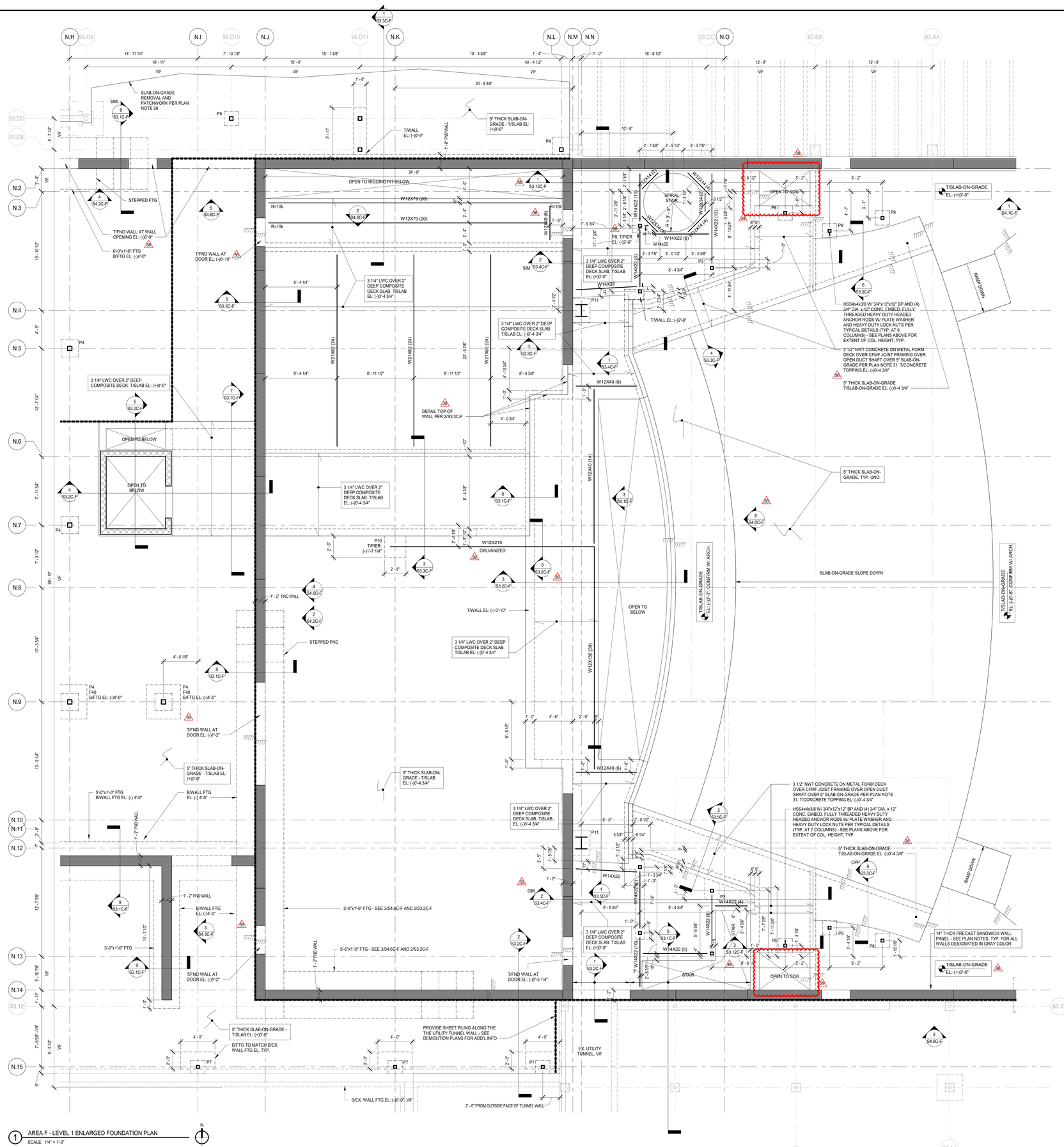
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

LEVEL 1 FOUNDATION PLAN - AREA F

Project Number:
5274-42
Drawn By:
J.G.
Sheet:
S2.1C-F



2 ENLARGED FOUNDATION PLAN
SCALE: 1/4" = 1'-0"



1 AREA F - LEVEL 1 ENLARGED FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

DISTRICT 99

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39	ADDENDUM 3 - BG8	12.11.2019
36	ADDENDUM 2 – BG8	12.04.2019
	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019

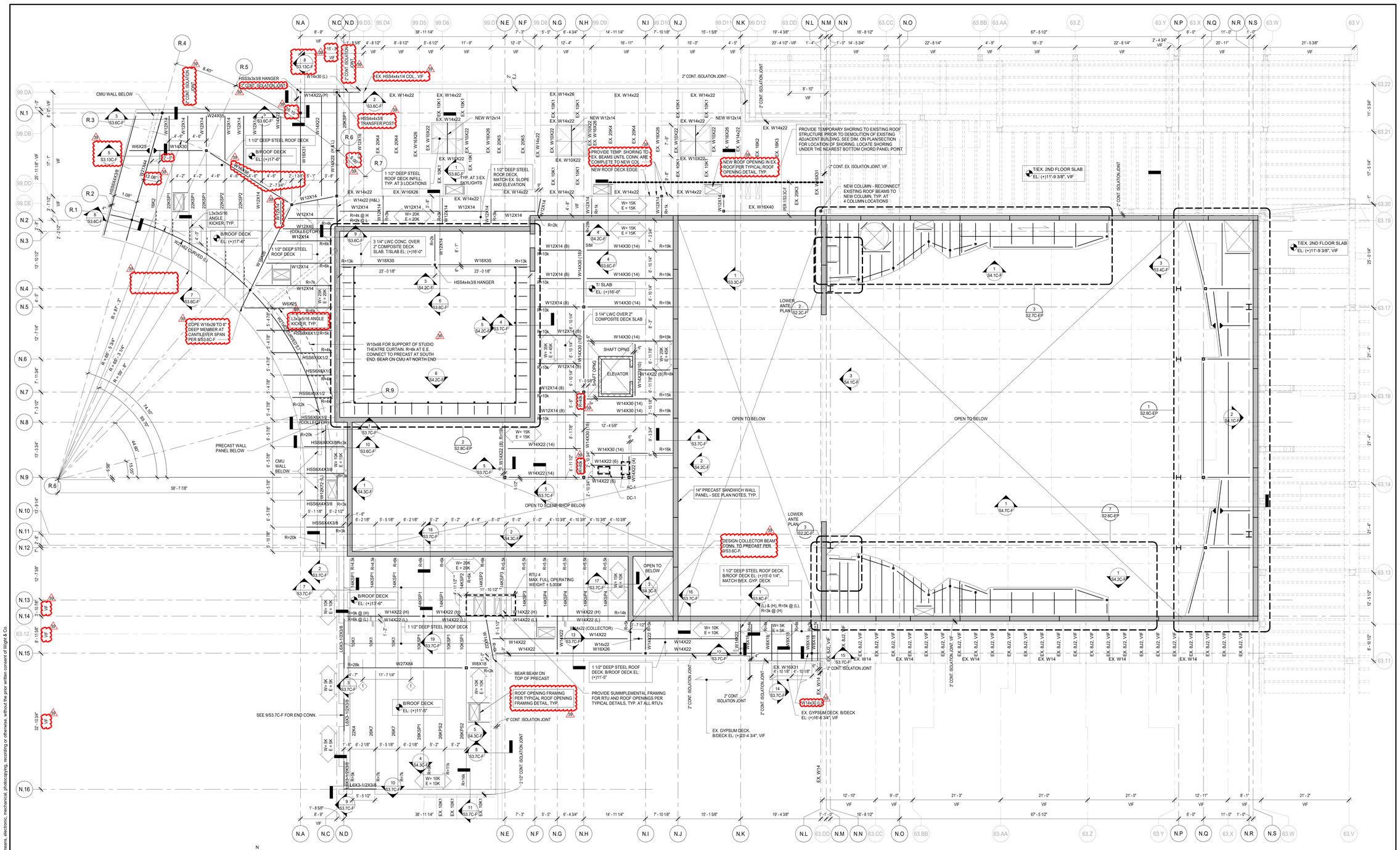
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

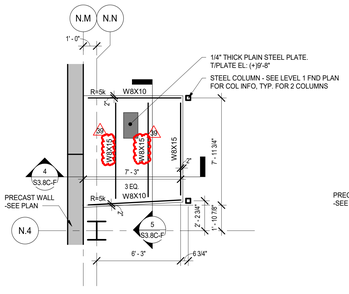
ENLARGED FOUNDATION PLANS

Project Number:
5274-42
Drawn By:
J.G.
Sheet:

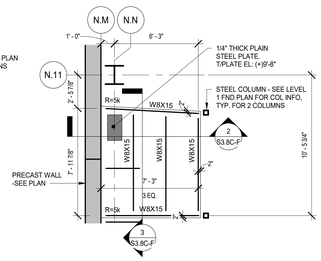
S2.1C-F-EP1



1 LEVEL 2/LOW ROOF FRAMING PLAN - AREA F
SCALE: 1/8" = 1'-0"



2 ENLARGED LOWER ANTE PLAN
SCALE: 1/4" = 1'-0"



3 ENLARGED LOWER ANTE PLAN
SCALE: 1/4" = 1'-0"

PLAN NOTES

1. SEE S0 SERIES DRAWINGS FOR GENERAL NOTES, ABBREVIATIONS, SYMBOLS AND LINTEL SCHEDULES.
2. SEE S1 SERIES DRAWINGS FOR TYPICAL SECTIONS AND DETAILS.
3. SEE S3 SERIES DRAWINGS FOR NON-TYPICAL SECTIONS AND DETAILS.
4. SEE S4 SERIES DRAWINGS FOR ELEVATIONS AND S5 SERIES FOR SCHEDULES.
5. CENTERLINE OF COLUMN IS ON GRIDLINE. TYPICAL UNLESS NOTED OTHERWISE.
6. SEE PLANS FOR COLUMN ORIENTATION AND COLUMN CENTERLINE TO GRIDLINE DIMENSIONS FOR OFFSET COLUMNS.
7. SEE PLANS FOR TOP OF ROUGH SLAB ELEVATION.
8. (H) AS INDICATED ON PLAN INDICATES HIGHER BEAM OF FRAMING MEMBERS IN SAME VERTICAL PLANE.
9. (L) AS INDICATED ON PLAN INDICATES LOWER BEAM OF FRAMING MEMBERS IN SAME VERTICAL PLANE.
10. SEE ARCHITECTURAL DRAWINGS FOR CURBS NOT INDICATED (SIZE AND LOCATION). SEE TYPICAL SECTIONS AND DETAILS FOR CURB REINFORCEMENT.
11. AT ELEVATED FLOOR LEVELS, FLOOR DECK SHALL BE 3 1/4" THICK LIGHTWEIGHT CONCRETE OVER 2" DEEP COMPOSITE STEEL FLOOR DECK, UNLESS NOTED OTHERWISE. REINFORCE SLAB WITH 4.0 LBS/CU.YD. OF STRUX 90/40 MACROSYNTHETIC FIBER REINFORCEMENT OR EQUIVALENT, TYP. UNO.
12. OTHERWISE, FLOOR DECK SHALL BE 4" NORMAL WEIGHT CONCRETE OVER 2" DEEP NON-COMPOSITE STEEL FORM DECK. REINFORCE SLAB WITH 6x6-W2.1xW2.1 WELDED WIRE REINFORCEMENT. SUBSTITUTES ARE NOT PERMITTED FOR THE WELDED WIRE REINFORCEMENT.
13. SEE PLAN FOR BOTTOM OF STEEL DECK ELEVATIONS, TYPICAL UNLESS NOTED OTHERWISE.
14. STUDIO THEATRE ROOF, AUDITORIUM ROOF AND FLY GALLERY ROOF SHALL CONSIST OF FLOOR DECK OF 3" THICK NORMAL-WEIGHT CONCRETE OVER 3" DEEP COMPOSITE STEEL FLOOR DECK. REINFORCE SLAB WITH 4.0 LBS/CU.YD. OF STRUX 90/40 MACROSYNTHETIC FIBER REINFORCEMENT OR EQUIVALENT.
15. OTHERWISE, ROOF DECK SHALL BE 1 1/2" DEEP STEEL ROOF DECK.
16. PROVIDE A HANGER CONNECTION AT EACH W24 STUDIO THEATRE ROOF BEAM FOR THE SUPPORT OF W8x31 RIGGING BEAM, TYP. AT ALL W8x31 RIGGING BEAMS. DESIGN HANGER CONNECTION FOR SERVICE LEVEL VERTICAL END REACTION = 3 KIPS.
17. PROVIDE L5x5x5/16 STEEL ANGLE OR BENT PLATE AT ROOF PERIMETER AND AT INTERIOR OPENINGS IN ACCORDANCE WITH TYPICAL DETAILS.
18. SEE S4.4C-F AND S4.5C-F FOR ROOF TRUSS AND SPECIAL DESIGN JOIST SCHEMATIC LOADINGS.
19. SUSPEND PIPE HANGERS AND OTHER MECHANICAL EQUIPMENT FROM DESIGNATED OR APPROVED STEEL JOISTS. LOCATE CONCENTRATED LOADS AT JOIST PANEL POINTS ONLY OR REINFORCE STEEL JOISTS IN ACCORDANCE WITH TYPICAL SECTIONS AND DETAILS.
20. PLACE SUPPORTS FOR ROOF TOP EQUIPMENT LOADS ON DESIGNATED OR APPROVED STEEL JOISTS. LOCATE CONCENTRATED LOADS AT JOIST PANEL POINTS ONLY OR REINFORCE STEEL JOISTS IN ACCORDANCE WITH TYPICAL SECTIONS AND DETAILS.
21. SEE TYPICAL DETAILS FOR ELECTRICAL GROUNDING DETAIL AND REQUIREMENTS FOR A CONCRETE ENCASED GROUNDING ELECTRODE. COORDINATE WITH ELECTRICAL CONTRACTOR.
22. ** INDICATES DIMENSIONS TO BE COORDINATED WITH EQUIPMENT MANUFACTURER.
23. W= xxK / E = xxK — TOTAL HORIZONTAL STRENGTH WIND FORCE (W) AND STRENGTH SEISMIC FORCE (E) FROM THE ROOF/FLOOR DIAPHRAGM OR ADJACENT WALLS TO BE RESISTED BY THE PRECAST CONCRETE SHEAR WALLS BELOW.
24. SUPPORT ALL MEPFP EQUIPMENT AND PIPING GREATER THAN 2 INCHES IN DIAMETER DIRECTLY FROM THE DESIGNATED STEEL ROOF JOISTS (TOP CHORDS ONLY) AND STEEL WIDE FLANGED BEAM AND GIRDER FRAMING. DO NOT SUPPORT THE AFOREMENTIONED FROM THE STEEL ROOF DECK DIRECTLY. ITEMS SUCH AS LIGHTWEIGHT CEILINGS AND LIGHTING MAY BE SUPPORTED DIRECTLY FROM THE STEEL ROOF DECK.
25. ALL MEP EQUIPMENT STEEL SUPPORTS SHALL BE COORDINATED WITH THE INSTALLING CONTRACTOR(S). SEE PLANS AND TYPICAL DETAILS FOR STEEL SUPPORT REQUIREMENTS.
26. COORDINATE SIZE AND QUANTITY OF ROOF DECK PENETRATIONS WITH MEPFP DRAWINGS, TYP. REINFORCE NEW PENETRATIONS IN EXISTING/NEW ROOF DECKS PER TYPICAL STRUCTURAL DETAILS.
27. MEPFP INSTALLING CONTRACTOR(S) SHALL SUBMIT EXISTING ELEVATED FLOOR PLANS INDICATING ALL MEPFP FLOOR PENETRATION SIZES AND LOCATIONS FOR EOR REVIEW. EOR APPROVAL IS REQUIRED PRIOR TO THE START OF CORING ACTIVITIES. COORDINATE THE TIMING OF SUBMITTAL ACCORDINGLY. LOCATE AND AVOID DAMAGE TO REINFORCEMENT.
28. SEE STEEL DECK NOTES ON S0.1C FOR STEEL DECK ATTACHMENT INFORMATION TO THE SUPPORT STEEL.
29. MAXIMUM LIVE LOAD DEFLECTION FOR ELEVATED SLABS @ BUILDING ENVELOPE AND INTERIOR PARTITIONS = 1.0"
30. POUR ALL ELEVATED CONCRETE SLABS TO THE SPECIFIED THICKNESS.
31. AFTER AUDITORIUM ROOF DECK AND SLAB IS INSTALLED AND CONCRETE ACHIEVES THE SPECIFIED MINIMUM COMPRESSIVE STRENGTH, REMOVE DIAGONAL CROSS BRIDGING AT THIS LOCATION ONLY.
32. AT THE NEW ADDITION (EXCLUDING SKYLIGHTS), ALL ROOFS ARE DESIGNED TO SUPPORT A MAXIMUM ALLOWED **SUPERIMPOSED DEAD LOAD** FROM THE PHOTOVOLTAIC BALLASTED SYSTEM OF **8 PSF PLUS THE ADDITIONAL DOWNWARD WIND PRESSURE** FROM THE PHOTOVOLTAIC BALLASTED SYSTEM OF **13 PSF**. SYSTEMS OTHER THAN THE PHOTOVOLTAIC BALLASTED SYSTEM ARE NOT PERMITTED.

DISTRICT 99

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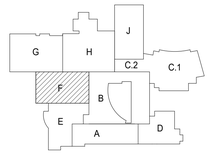

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REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019
36	ADDENDUM 2 – BG8	12.04.2019
	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019
	ISSUED FOR 90% CD - PHASE C	11.1.2019
	ISSUED FOR 75% CD - PHASE C	10.14.2019
	ISSUED FOR 25% CD - PHASE C	8.30.2019

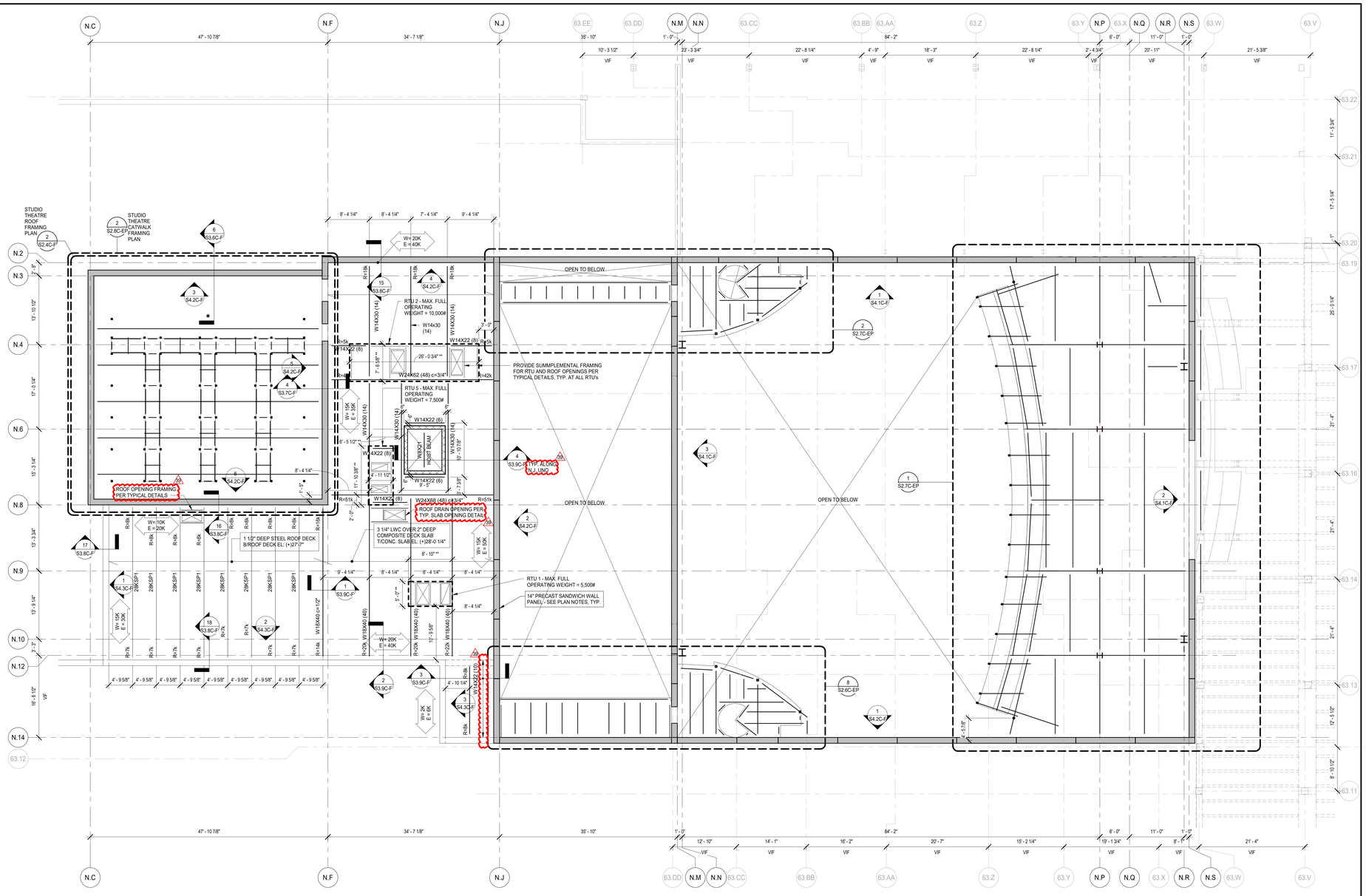
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

LEVEL 2 AND LOW ROOF FRAMING PLANS - AREA F

Project Number:
5274-42
Drawn By:
J.G.
Sheet:

S2.2C-F



1 LEVEL 3 FRAMING PLAN - AREA F

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

PLAN NOTES

1. SEE S0 SERIES DRAWINGS FOR GENERAL NOTES, ABBREVIATIONS, SYMBOLS AND LINTEL SCHEDULES.
2. SEE S1 SERIES DRAWINGS FOR TYPICAL SECTIONS AND DETAILS.
3. SEE S3 SERIES DRAWINGS FOR NON-TYPICAL SECTIONS AND DETAILS.
4. SEE S4 SERIES DRAWINGS FOR ELEVATIONS AND S5 SERIES FOR SCHEDULES.
5. CENTERLINE OF COLUMN IS ON GRIDLINE. TYPICAL UNLESS NOTED OTHERWISE.
6. SEE PLANS FOR COLUMN ORIENTATION AND COLUMN CENTERLINE TO GRIDLINE DIMENSIONS FOR OFFSET COLUMNS.
7. SEE PLANS FOR TOP OF ROUGH SLAB ELEVATION.
8. (H) AS INDICATED ON PLAN INDICATES HIGHER BEAM OF FRAMING MEMBERS IN SAME VERTICAL PLANE.
9. (L) AS INDICATED ON PLAN INDICATES LOWER BEAM OF FRAMING MEMBERS IN SAME VERTICAL PLANE.
10. SEE ARCHITECTURAL DRAWINGS FOR CURBS NOT INDICATED (SIZE AND LOCATION). SEE TYPICAL SECTIONS AND DETAILS FOR CURB REINFORCEMENT.
11. AT ELEVATED FLOOR LEVELS, FLOOR DECK SHALL BE 3 1/4" THICK LIGHTWEIGHT CONCRETE OVER 2" DEEP COMPOSITE STEEL FLOOR DECK, UNLESS NOTED OTHERWISE. REINFORCE SLAB WITH 4.0 LBS/CU.YD. OF STRUX 90/40 MACROSYNTHETIC FIBER REINFORCEMENT OR EQUIVALENT. 117, 0103, 59
12. OTHERWISE, FLOOR DECK SHALL BE 4" NORMAL WEIGHT CONCRETE OVER 2" DEEP NON-COMPOSITE STEEL FORM DECK. REINFORCE SLAB WITH 6x6-W2.1xW2.1 WELDED WIRE REINFORCEMENT. SUBSTITUTES ARE NOT PERMITTED FOR THE WELDED WIRE REINFORCEMENT.
13. SEE PLAN FOR BOTTOM OF STEEL DECK ELEVATIONS, TYPICAL UNLESS NOTED OTHERWISE.
14. STUDIO THEATRE ROOF, AUDITORIUM ROOF AND FLY GALLERY ROOF SHALL CONSIST OF FLOOR DECK OF 3" THICK NORMAL-WEIGHT CONCRETE OVER 3" DEEP COMPOSITE STEEL FLOOR DECK. REINFORCE SLAB WITH 4.0 LBS/CU.YD. OF STRUX 90/40 MACROSYNTHETIC FIBER REINFORCEMENT OR EQUIVALENT.
15. OTHERWISE, ROOF DECK SHALL BE 1 1/2" DEEP STEEL ROOF DECK.
16. PROVIDE A HANGER CONNECTION AT EACH W24 STUDIO THEATRE ROOF BEAM FOR THE SUPPORT OF W8x31 RIGGING BEAM, TYP. AT ALL W8x31 RIGGING BEAMS. DESIGN HANGER CONNECTION FOR SERVICE LEVEL VERTICAL END REACTION = 3 KIPS. 59
17. PROVIDE L5x5x5/16 STEEL ANGLE OR BENT PLATE AT ROOF PERIMETER AND AT INTERIOR OPENINGS IN ACCORDANCE WITH TYPICAL DETAILS.
18. SEE S4.4C-F AND S4.5C-F FOR ROOF TRUSS AND SPECIAL DESIGN JOIST SCHEMATIC LOADINGS.
19. SUSPEND PIPE HANGERS AND OTHER MECHANICAL EQUIPMENT FROM DESIGNATED OR APPROVED STEEL JOISTS. LOCATE CONCENTRATED LOADS AT JOIST PANEL POINTS ONLY OR REINFORCE STEEL JOISTS IN ACCORDANCE WITH TYPICAL SECTIONS AND DETAILS.
20. PLACE SUPPORTS FOR ROOF TOP EQUIPMENT LOADS ON DESIGNATED OR APPROVED STEEL JOISTS. LOCATE CONCENTRATED LOADS AT JOIST PANEL POINTS ONLY OR REINFORCE STEEL JOISTS IN ACCORDANCE WITH TYPICAL SECTIONS AND DETAILS.
21. SEE TYPICAL DETAILS FOR ELECTRICAL GROUNDING DETAIL AND REQUIREMENTS FOR A CONCRETE ENCASED GROUNDING ELECTRODE. COORDINATE WITH ELECTRICAL CONTRACTOR.
22. ** INDICATES DIMENSIONS TO BE COORDINATED WITH EQUIPMENT MANUFACTURER.
23. W = xxK / E = xxK — TOTAL HORIZONTAL STRENGTH WIND FORCE (W) AND STRENGTH SEISMIC FORCE (E) FROM THE ROOF/FLOOR DIAPHRAGM OR ADJACENT WALLS TO BE RESISTED BY THE PRECAST CONCRETE SHEAR WALLS BELOW.
24. SUPPORT ALL MEPFP EQUIPMENT AND PIPING GREATER THAN 2 INCHES IN DIAMETER DIRECTLY FROM THE DESIGNATED STEEL ROOF JOISTS (TOP CHORDS ONLY) AND STEEL WIDE FLANGED BEAM AND GIRDER FRAMING. DO NOT SUPPORT THE AFOREMENTIONED FROM THE STEEL ROOF DECK DIRECTLY. ITEMS SUCH AS LIGHTWEIGHT CEILINGS AND LIGHTING MAY BE SUPPORTED DIRECTLY FROM THE STEEL ROOF DECK.
25. ALL MEP EQUIPMENT STEEL SUPPORTS SHALL BE COORDINATED WITH THE INSTALLING CONTRACTOR(S). SEE PLANS AND TYPICAL DETAILS FOR STEEL SUPPORT REQUIREMENTS.
26. COORDINATE SIZE AND QUANTITY OF ROOF DECK PENETRATIONS WITH MEPFP DRAWINGS, TYP. REINFORCE NEW PENETRATIONS IN EXISTING/NEW ROOF DECKS PER TYPICAL STRUCTURAL DETAILS.
27. MEPFP INSTALLING CONTRACTOR(S) SHALL SUBMIT EXISTING ELEVATED FLOOR PLANS INDICATING ALL MEPFP FLOOR PENETRATION SIZES AND LOCATIONS FOR EOR REVIEW. EOR APPROVAL IS REQUIRED PRIOR TO THE START OF CORING ACTIVITIES. COORDINATE THE TIMING OF SUBMITTAL ACCORDINGLY. LOCATE AND AVOID DAMAGE TO REINFORCEMENT.
28. SEE STEEL DECK NOTES ON S0.1C FOR STEEL DECK ATTACHMENT INFORMATION TO THE SUPPORT STEEL.
29. MAXIMUM LIVE LOAD DEFLECTION FOR ELEVATED SLABS @ BUILDING ENVELOPE AND INTERIOR PARTITIONS = 1.0"
30. POUR ALL ELEVATED CONCRETE SLABS TO THE SPECIFIED THICKNESS.
31. AFTER AUDITORIUM ROOF DECK AND SLAB IS INSTALLED AND CONCRETE ACHIEVES THE SPECIFIED MINIMUM COMPRESSIVE STRENGTH, REMOVE DIAGONAL CROSS BRIDGING AT THIS LOCATION ONLY. 59
32. AT THE NEW ADDITION (EXCLUDING SKYLIGHTS), ALL ROOFS ARE DESIGNED TO SUPPORT A MAXIMUM ALLOWED **SUPERIMPOSED DEAD LOAD** FROM THE PHOTOVOLTAIC BALLASTED SYSTEM OF **8 PSF PLUS THE ADDITIONAL DOWNWARD WIND PRESSURE** FROM THE PHOTOVOLTAIC BALLASTED SYSTEM OF **13 PSF**. SYSTEMS OTHER THAN THE PHOTOVOLTAIC BALLASTED SYSTEM ARE NOT PERMITTED.

DISTRICT 99

Owner

Wight

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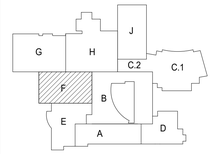


NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019
	ISSUED FOR 90% CD - PHASE C	11.1.2019
	ISSUED FOR 75% CD - PHASE C	10.14.2019
	ISSUED FOR 25% CD - PHASE C	8.30.2019

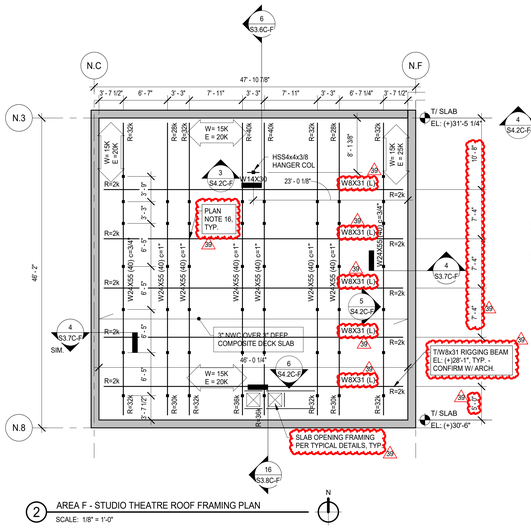
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

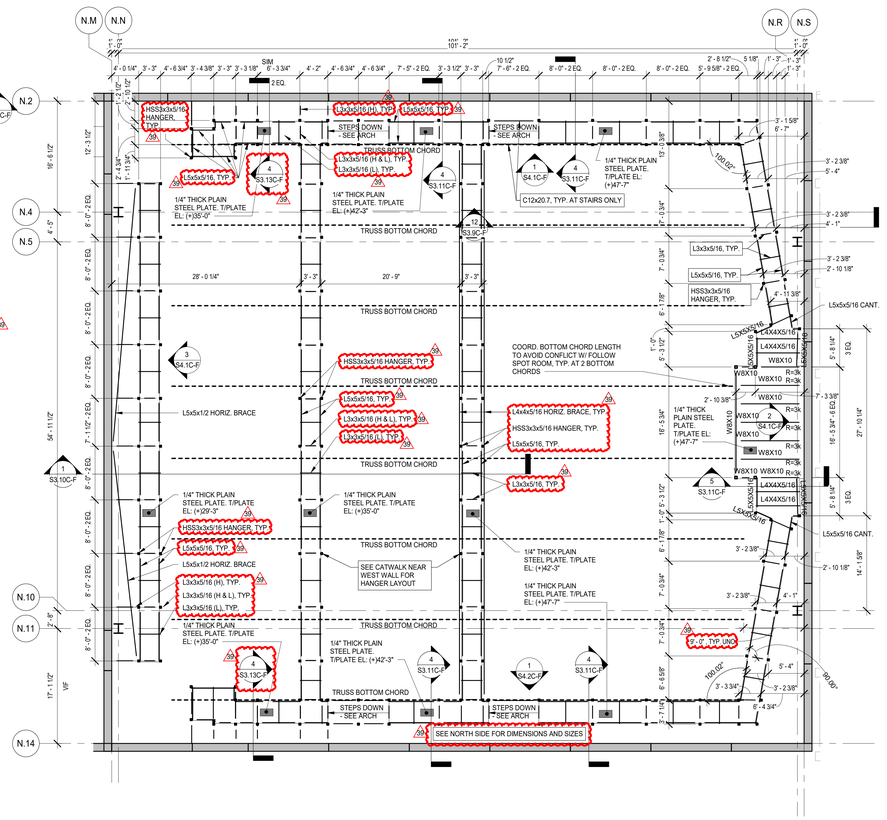
LEVEL 3 FRAMING PLAN - AREA F

Project Number:
5274-42
Drawn By:
J.G.
Sheet:

S2.3C-F



2 AREA F - STUDIO THEATRE ROOF FRAMING PLAN
SCALE: 1/8" = 1'-0"



1 AREA F - AUDITORIUM CATWALK PLAN
SCALE: 1/8" = 1'-0"

DISTRICT 99

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2500 North Frontage Road
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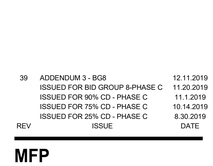

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REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019
	ISSUED FOR 90% CD - PHASE C	11.1.2019
	ISSUED FOR 75% CD - PHASE C	10.14.2019
	ISSUED FOR 25% CD - PHASE C	8.30.2019

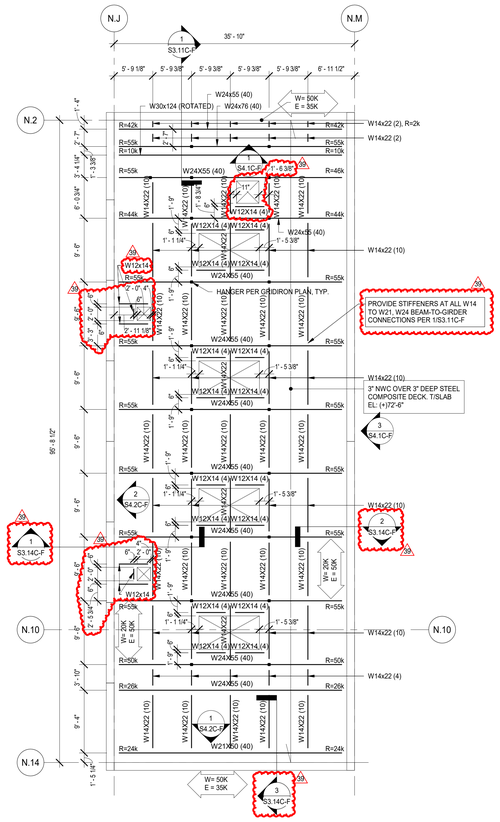
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

AUDITORIUM CATWALK FRAMING PLAN AND STUDIO THEATER ROOF FRAMING PLAN

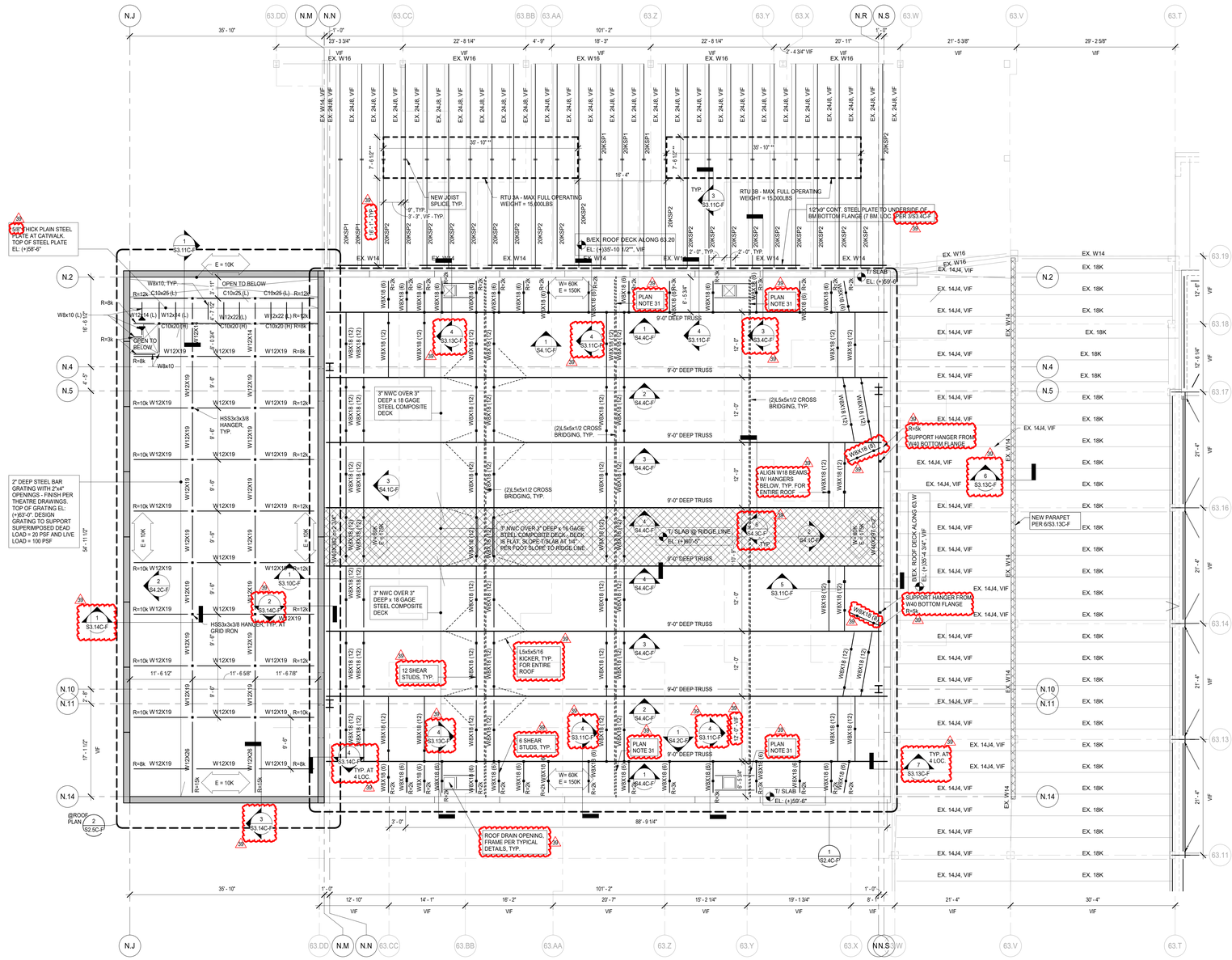
Project Number:
5274-42
Drawn By:
J.G.
Sheet:

S2.4C-F



2 AREA F - FLY GALLERY ROOF FRAMING PLAN

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



1 ROOF FRAMING PLAN - AREA F

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

PLAN NOTES

1. SEE S0 SERIES DRAWINGS FOR GENERAL NOTES, ABBREVIATIONS, SYMBOLS AND LINTEL SCHEDULES.
2. SEE S1 SERIES DRAWINGS FOR TYPICAL SECTIONS AND DETAILS.
3. SEE S3 SERIES DRAWINGS FOR NON-TYPICAL SECTIONS AND DETAILS.
4. SEE S4 SERIES DRAWINGS FOR ELEVATIONS AND S5 SERIES FOR SCHEDULES.
5. CENTERLINE OF COLUMN IS ON GRIDLINE. TYPICAL UNLESS NOTED OTHERWISE.
6. SEE PLANS FOR COLUMN ORIENTATION AND COLUMN CENTERLINE TO GRIDLINE DIMENSIONS FOR OFFSET COLUMNS.
7. SEE PLANS FOR TOP OF ROUGH SLAB ELEVATION.
8. (H) AS INDICATED ON PLAN INDICATES HIGHER BEAM OF FRAMING MEMBERS IN SAME VERTICAL PLANE.
9. (L) AS INDICATED ON PLAN INDICATES LOWER BEAM OF FRAMING MEMBERS IN SAME VERTICAL PLANE.
10. SEE ARCHITECTURAL DRAWINGS FOR CURBS NOT INDICATED (SIZE AND LOCATION). SEE TYPICAL SECTIONS AND DETAILS FOR CURB REINFORCEMENT.
11. AT ELEVATED FLOOR LEVELS, FLOOR DECK SHALL BE 3 1/4" THICK LIGHTWEIGHT CONCRETE OVER 2" DEEP COMPOSITE STEEL FLOOR DECK, UNLESS NOTED OTHERWISE. REINFORCE SLAB WITH 4.0 LBS/CU.YD. OF STRUX 90/40 MACROSYNTHETIC FIBER REINFORCEMENT OR EQUIVALENT. TYP. UNO. 59
12. OTHERWISE, FLOOR DECK SHALL BE 4" NORMAL WEIGHT CONCRETE OVER 2" DEEP NON-COMPOSITE STEEL FORM DECK. REINFORCE SLAB WITH 6x6-W2.1xW2.1 WELDED WIRE REINFORCEMENT. SUBSTITUTES ARE NOT PERMITTED FOR THE WELDED WIRE REINFORCEMENT.
13. SEE PLAN FOR BOTTOM OF STEEL DECK ELEVATIONS, TYPICAL UNLESS NOTED OTHERWISE.
14. STUDIO THEATRE ROOF, AUDITORIUM ROOF AND FLY GALLERY ROOF SHALL CONSIST OF FLOOR DECK OF 3" THICK NORMAL-WEIGHT CONCRETE OVER 3" DEEP COMPOSITE STEEL FLOOR DECK. REINFORCE SLAB WITH 4.0 LBS/CU.YD. OF STRUX 90/40 MACROSYNTHETIC FIBER REINFORCEMENT OR EQUIVALENT.
15. OTHERWISE, ROOF DECK SHALL BE 1 1/2" DEEP STEEL ROOF DECK. 59
16. PROVIDE A HANGER CONNECTION AT EACH W24 STUDIO THEATRE ROOF BEAM FOR THE SUPPORT OF W8x31 RIGGING BEAM, TYP. AT ALL W8x31 RIGGING BEAMS. DESIGN HANGER CONNECTION FOR SERVICE LEVEL VERTICAL END REACTION = 3 KIPS.
17. PROVIDE L5x5x5/16 STEEL ANGLE OR BENT PLATE AT ROOF PERIMETER AND AT INTERIOR OPENINGS IN ACCORDANCE WITH TYPICAL DETAILS.
18. SEE S4.4C-F AND S4.5C-F FOR ROOF TRUSS AND SPECIAL DESIGN JOIST SCHEMATIC LOADINGS.
19. SUSPEND PIPE HANGERS AND OTHER MECHANICAL EQUIPMENT FROM DESIGNATED OR APPROVED STEEL JOISTS. LOCATE CONCENTRATED LOADS AT JOIST PANEL POINTS ONLY OR REINFORCE STEEL JOISTS IN ACCORDANCE WITH TYPICAL SECTIONS AND DETAILS.
20. PLACE SUPPORTS FOR ROOF TOP EQUIPMENT LOADS ON DESIGNATED OR APPROVED STEEL JOISTS. LOCATE CONCENTRATED LOADS AT JOIST PANEL POINTS ONLY OR REINFORCE STEEL JOISTS IN ACCORDANCE WITH TYPICAL SECTIONS AND DETAILS.
21. SEE TYPICAL DETAILS FOR ELECTRICAL GROUNDING DETAIL AND REQUIREMENTS FOR A CONCRETE ENCASED GROUNDING ELECTRODE. COORDINATE WITH ELECTRICAL CONTRACTOR.
22. ** INDICATES DIMENSIONS TO BE COORDINATED WITH EQUIPMENT MANUFACTURER.
23. E = xxK — TOTAL HORIZONTAL STRENGTH WIND FORCE (W) AND STRENGTH SEISMIC FORCE (E) FROM THE ROOF/FLOOR DIAPHRAGM OR ADJACENT WALLS TO BE RESISTED BY THE PRECAST CONCRETE SHEAR WALLS BELOW.
24. SUPPORT ALL MEPFP EQUIPMENT AND PIPING GREATER THAN 2 INCHES IN DIAMETER DIRECTLY FROM THE DESIGNATED STEEL ROOF JOISTS (TOP CHORDS ONLY) AND STEEL WIDE FLANGED BEAM AND GIRDER FRAMING. DO NOT SUPPORT THE AFOREMENTIONED FROM THE STEEL ROOF DECK DIRECTLY. ITEMS SUCH AS LIGHTWEIGHT CEILINGS AND LIGHTING MAY BE SUPPORTED DIRECTLY FROM THE STEEL ROOF DECK.
25. ALL MEP EQUIPMENT STEEL SUPPORTS SHALL BE COORDINATED WITH THE INSTALLING CONTRACTOR(S). SEE PLANS AND TYPICAL DETAILS FOR STEEL SUPPORT REQUIREMENTS.
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27. MEPFP INSTALLING CONTRACTOR(S) SHALL SUBMIT EXISTING ELEVATED FLOOR PLANS INDICATING ALL MEPFP FLOOR PENETRATION SIZES AND LOCATIONS FOR EOR REVIEW. EOR APPROVAL IS REQUIRED PRIOR TO THE START OF CORING ACTIVITIES. COORDINATE THE TIMING OF SUBMITTAL ACCORDINGLY. LOCATE AND AVOID DAMAGE TO REINFORCEMENT.
28. SEE STEEL DECK NOTES ON S0.1C FOR STEEL DECK ATTACHMENT INFORMATION TO THE SUPPORT STEEL.
29. MAXIMUM LIVE LOAD DEFLECTION FOR ELEVATED SLABS @ BUILDING ENVELOPE AND INTERIOR PARTITIONS = 1.0"
30. POUR ALL ELEVATED CONCRETE SLABS TO THE SPECIFIED THICKNESS. 59
31. AFTER AUDITORIUM ROOF DECK AND SLAB IS INSTALLED AND CONCRETE ACHIEVES THE SPECIFIED MINIMUM COMPRESSIVE STRENGTH, REMOVE DIAGONAL CROSS BRIDGING AT THIS LOCATION ONLY.

32. AT THE NEW ADDITION (EXCLUDING SKYLIGHTS), ALL ROOFS ARE DESIGNED TO SUPPORT A MAXIMUM ALLOWED **SUPERIMPOSED DEAD LOAD** FROM THE PHOTOVOLTAIC BALLASTED SYSTEM OF **8 PSF PLUS THE ADDITIONAL DOWNWARD WIND PRESSURE** FROM THE PHOTOVOLTAIC BALLASTED SYSTEM OF **13 PSF**. SYSTEMS OTHER THAN THE PHOTOVOLTAIC BALLASTED SYSTEM ARE NOT PERMITTED.

DISTRICT 99

Owner

Wight

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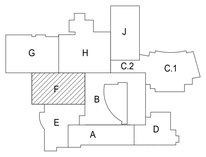


NORTH

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019
	ISSUED FOR 90% CD - PHASE C	11.1.2019
	ISSUED FOR 75% CD - PHASE C	10.14.2019
	ISSUED FOR 25% CD - PHASE C	8.30.2019

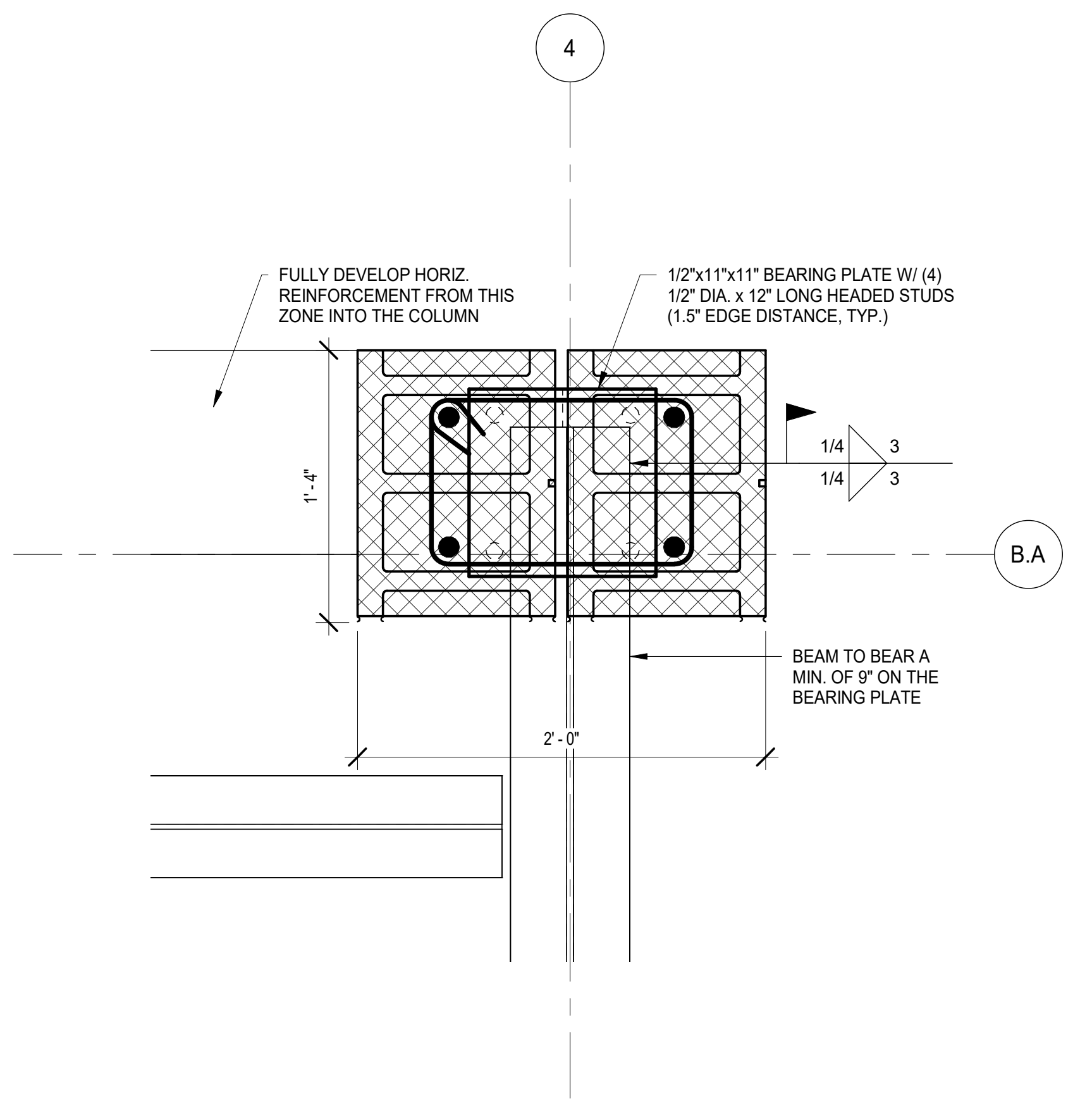
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

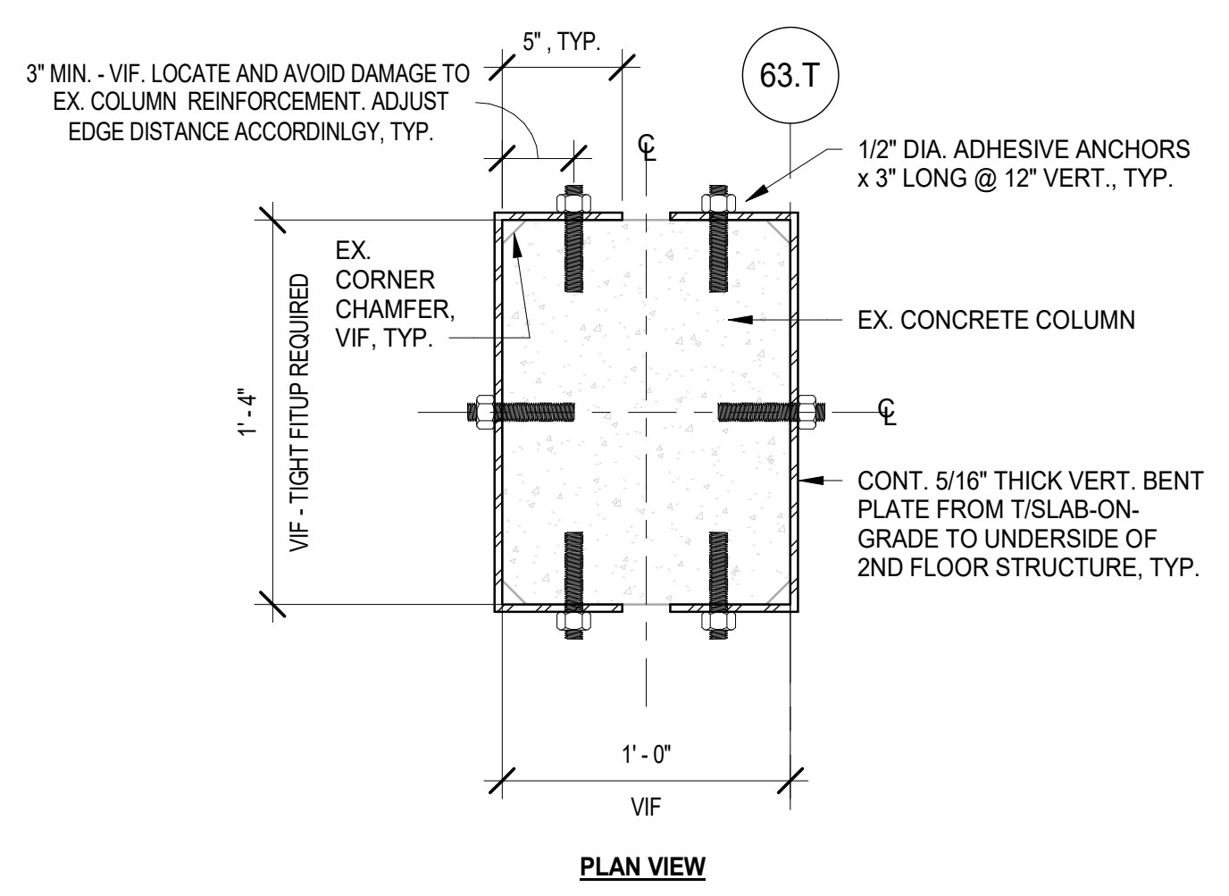
AUDITORIUM AND FLY GALLERY ROOF LEVEL FRAMING PLAN - AREA F

Project Number:
5274-42
Drawn By:
J.G.
Sheet:

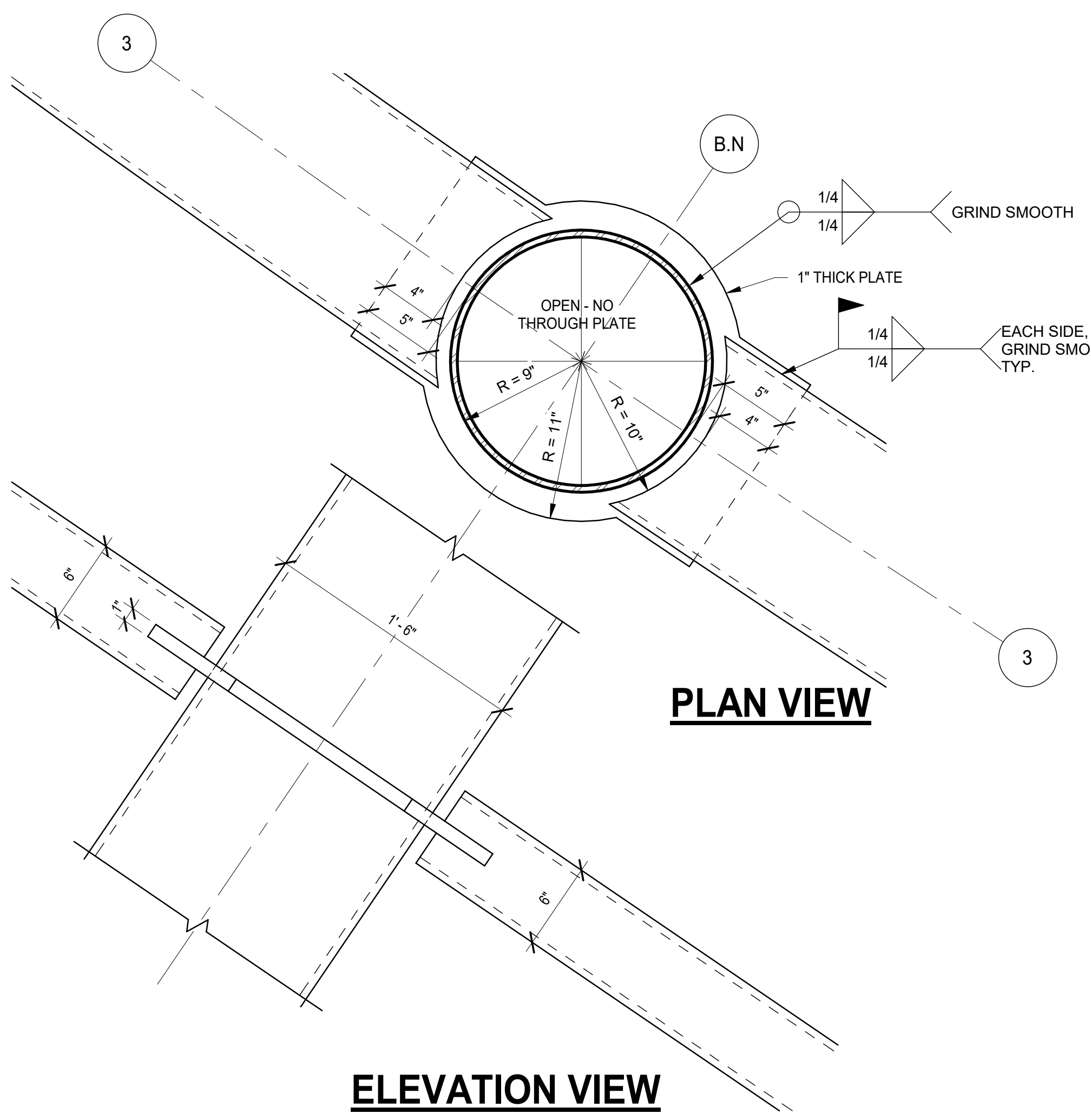
S2.5C-F



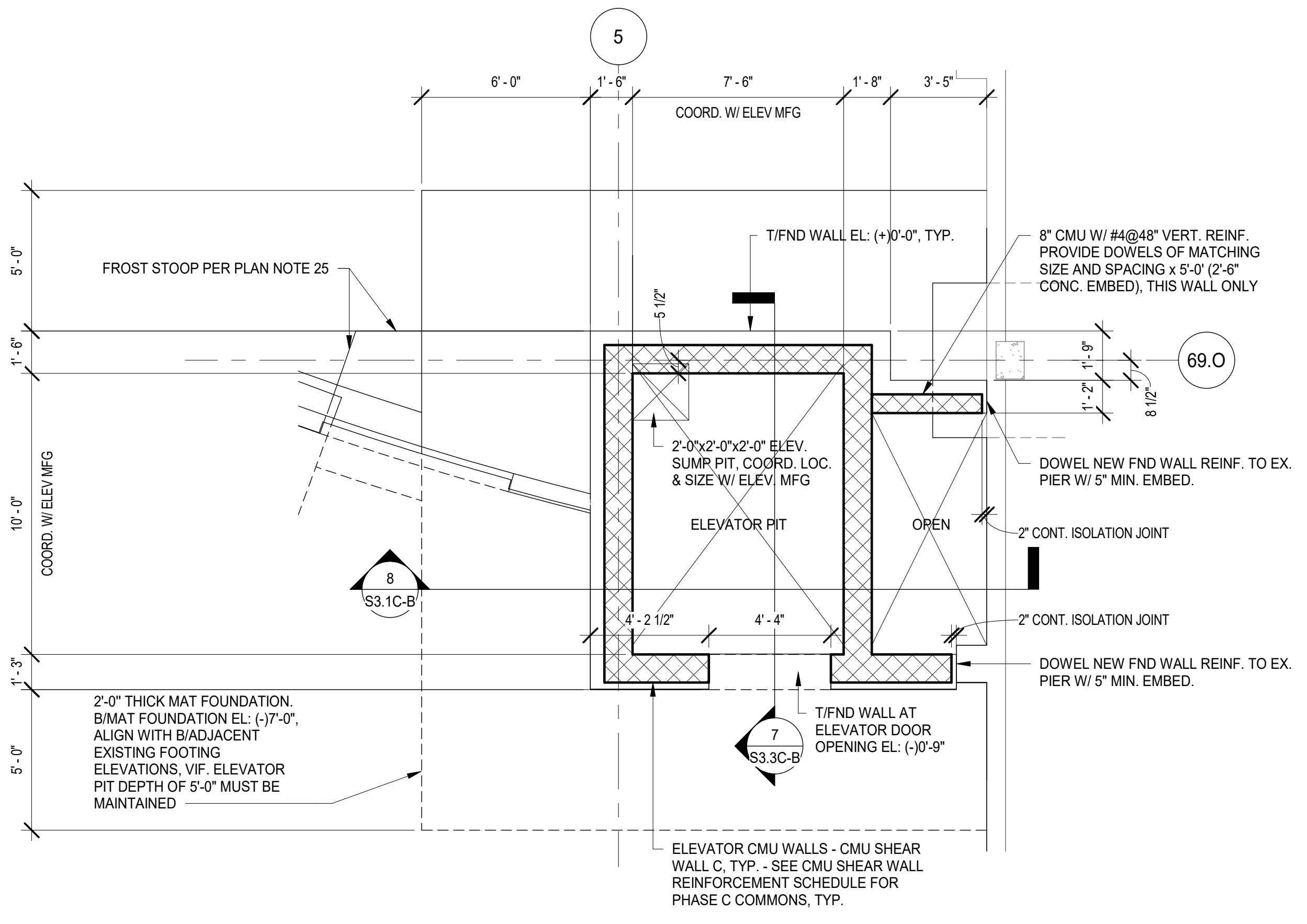
④ AREA B - ENLARGED CMU COLUMN PLAN DETAIL
SCALE: 1 1/2" = 1'-0"



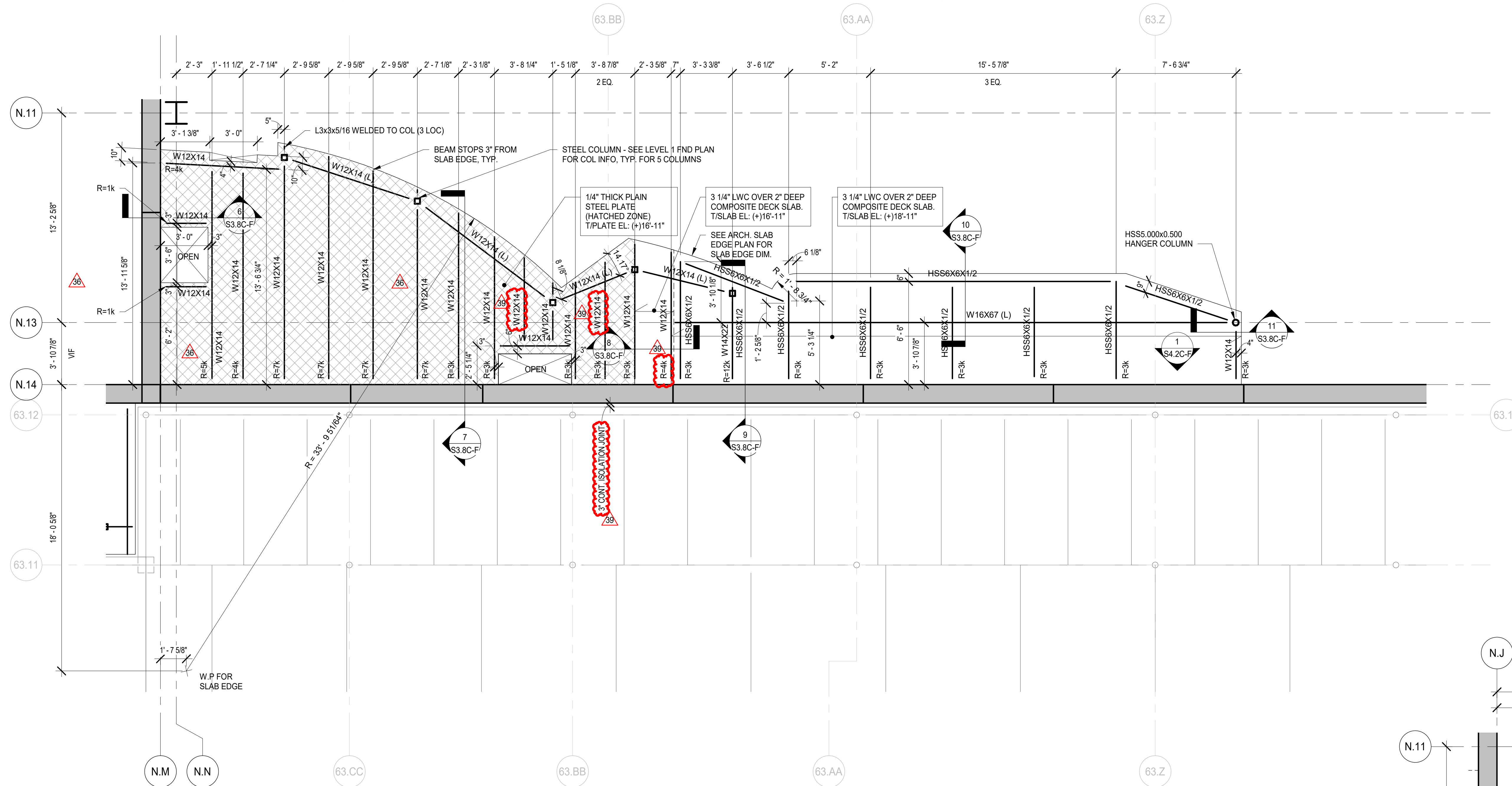
③ EXISTING CONCRETE COLUMN REINFORCEMENT PLAN DETAIL
SCALE: 1 1/2" = 1'-0"



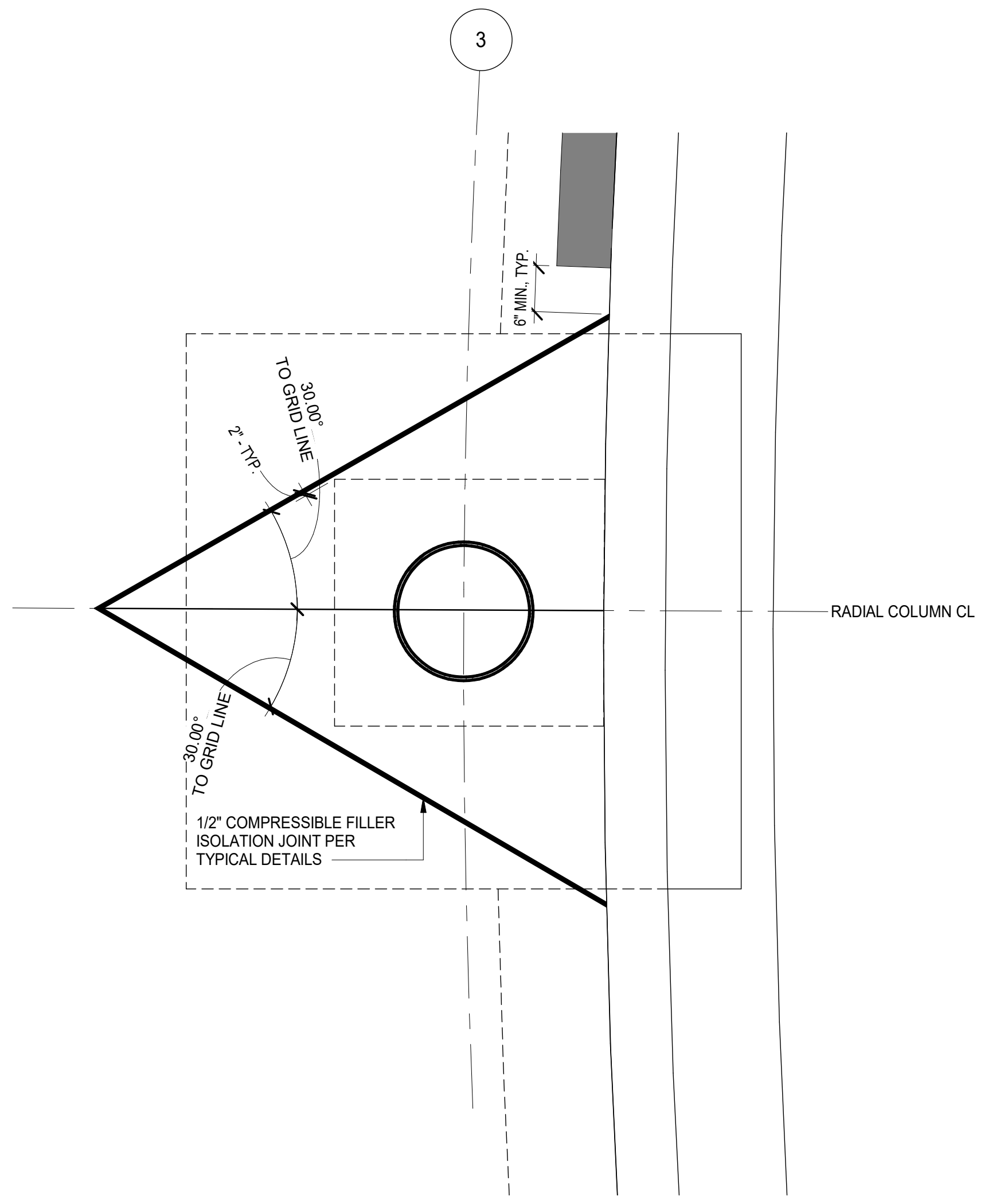
② HSS WIND BRACE TO ROUND HSS COLUMN CONNECTION DETAIL
SCALE: 1 1/2" = 1'-0"



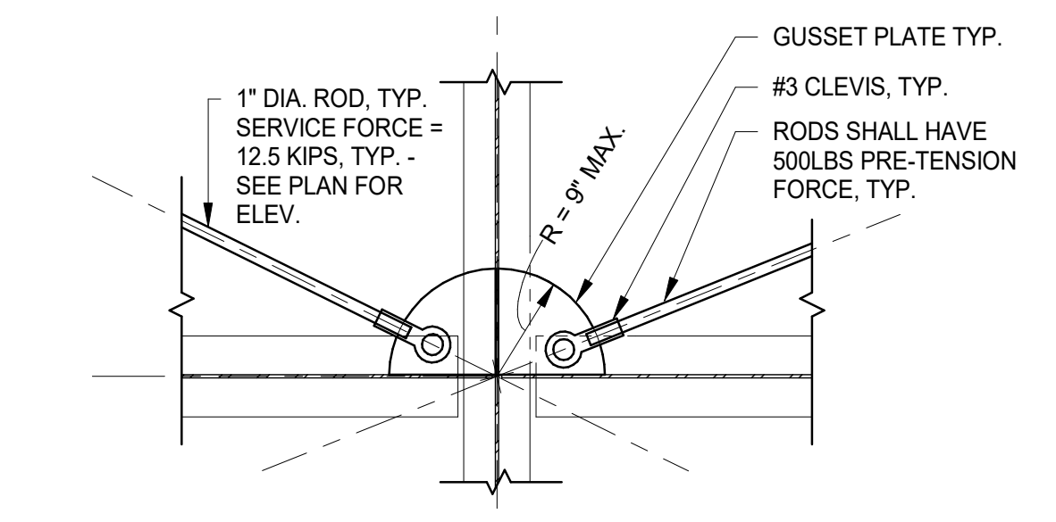
① ENLARGED ELEVATOR FOUNDATION PLAN
SCALE: 1/4" = 1'-0"



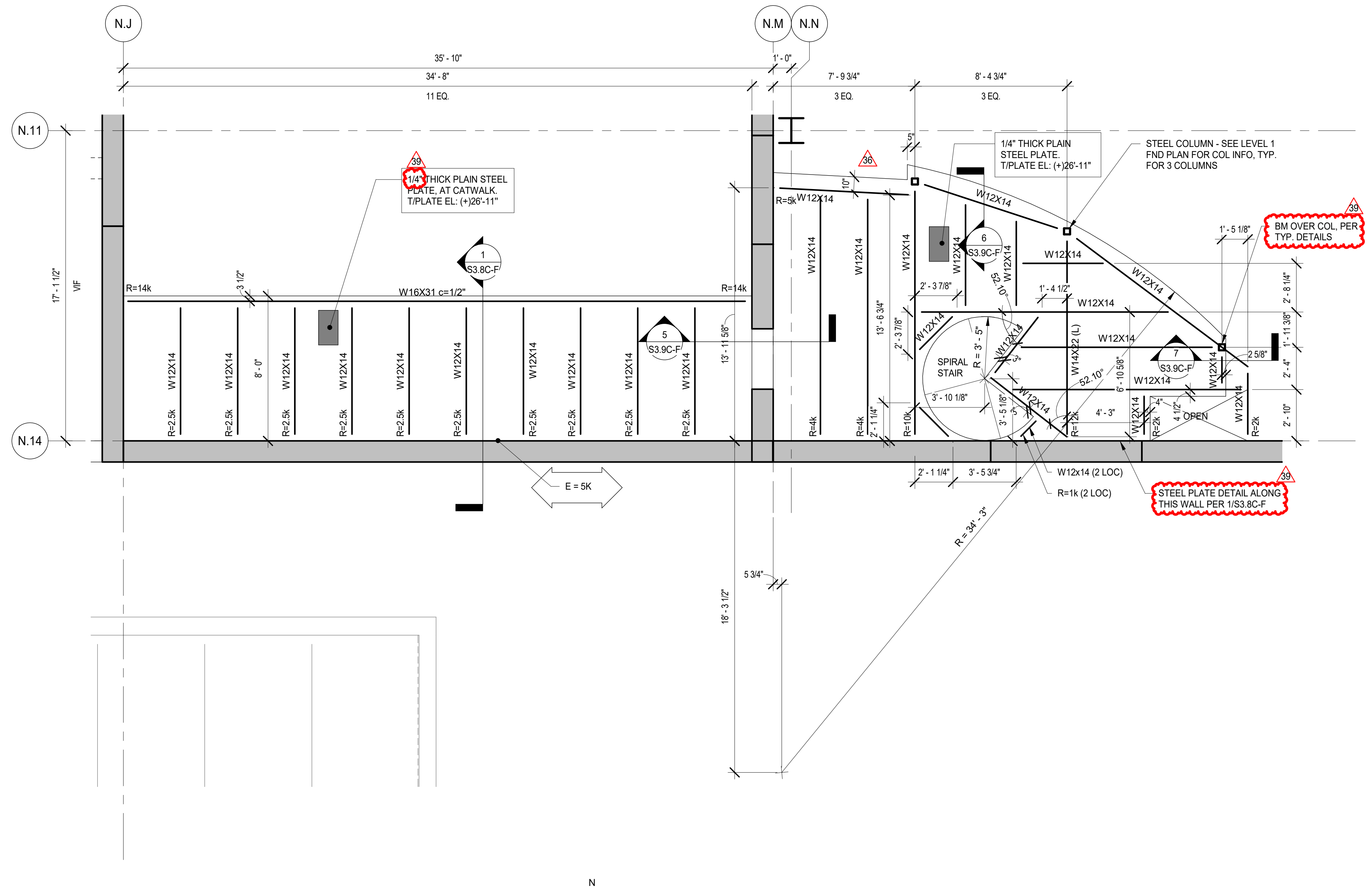
⑦ TECHNICAL MEZZANINE AND SIDE BALCONY FRAMING PLAN
SCALE: 1/4" = 1'-0"



⑥ ENLARGED COLUMN ISOLATION JOINT DETAIL AT FIN TUBE RADIATOR RECESS LOCATIONS
SCALE: 3/4" = 1'-0"



⑤ AREA B - ENLARGED PLAN VIEW - HORIZ. ROD BRACING
SCALE: 3/4" = 1'-0"



⑧ STAGE RIGHT PIN RAIL GALLERY AND UPPER ANTE FRAMING PLAN
SCALE: 1/4" = 1'-0"

DISTRICT 99

Owner

Wight

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REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019
36	ADDENDUM 2 – BG8	12.04.2019
	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019
	ISSUED FOR 90% CD - PHASE C	11.1.2019
	ISSUED FOR 75% CD - PHASE C	10.14.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

ENLARGED PLANS

Project Number:
5274-42
Drawn By:
J.G.
Sheet:
S2.6C-EP

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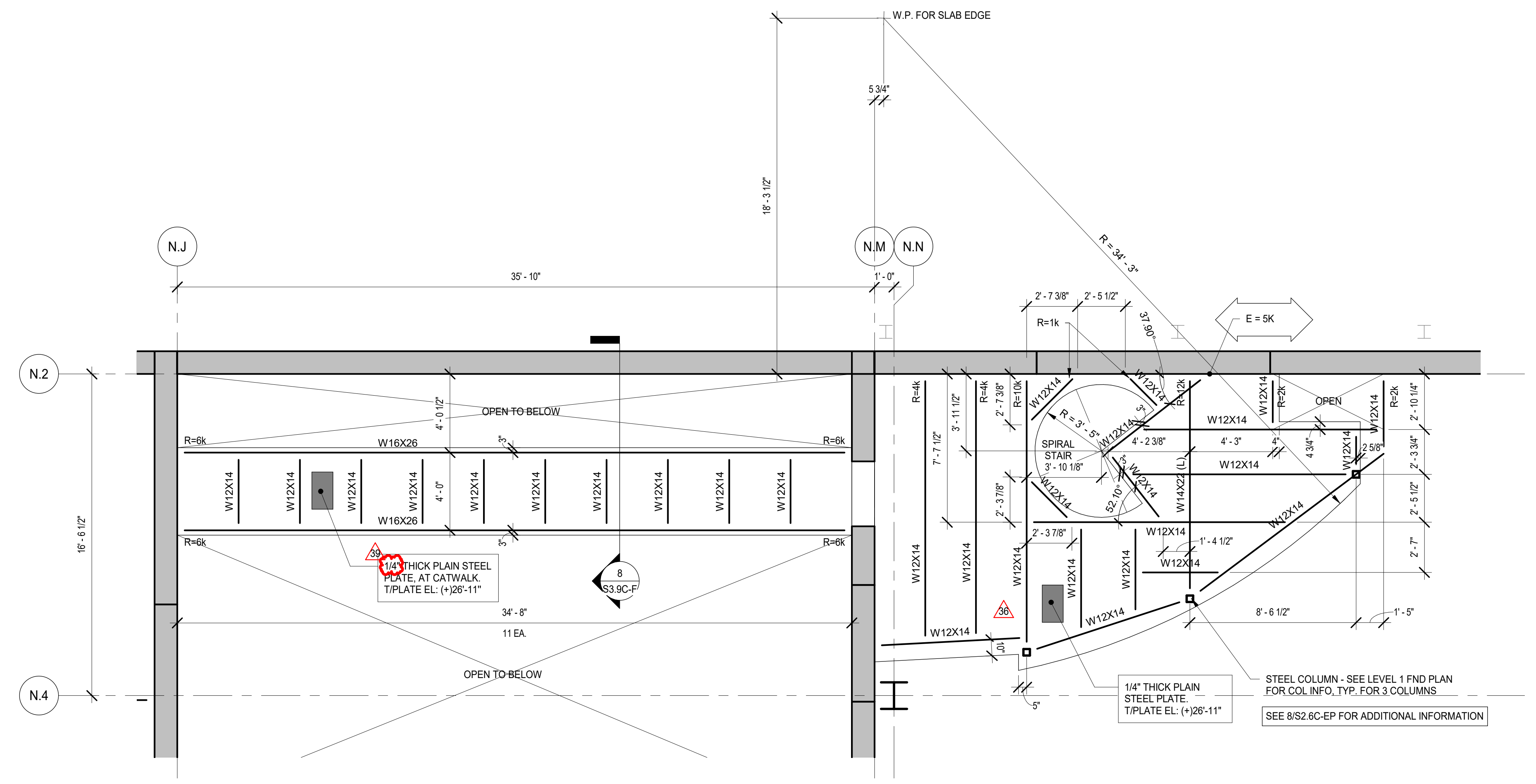
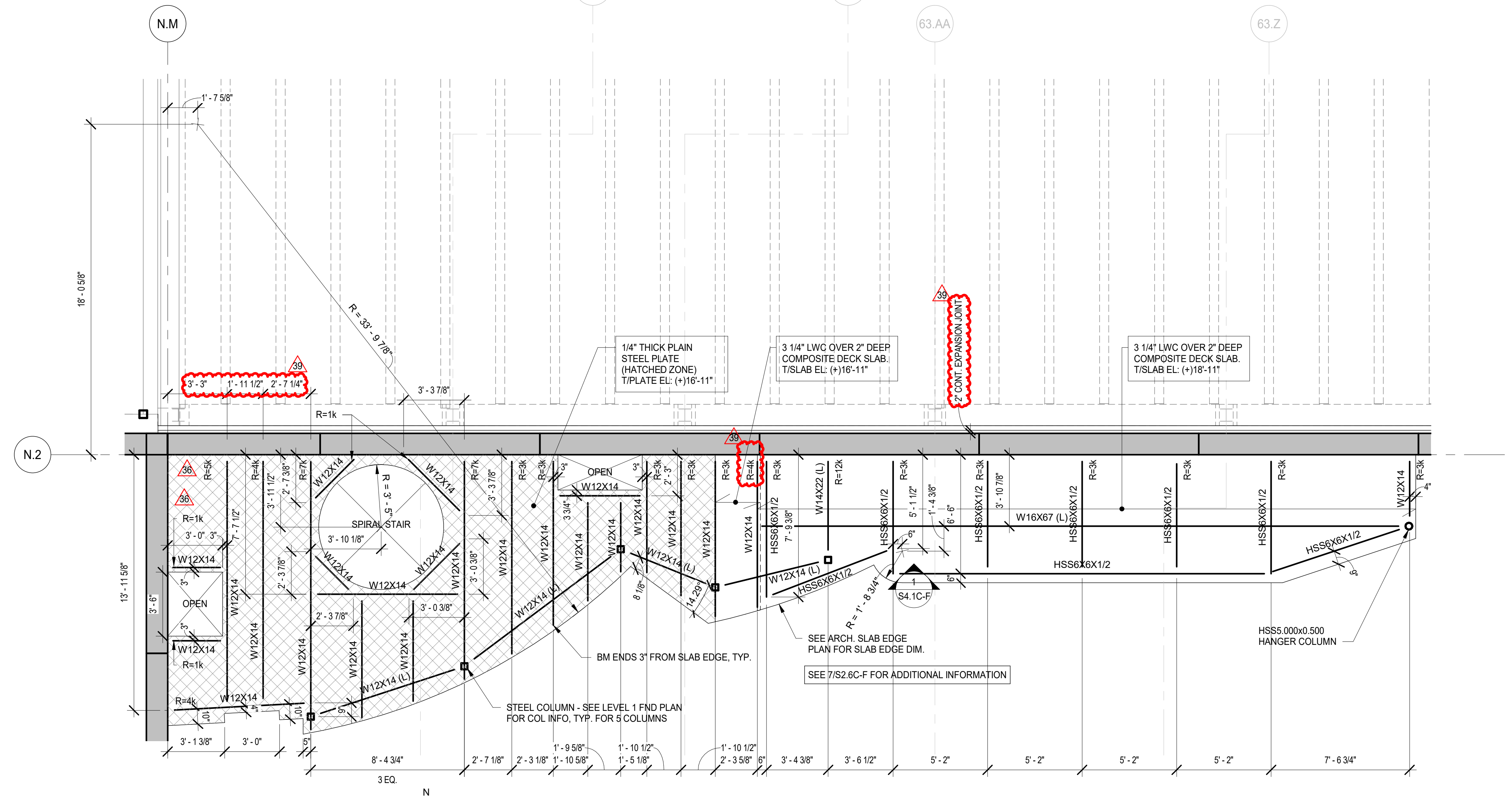


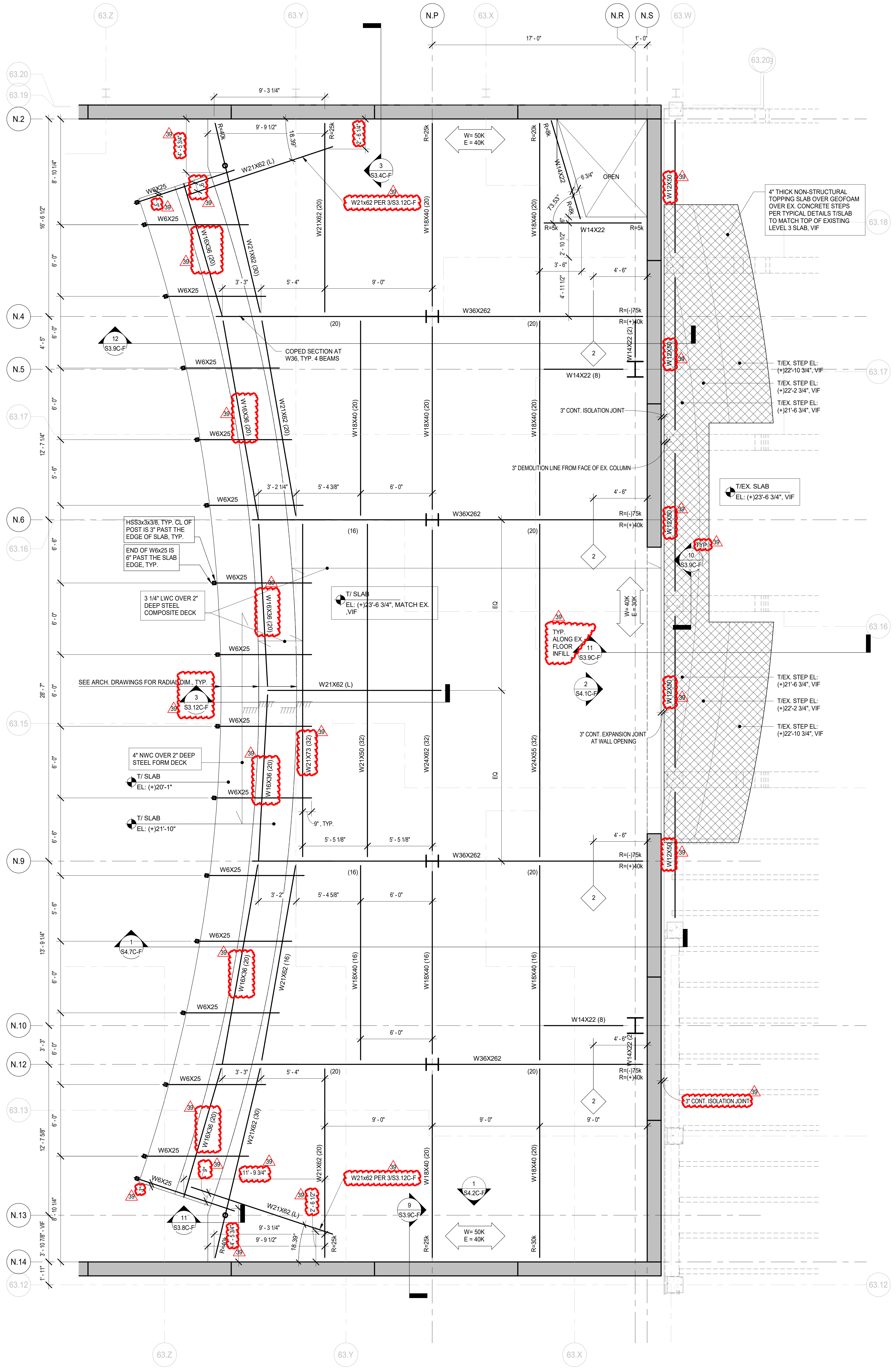
② STAGE LEFT PIN RAIL GALLERY AND UPPER ANTE FRAMING PLAN

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



③ TECHNICAL MEZZANINE AND SIDE BALCONY FRAMING PLAN

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



① AREA F - LEVEL 3 BALCONY FRAMING PLAN - ENLARGED

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

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Wight

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REV	ISSUE	DATE
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	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

ENLARGED PLANS

Project Number:
5274-42
Drawn By:
J.G.
Sheet:
S2.7C-EP

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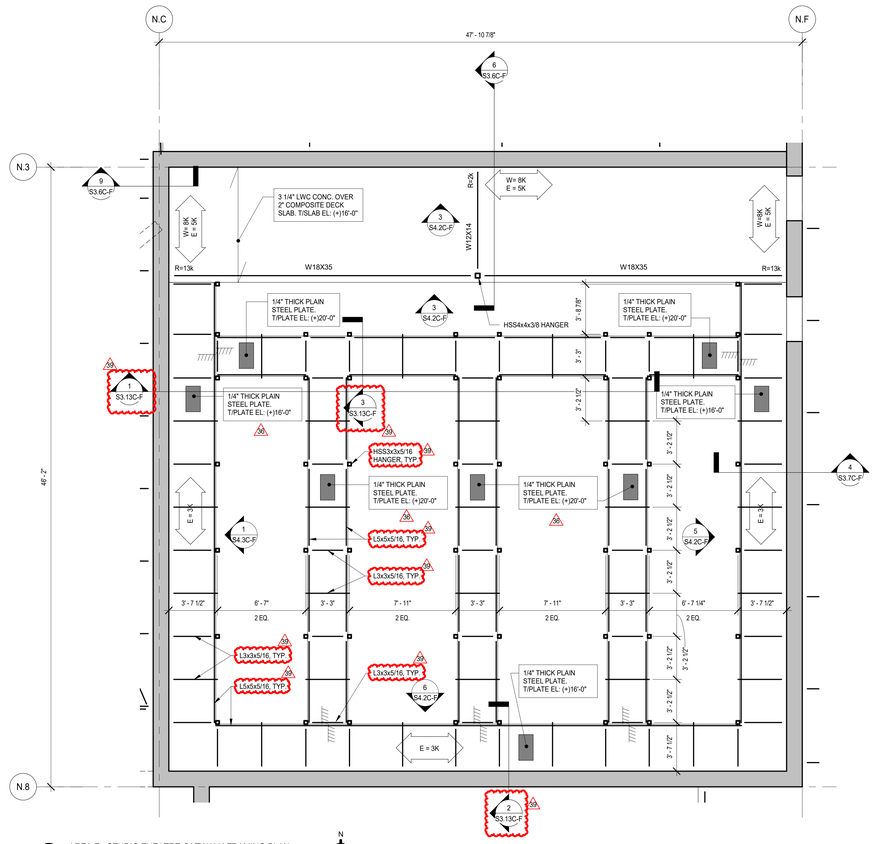

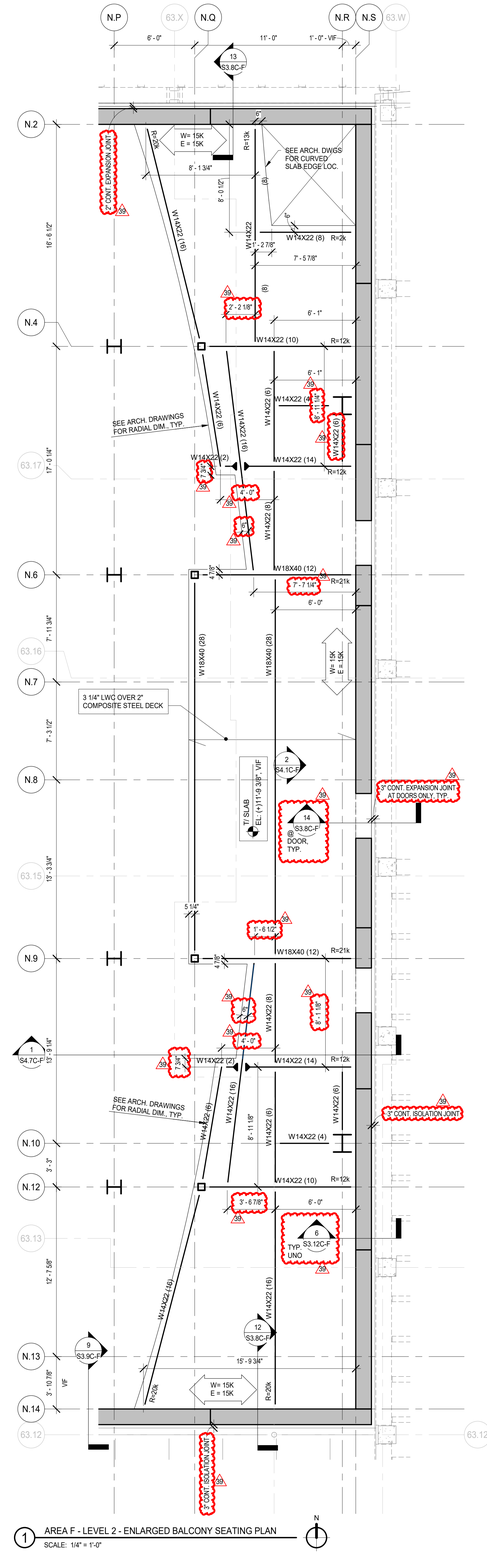

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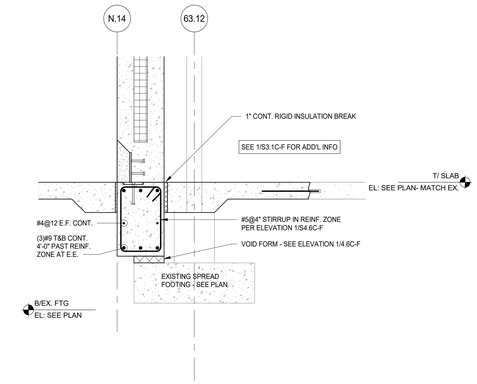
	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019

MFP IMPLEMENTATION - SOUTH

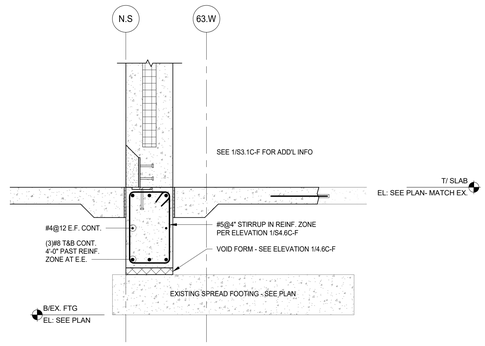
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

ENLARGED PLANS

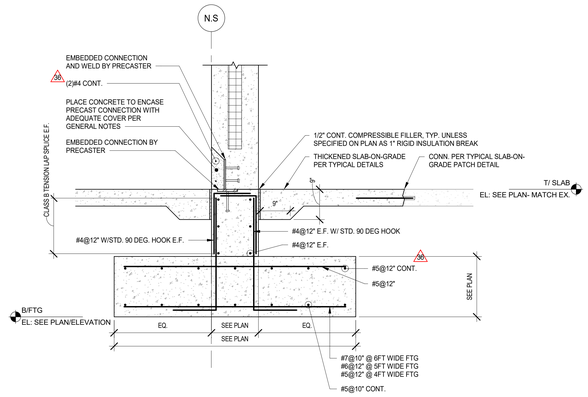
Project Number:
5274-42
Drawn By:
J.G.
Sheet:
S2.8C-EP



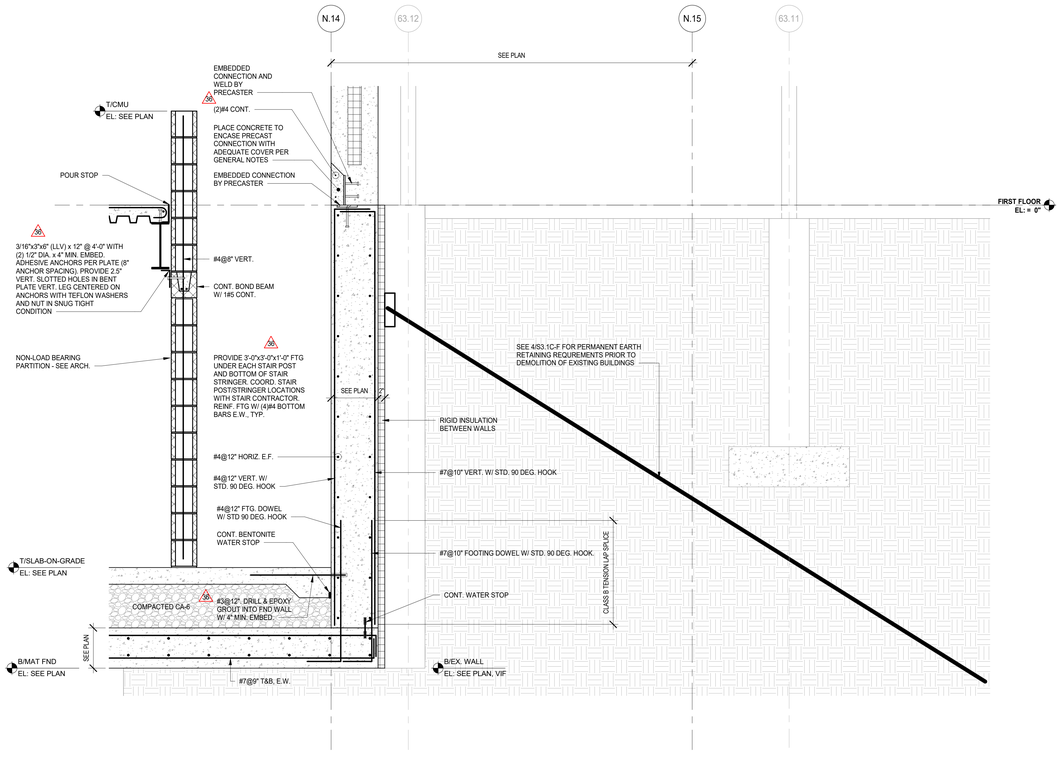
3 FOUNDATION DETAIL
SCALE: 3/4" = 1'-0"



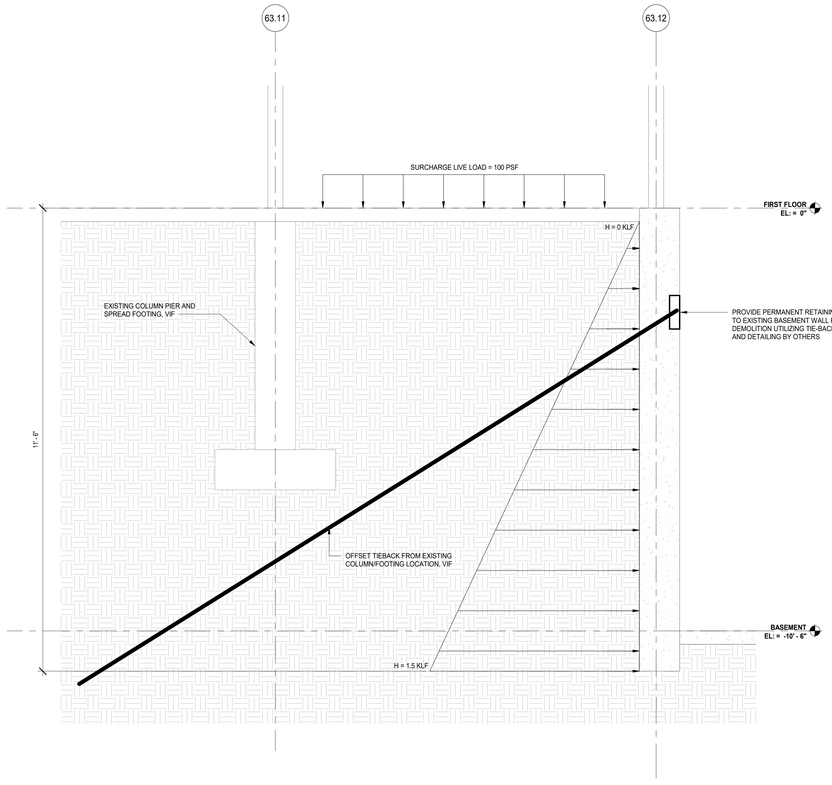
2 FOUNDATION DETAIL
SCALE: 3/4" = 1'-0"



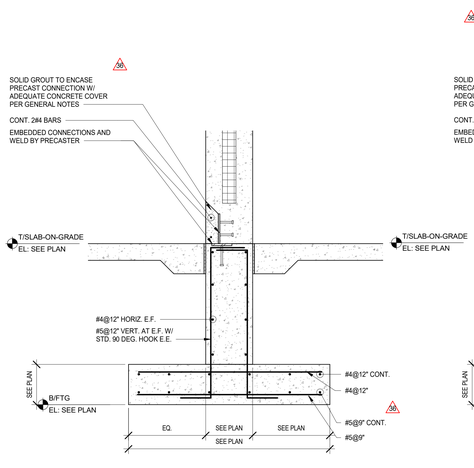
1 FOUNDATION DETAIL
SCALE: 3/4" = 1'-0"



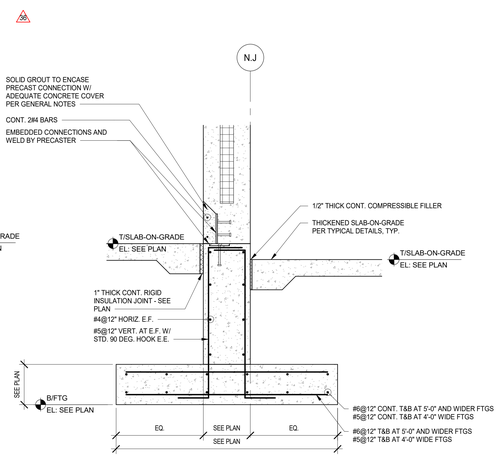
5 FOUNDATION DETAIL
SCALE: 3/4" = 1'-0"



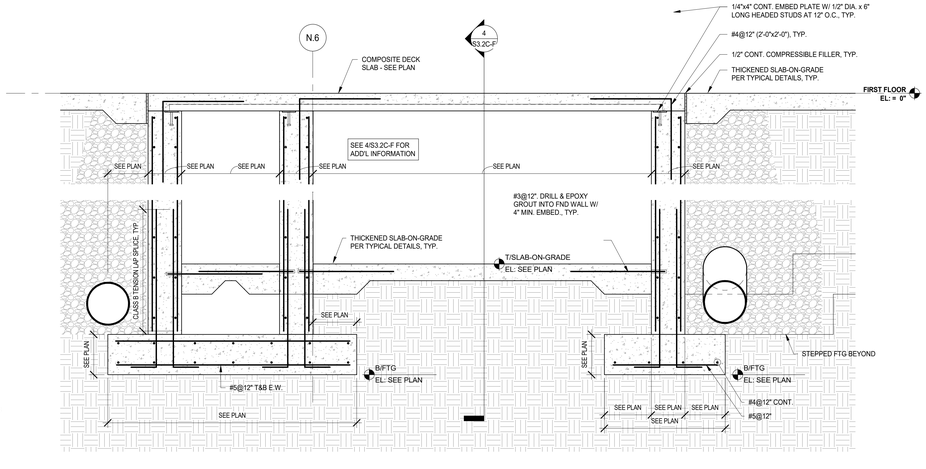
4 FOUNDATION DETAIL
SCALE: 3/4" = 1'-0"



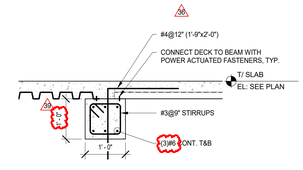
9 FOUNDATION DETAIL
SCALE: 3/4" = 1'-0"



8 FOUNDATION DETAIL
SCALE: 3/4" = 1'-0"



7 FOUNDATION DETAIL
SCALE: 3/4" = 1'-0"



6 FOUNDATION DETAIL
SCALE: 3/4" = 1'-0"

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Owner

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wightco.com
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F 630.969.7979

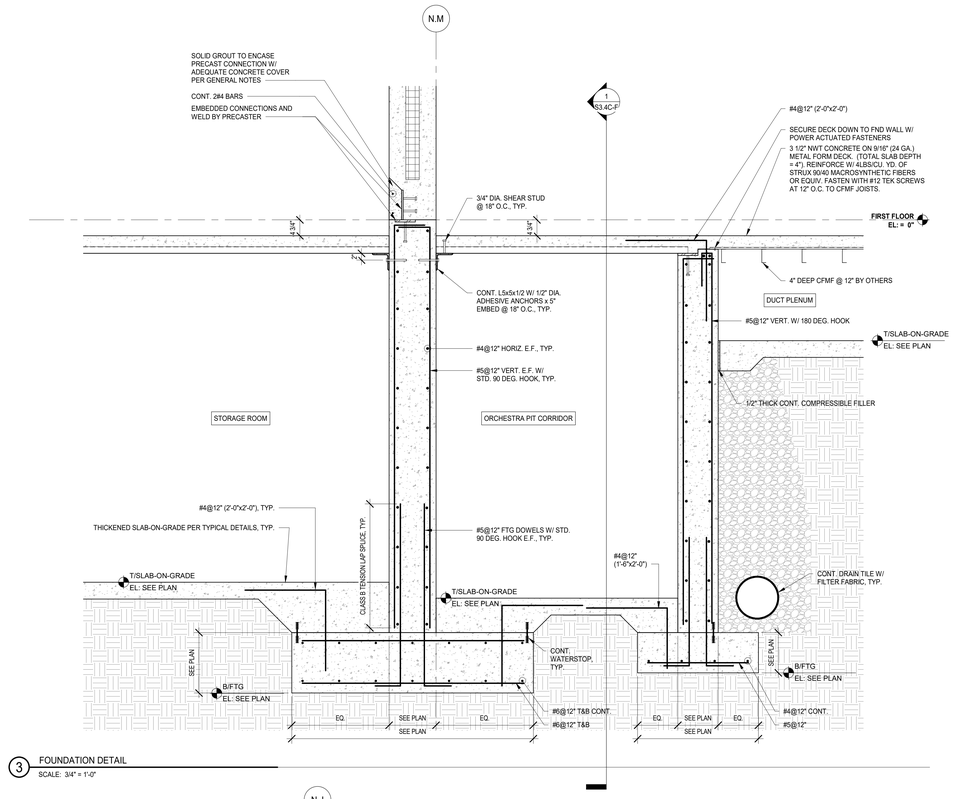
REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019
36	ADDENDUM 2 – BG8	12.04.2019
	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019
	ISSUED FOR 90% CD - PHASE C	11.1.2019
	ISSUED FOR 75% CD - PHASE C	10.14.2019
	ISSUED FOR 25% CD - PHASE C	8.30.2019

MFP IMPLEMENTATION - SOUTH

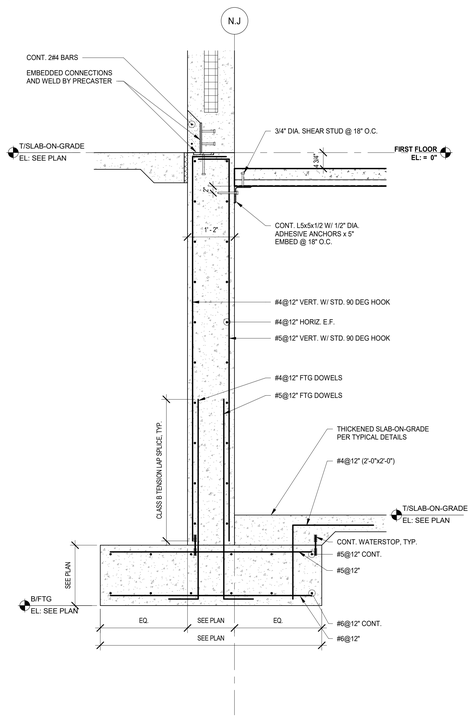
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

NON-TYPICAL SECTIONS AND DETAILS

Project Number:
5274-42
Drawn By:
J.G.
Sheet:
S3.1C-F



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



5 FOUNDATION DETAIL
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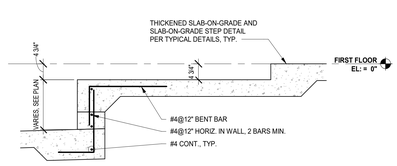
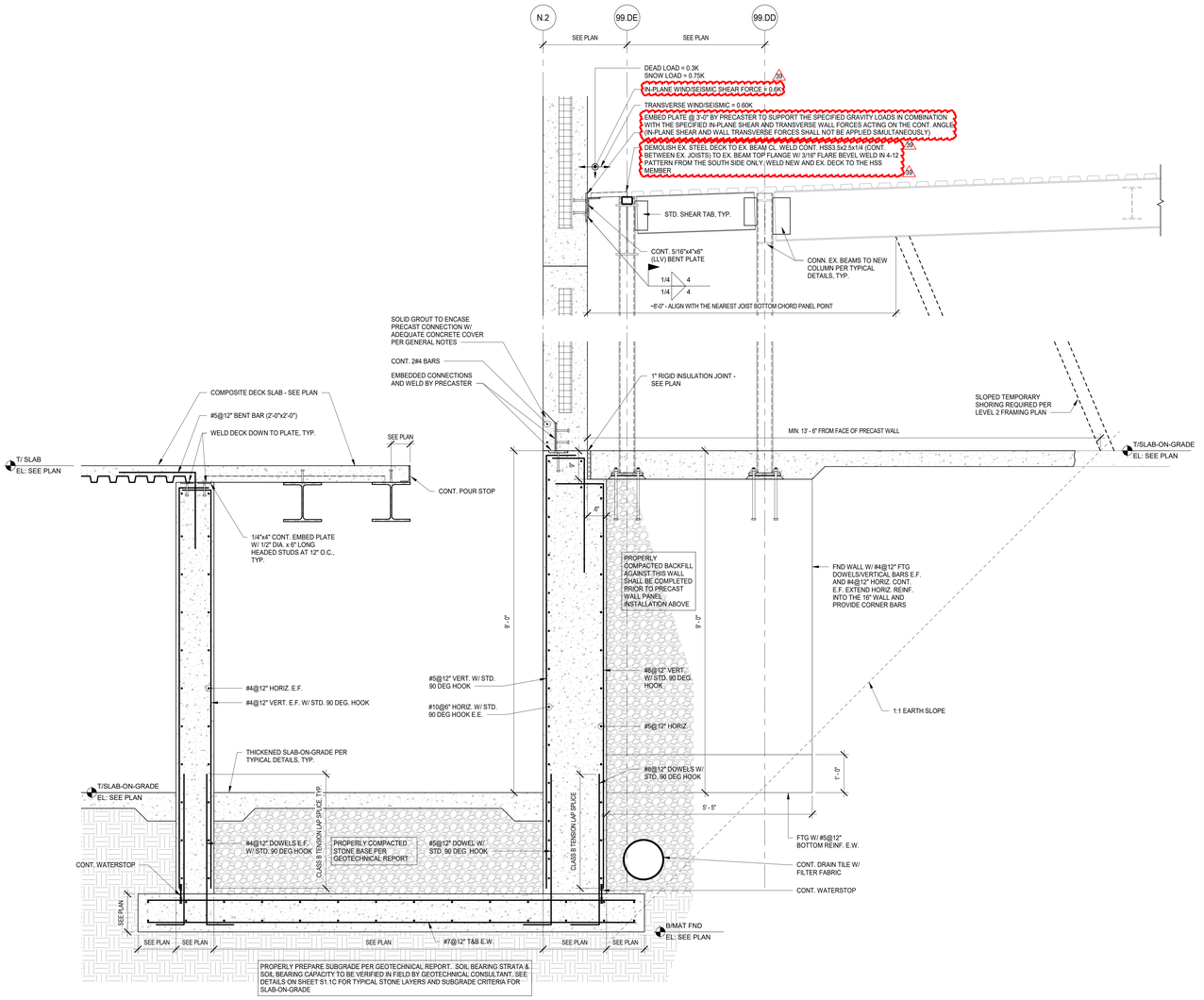
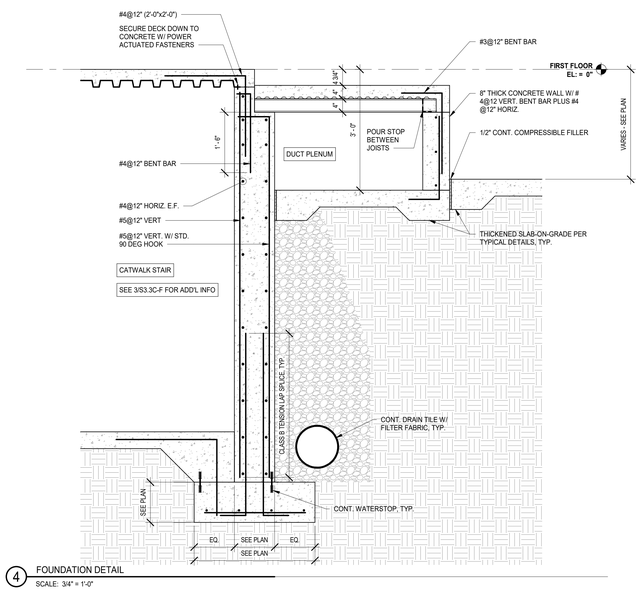


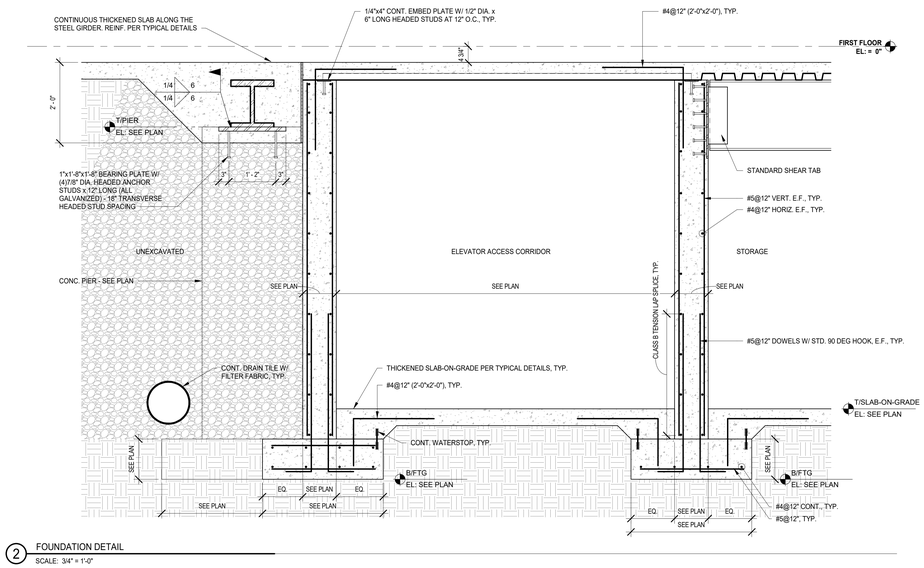
6 FOUNDATION DETAIL
SCALE: 3/4" = 1'-0"



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



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



2 FOUNDATION DETAIL
SCALE: 3/4" = 1'-0"

DISTRICT 99

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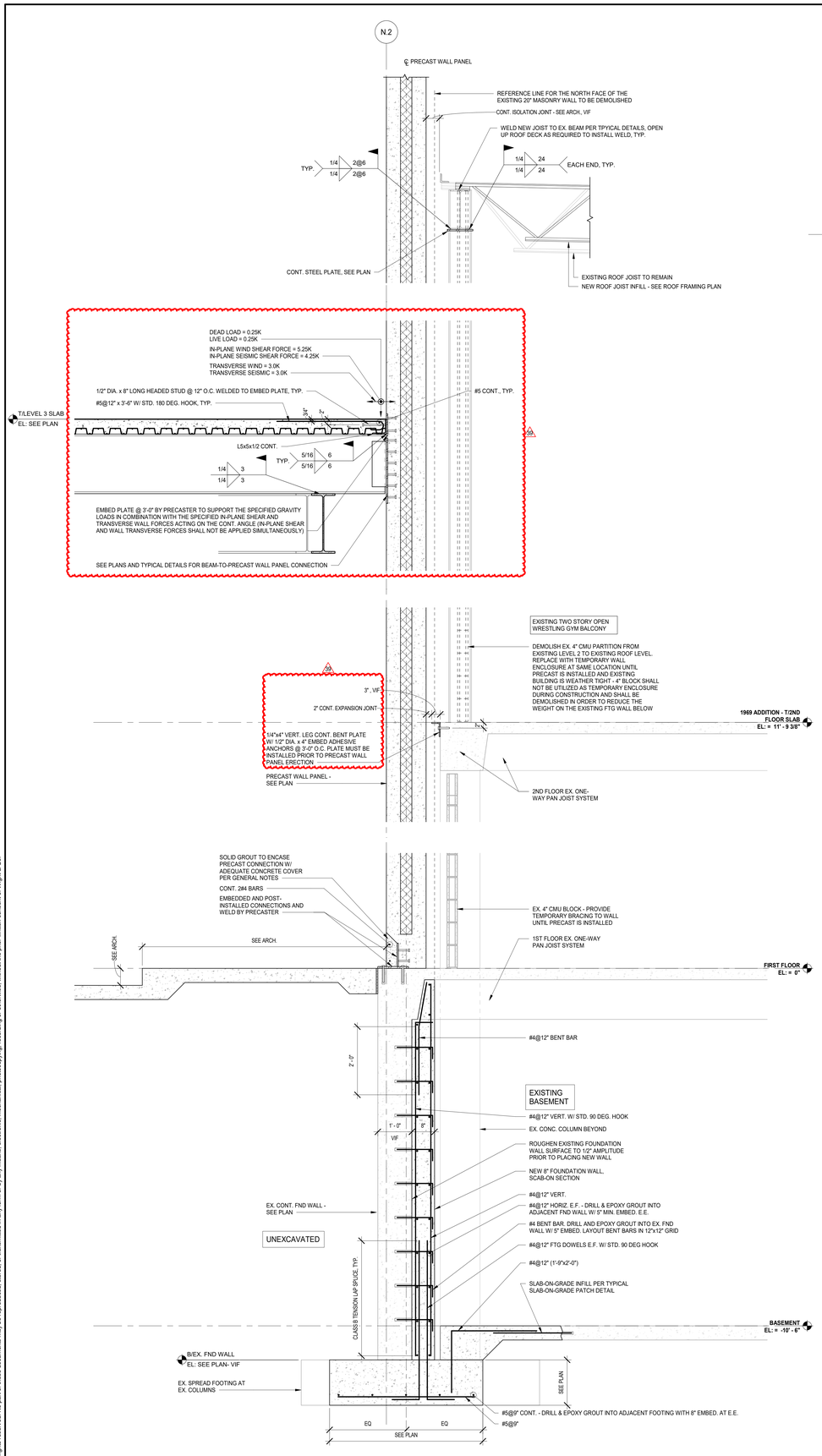
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

NON-TYPICAL SECTIONS AND DETAILS

Project Number:
5274-42
Drawn By:
J.G.
Sheet:

S3.3C-F



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

2 FOUNDATION DETAIL
SCALE: 3/4" = 1'-0"

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

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MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

NON-TYPICAL SECTION AND DETAILS

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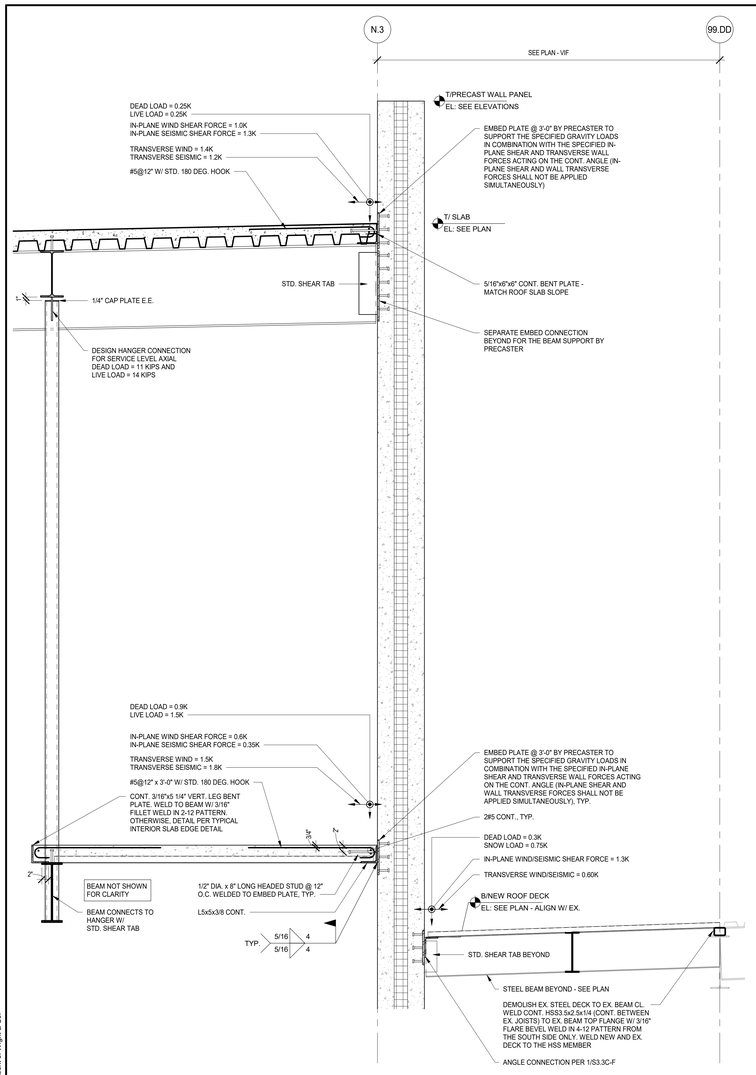
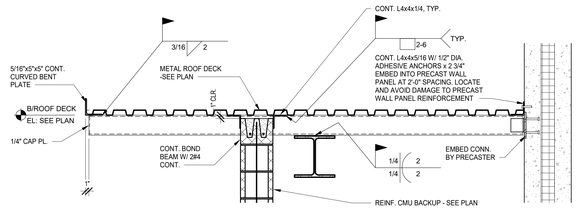
Drawn By:
J.G.
Sheet:

S3.4C-F



6 FRAMING DETAIL
SCALE: 3/4" = 1'-0"



10 FRAMING DETAIL
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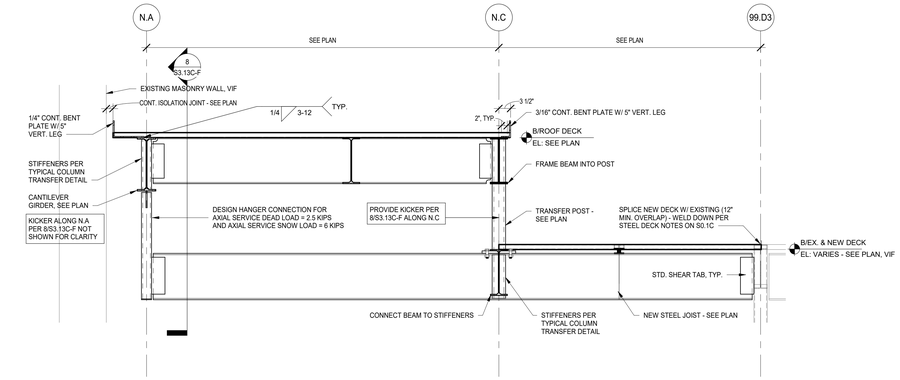

2 FRAMING DETAIL
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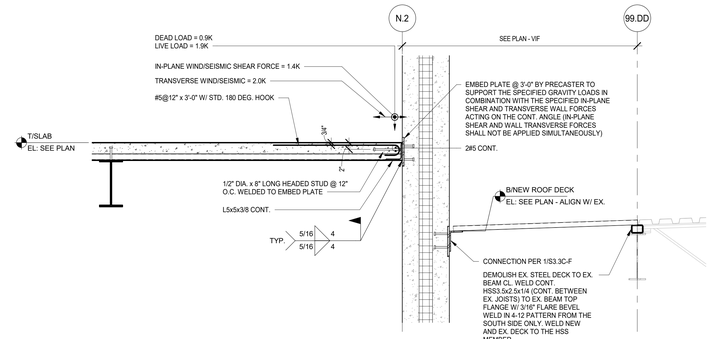

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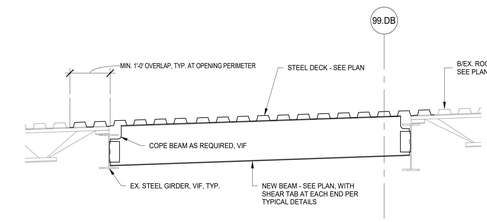
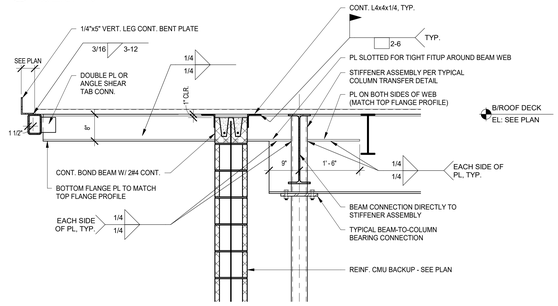


1 FRAMING DETAIL
SCALE: 3/4" = 1'-0"



3 FRAMING DETAIL
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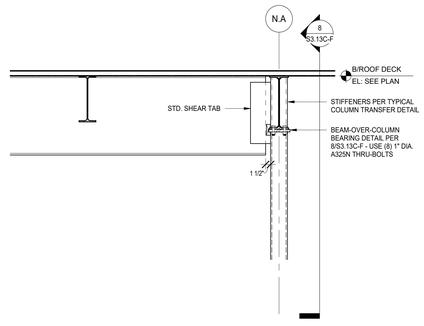
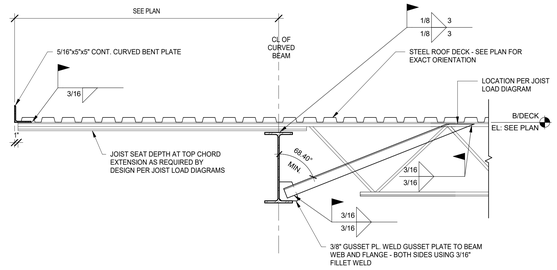
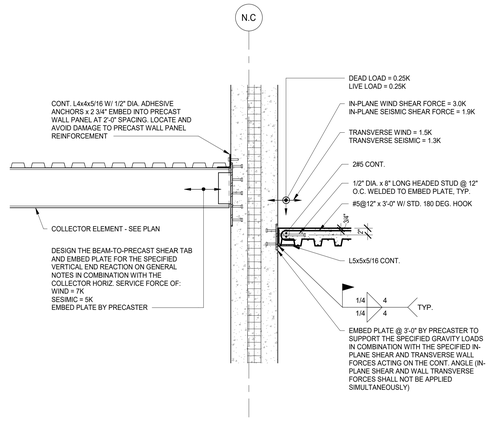


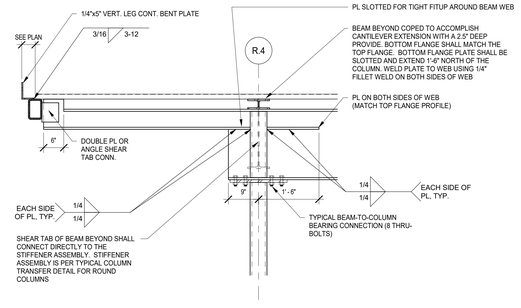


7 FRAMING DETAIL
SCALE: 3/4" = 1'-0"



9 FRAMING DETAIL
SCALE: 3/4" = 1'-0"

5 FRAMING DETAIL
SCALE: 3/4" = 1'-0"



8 PHASE C - FRAMING DETAIL 8 - AUDITORIUM
SCALE: 3/4" = 1'-0"

DISTRICT 99

Owner

Wight

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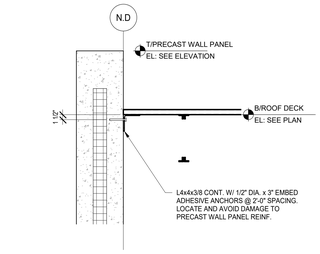
MFP IMPLEMENTATION - SOUTH

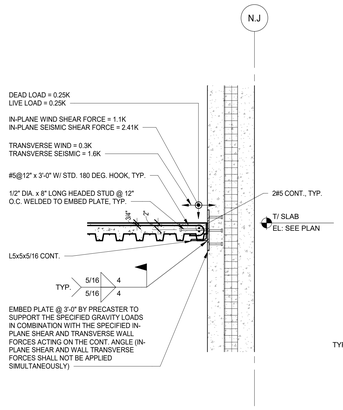
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

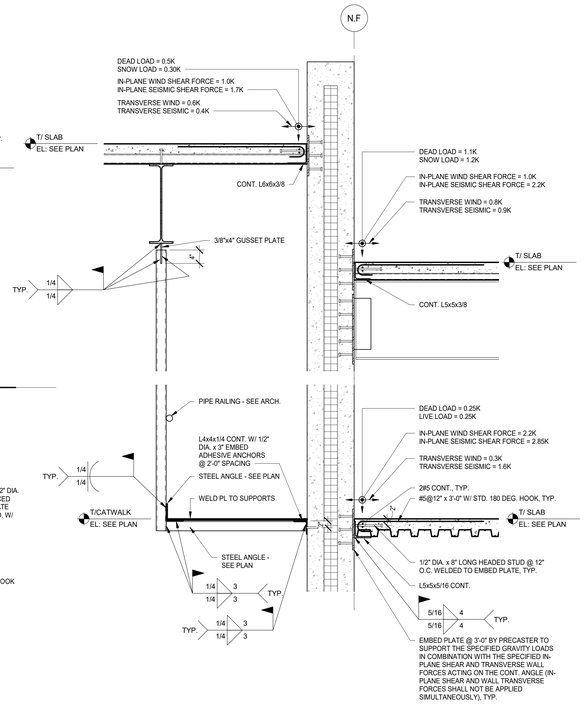
NON-TYPICAL SECTIONS AND DETAILS

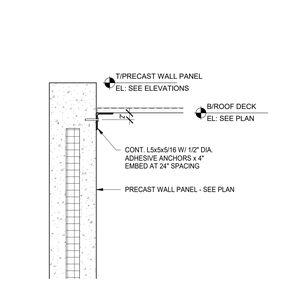
Project Number:
5274-42
Drawn By:
J.G.
Sheet:

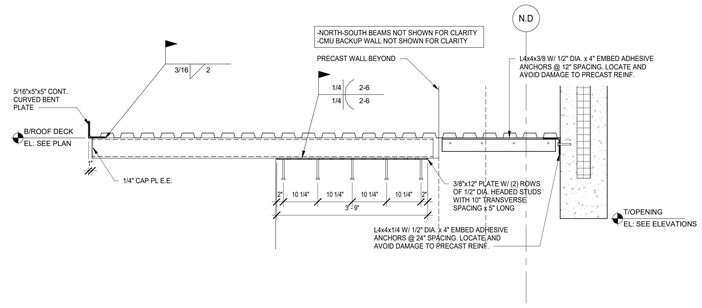
S3.6C-F

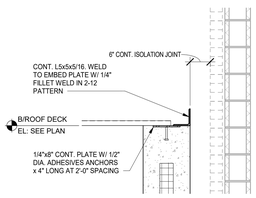


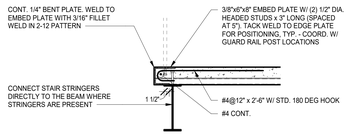


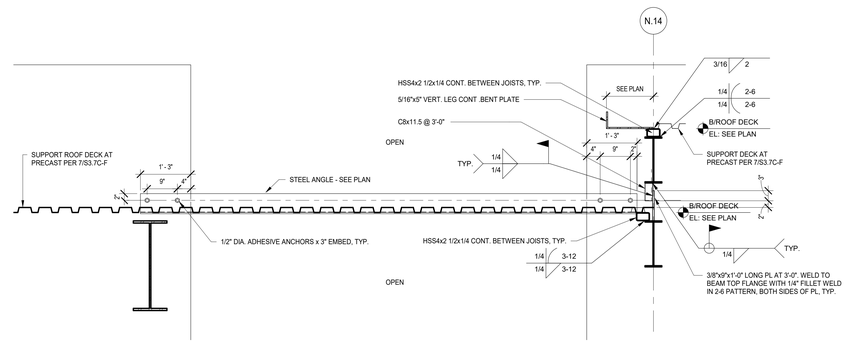


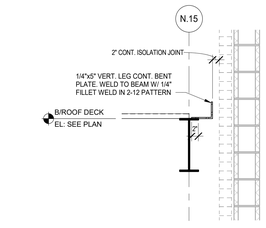


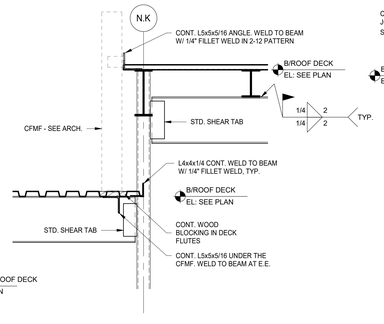


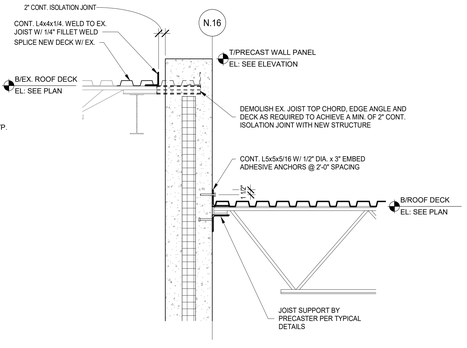


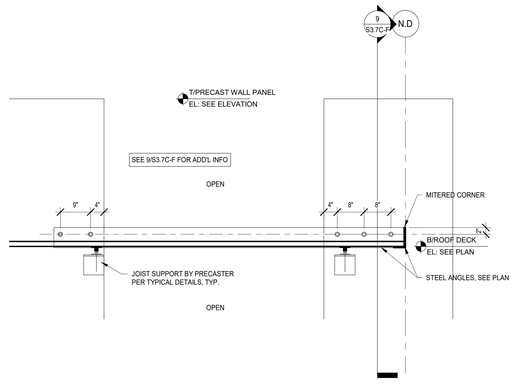


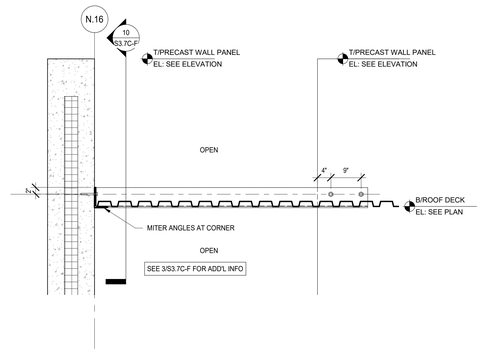


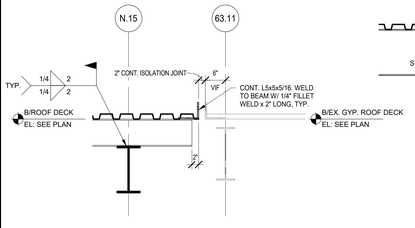


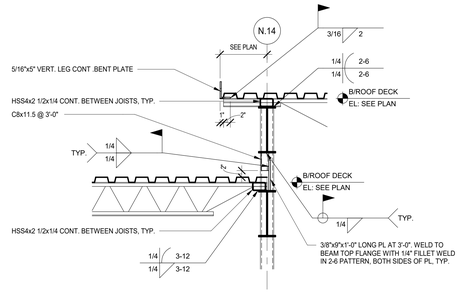


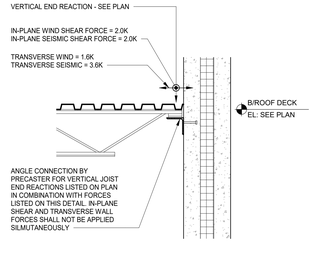


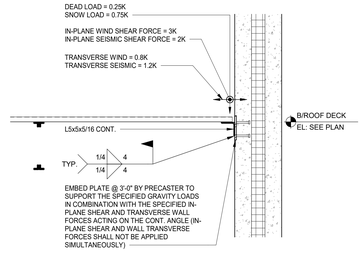


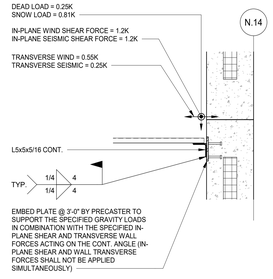


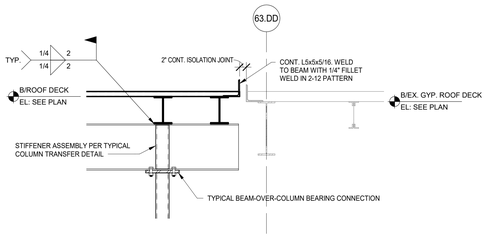












13 FRAMING DETAIL — SCALE: 3/4" = 1'-0"
14 FRAMING DETAIL — SCALE: 3/4" = 1'-0"
12 FRAMING DETAIL — SCALE: 3/4" = 1'-0"
11 FRAMING DETAIL — SCALE: 3/4" = 1'-0"
10 FRAMING DETAIL — SCALE: 3/4" = 1'-0"
9 FRAMING DETAIL — SCALE: 3/4" = 1'-0"
8 FRAMING DETAIL — SCALE: 3/4" = 1'-0"
7 FRAMING DETAIL — SCALE: 3/4" = 1'-0"
6 FRAMING DETAIL — SCALE: 3/4" = 1'-0"
5 FRAMING DETAIL — SCALE: 3/4" = 1'-0"
4 FRAMING DETAIL — SCALE: 3/4" = 1'-0"
3 FRAMING DETAIL — SCALE: 3/4" = 1'-0"
2 FRAMING DETAIL — SCALE: 3/4" = 1'-0"
1 FRAMING DETAIL — SCALE: 3/4" = 1'-0"
19 FRAMING DETAIL — SCALE: 3/4" = 1'-0"
18 FRAMING DETAIL — SCALE: 3/4" = 1'-0"
17 FRAMING DETAIL — SCALE: 3/4" = 1'-0"
16 FRAMING DETAIL — SCALE: 3/4" = 1'-0"
15 FRAMING DETAIL — SCALE: 3/4" = 1'-0"

DISTRICT 99

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MFP IMPLEMENTATION - SOUTH

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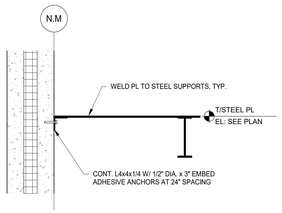
DOWNERS GROVE, IL 60516

NON-TYPICAL SECTIONS AND DETAILS

Project Number: 5274-42
Drawn By: J.G.
Sheet: **S3.7C-F**



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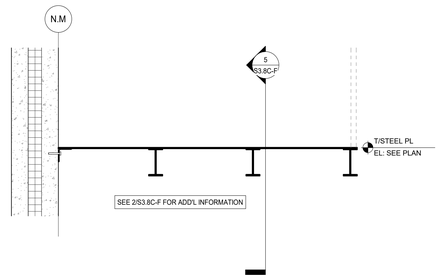
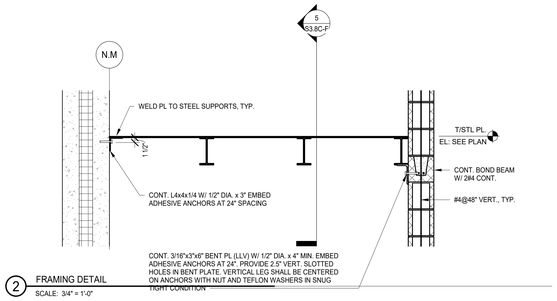
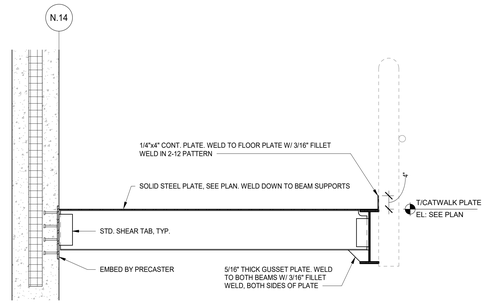
SCALE: 3/4" = 1'-0"

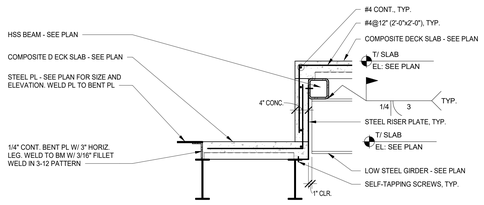


4 FRAMING DETAIL
SCALE: 3/4" = 1'-0"

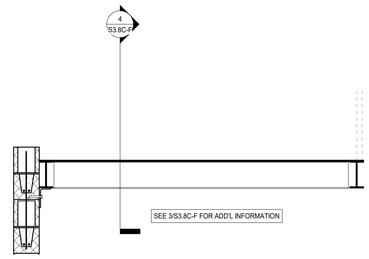


2 FRAMING DETAIL
SCALE: 3/4" = 1'-0"

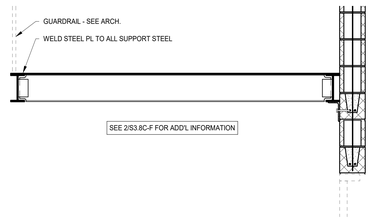




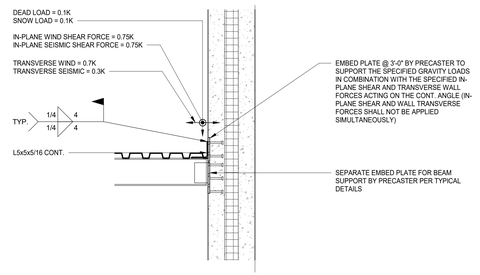
8 FRAMING DETAIL
SCALE: 3/4" = 1'-0"



5 FRAMING DETAIL
SCALE: 3/4" = 1'-0"



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



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

11 FRAMING DETAIL
SCALE: 3/4" = 1'-0"

10 FRAMING DETAIL
SCALE: 3/4" = 1'-0"

9 FRAMING DETAIL
SCALE: 3/4" = 1'-0"

7 FRAMING DETAIL
SCALE: 3/4" = 1'-0"

17 FRAMING DETAIL
SCALE: 3/4" = 1'-0"

14 FRAMING DETAIL
SCALE: 3/4" = 1'-0"

13 FRAMING DETAIL
SCALE: 3/4" = 1'-0"

12 FRAMING DETAIL
SCALE: 3/4" = 1'-0"

16 PHASE C - FRAMING DETAIL 46 - AUDITORIUM
SCALE: 3/4" = 1'-0"

15 FRAMING DETAIL
SCALE: 3/4" = 1'-0"

DISTRICT 99

Owner

Wight

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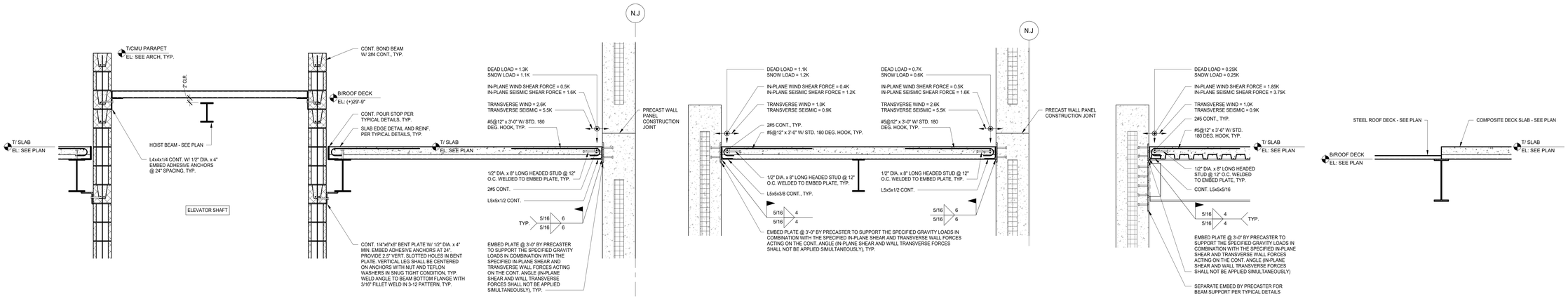
REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019

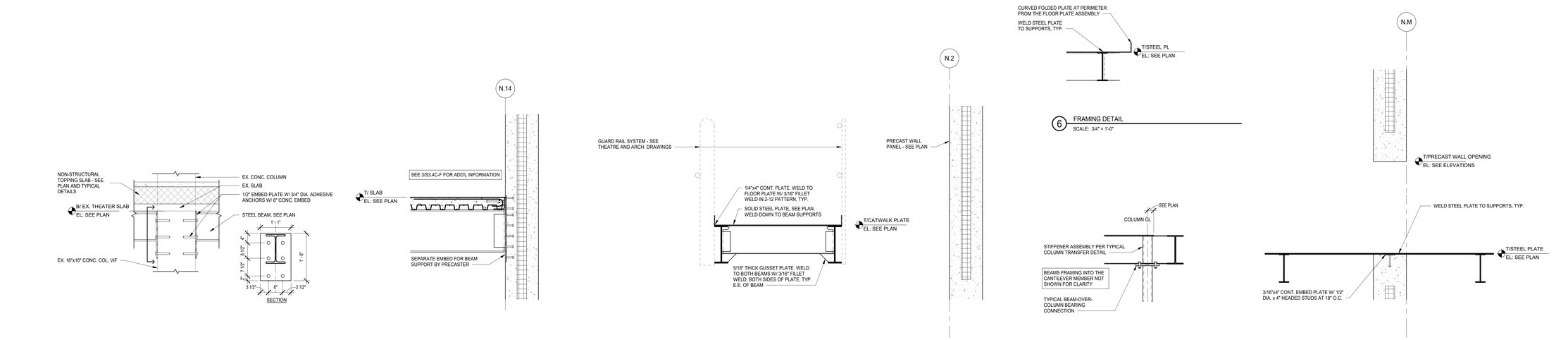
MFP IMPLEMENTATION - SOUTH

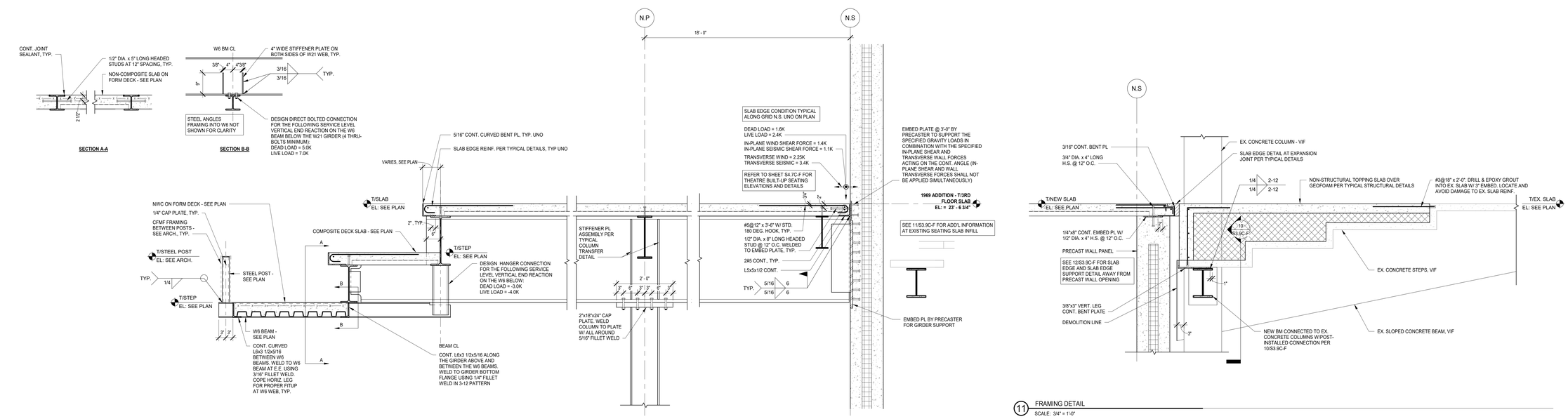
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

NON-TYPICAL SECTIONS AND DETAILS

Project Number:
5274-42
Drawn By:
J.G.
Sheet:
S3.8C-F







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REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

NON-TYPICAL SECTIONS AND DETAILS

Project Number:
5274-42
Drawn By:
J.G.
Sheet:

S3.9C-F

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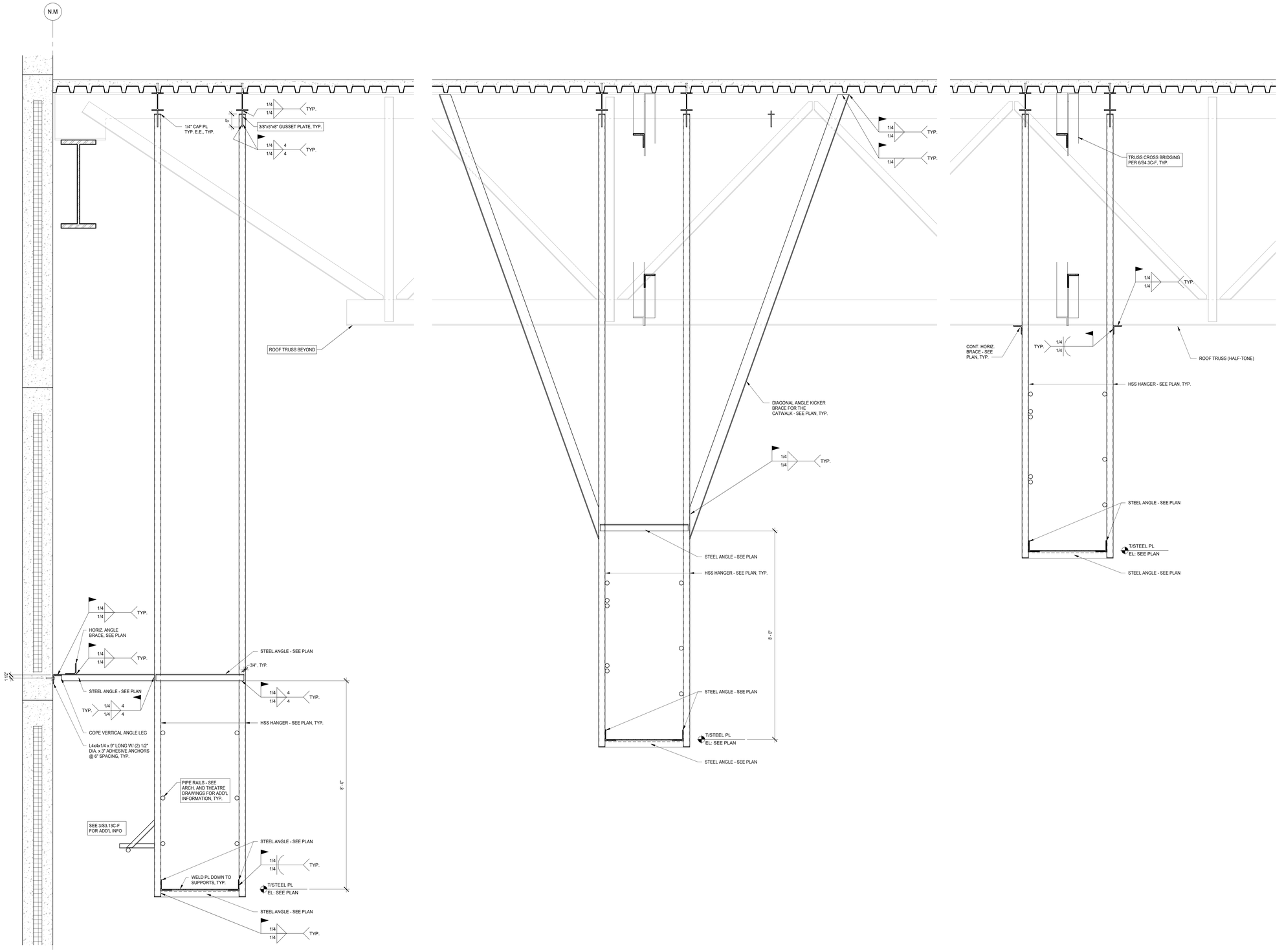

1 FRAMING DETAIL
SCALE: 3/4" = 1'-0"

△9

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REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

NON-TYPICAL SECTIONS AND DETAILS

Project Number:
5274-42
Drawn By:
J.G.
Sheet:
S3.10C-F

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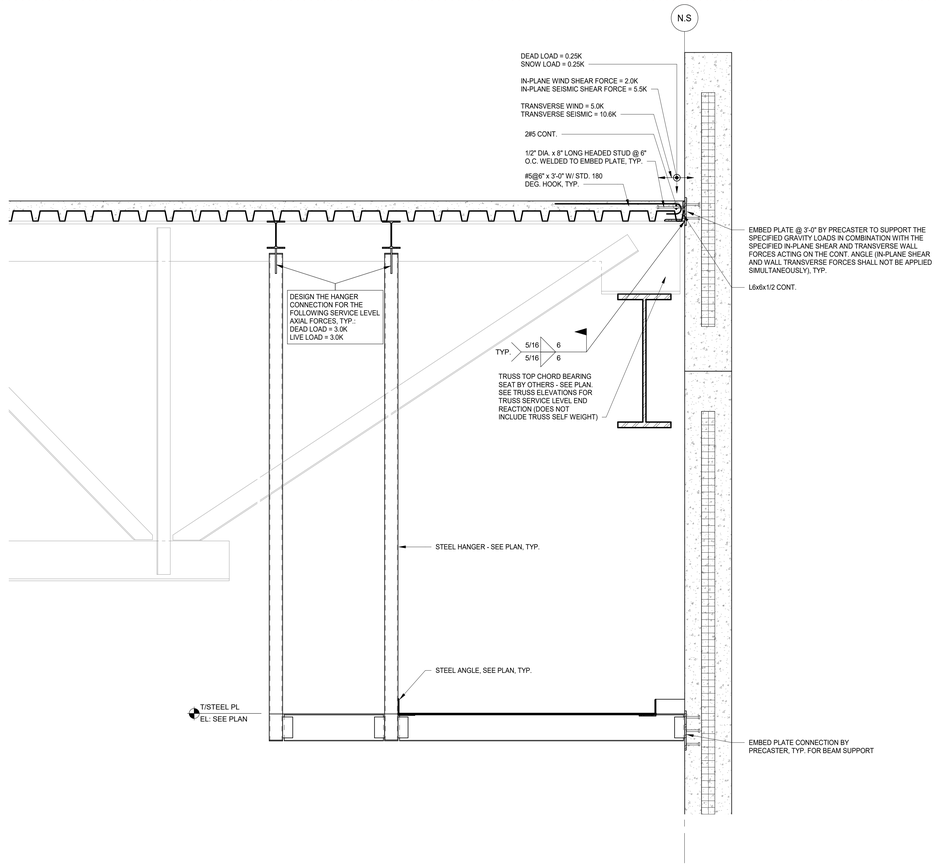
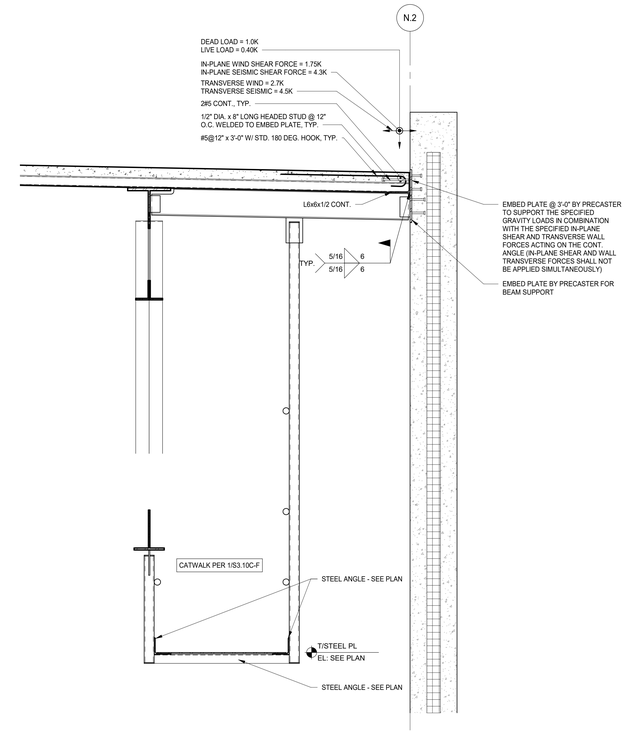
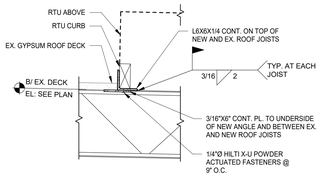
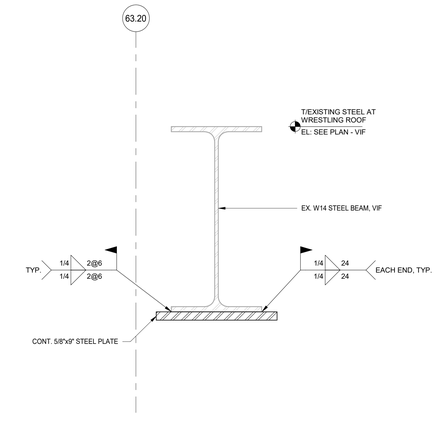




4 FRAMING DETAIL
SCALE: 3/4" = 1'-0"

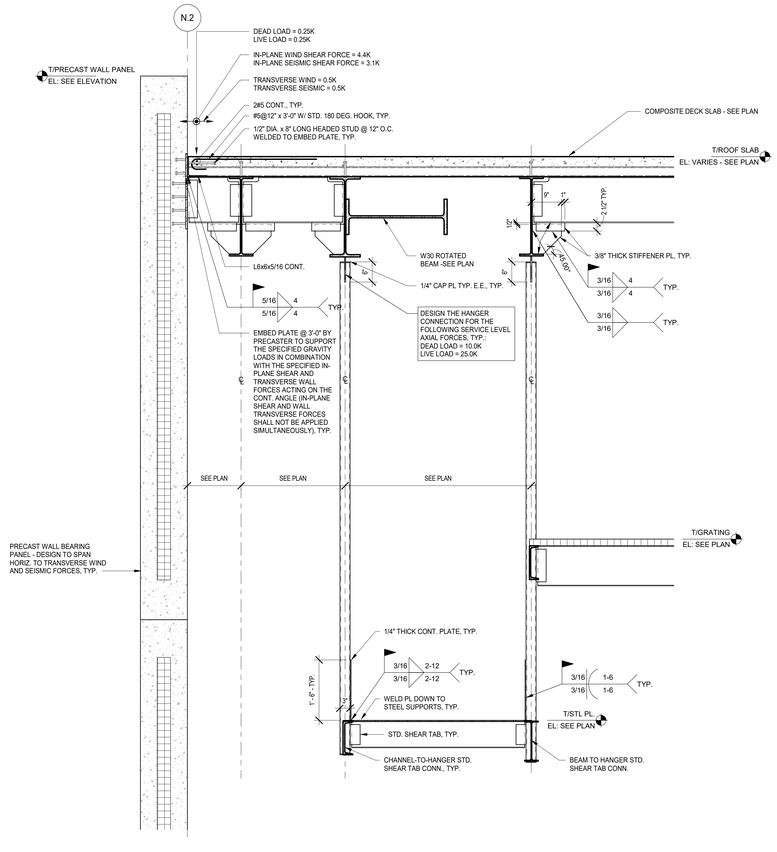


5 FRAMING DETAIL
SCALE: 3/4" = 1'-0"



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

2 FRAMING DETAIL
SCALE: 3" = 1'-0"



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

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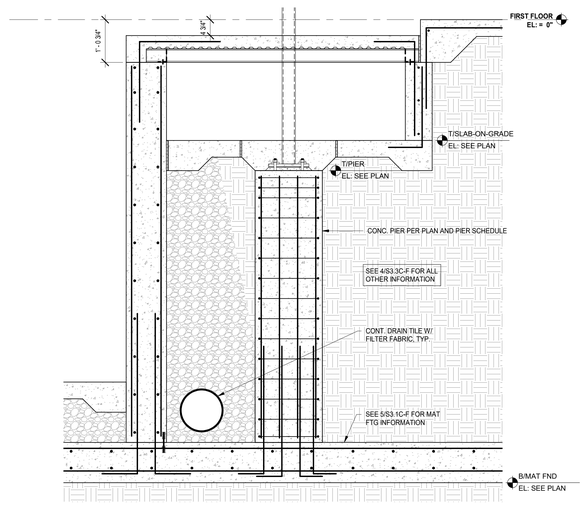
REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019

MFP IMPLEMENTATION - SOUTH

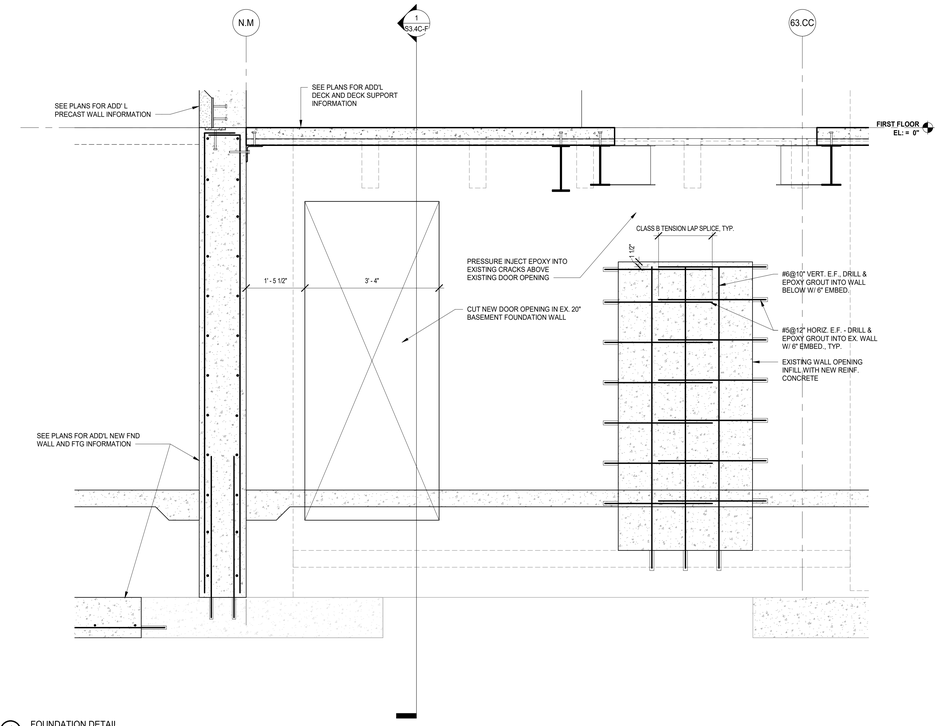
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

NON-TYPICAL SECTIONS AND DETAILS

Project Number:
5274-42
Drawn By:
J.G.
Sheet:
S3.11C-F



2 FOUNDATION DETAIL
SCALE: 3/4" = 1'-0"



1 FOUNDATION DETAIL
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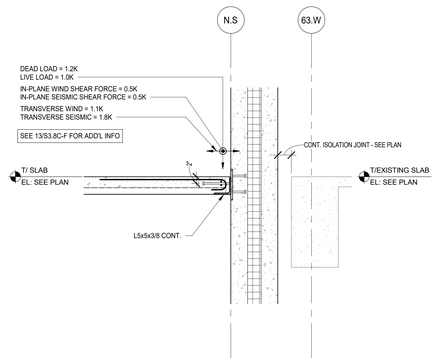
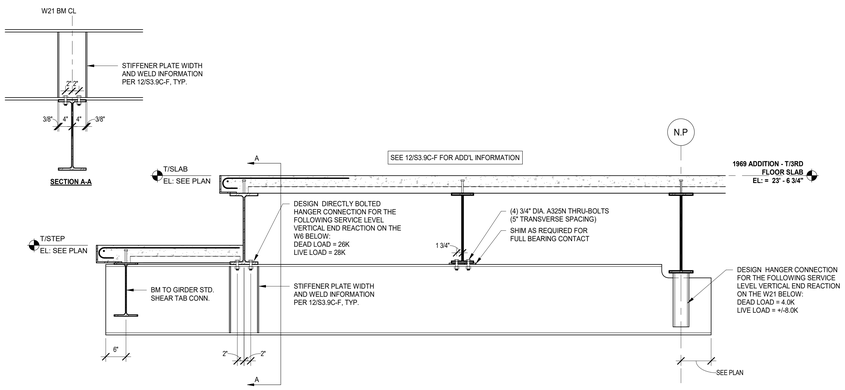


6 FRAMING DETAIL
SCALE: 3/4" = 1'-0"



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

DISTRICT 99

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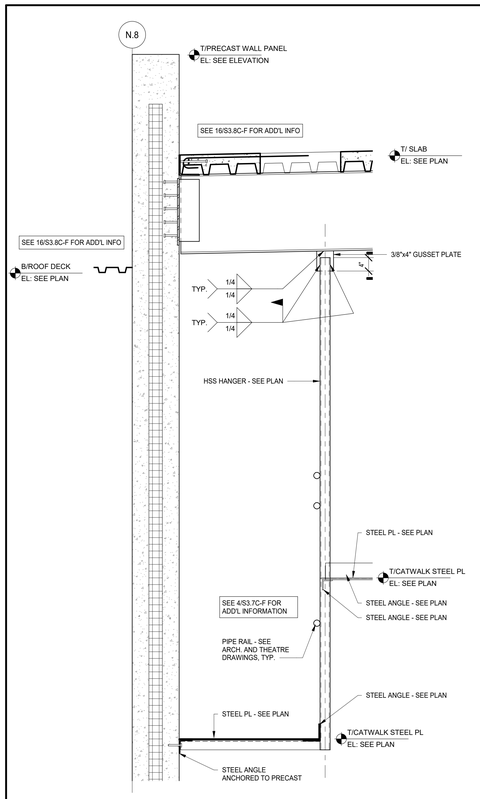
REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019
36	ADDENDUM 2 – BG8	12.04.2019

MFP IMPLEMENTATION - SOUTH

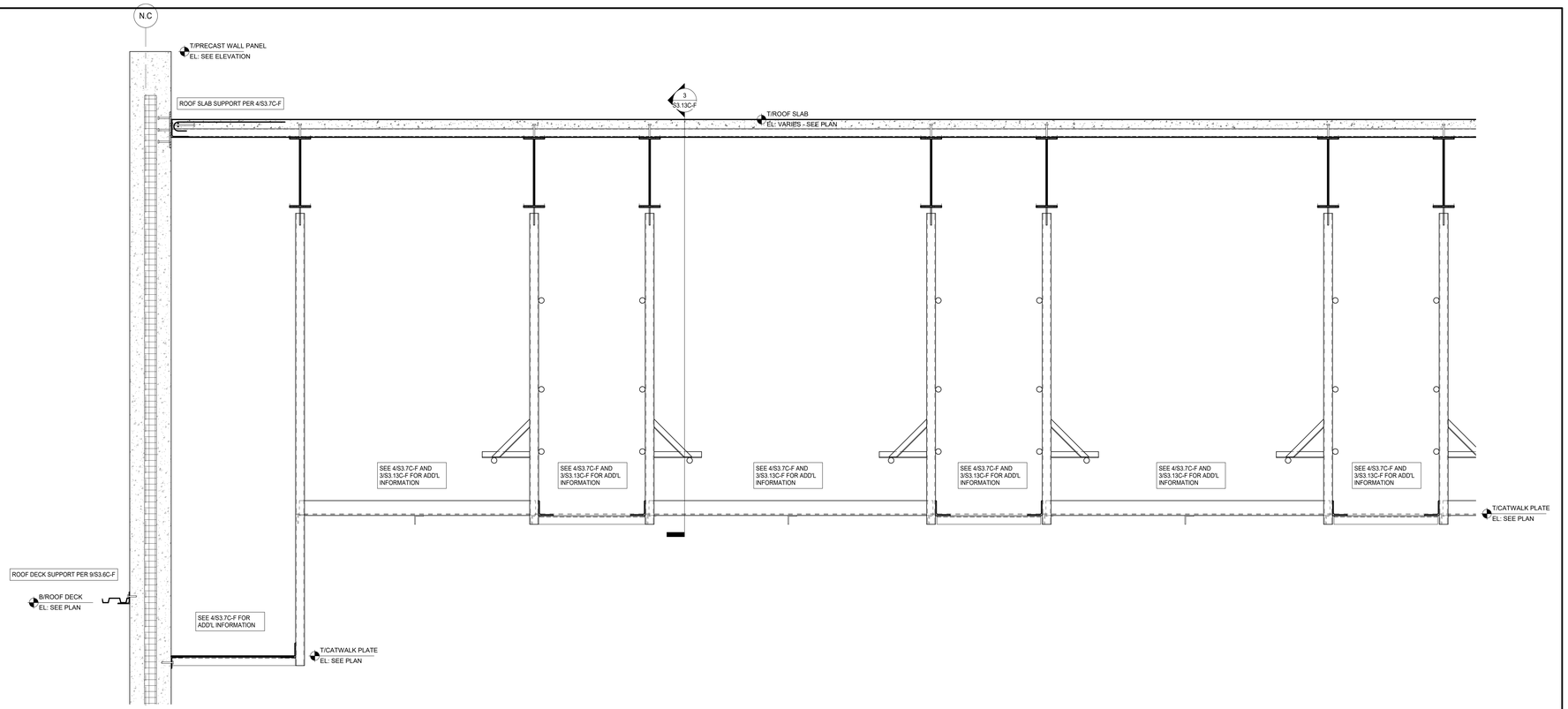
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

NON-TYPICAL SECTIONS AND DETAILS

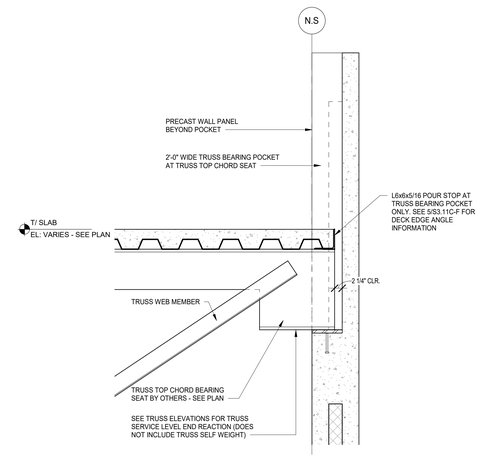
Project Number:
5274-42
Drawn By:
J.G.
Sheet:
S3.12C-F



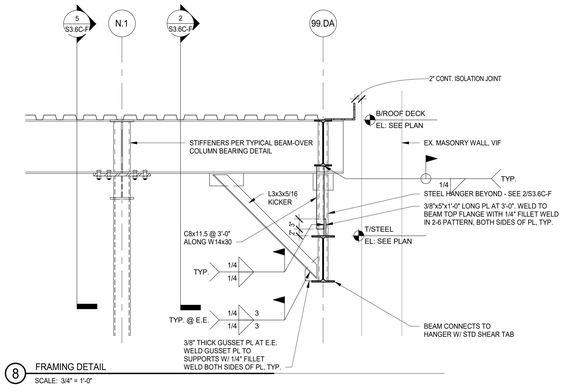
2 FRAMING DETAIL
SCALE: 3/4" = 1'-0"



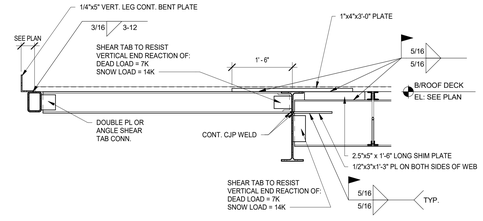
1 FRAMING DETAIL
SCALE: 3/4" = 1'-0"



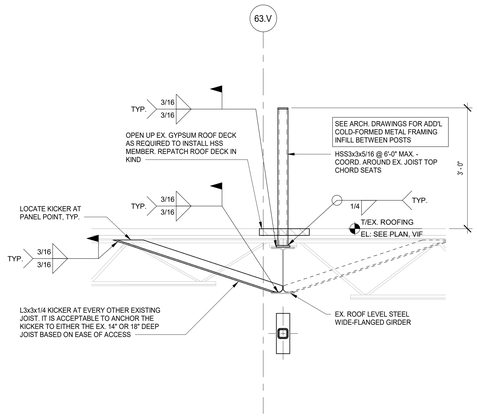
7 FRAMING DETAIL
SCALE: 3/4" = 1'-0"



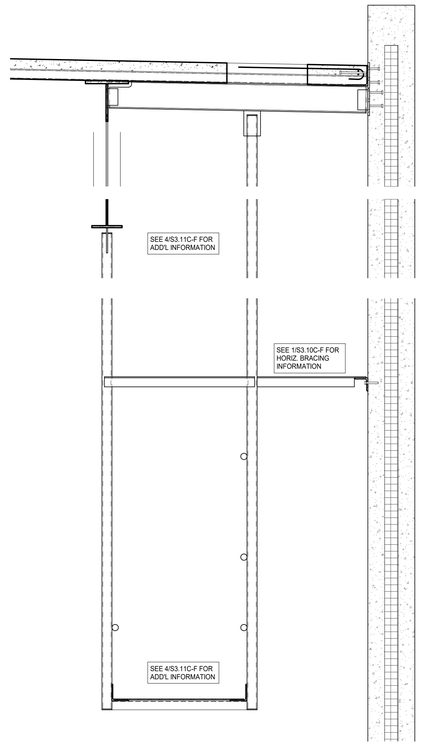
8 FRAMING DETAIL
SCALE: 3/4" = 1'-0"



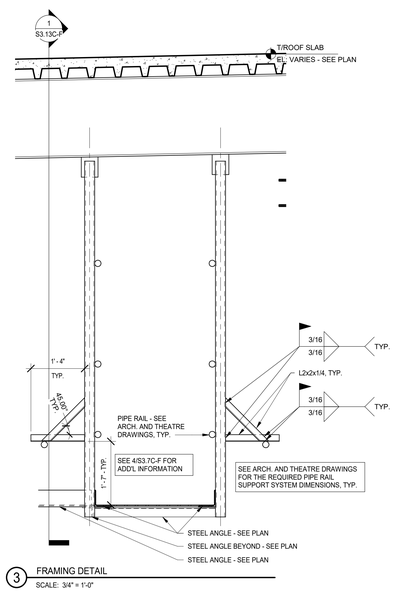
5 FRAMING DETAIL
SCALE: 3/4" = 1'-0"



6 FRAMING DETAIL
SCALE: 3/4" = 1'-0"



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



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

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DISTRICT 99

Owner

Wight

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2500 North Frontage Road
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P 630.969.7000
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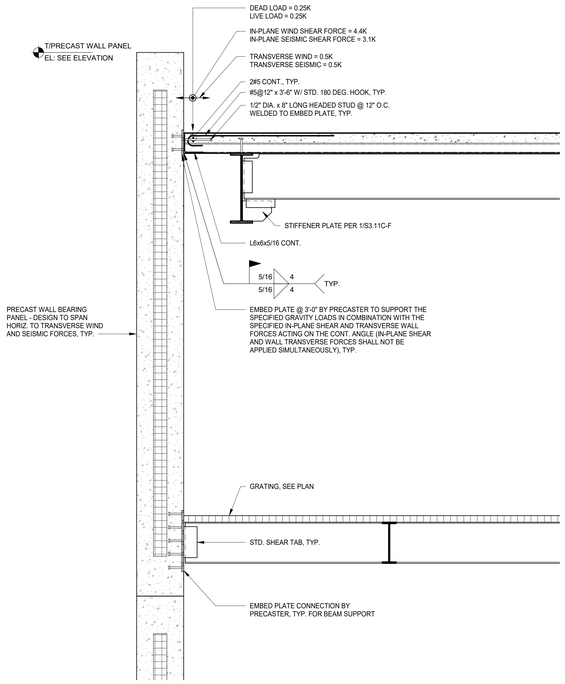
REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019

MFP IMPLEMENTATION - SOUTH

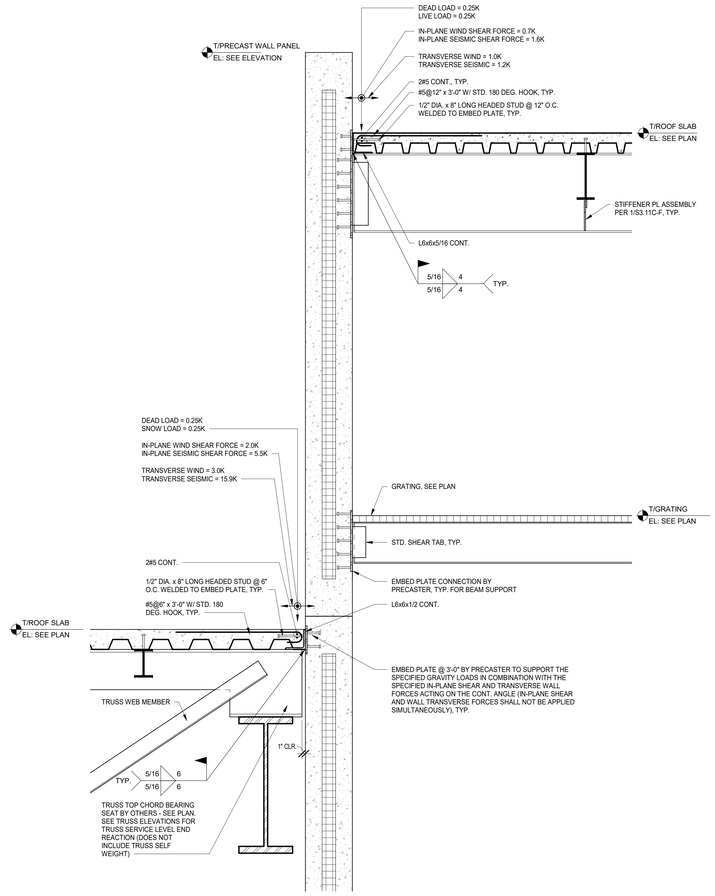
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

NON-TYPICAL SECTIONS AND DETAILS

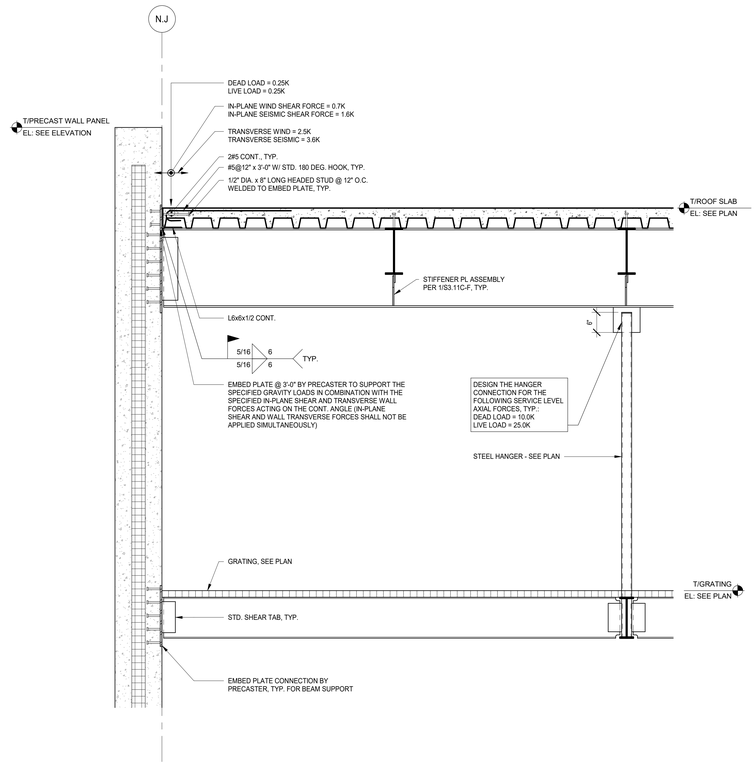
Project Number:
5274-42
Drawn By:
J.G.
Sheet:
S3.13C-F



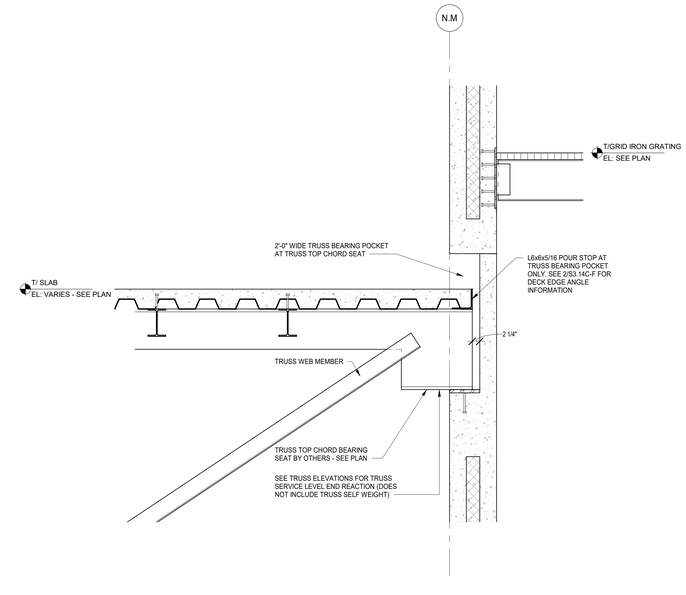
3 FRAMING DETAIL
SCALE: 3/4" = 1'-0"



2 FRAMING DETAIL
SCALE: 3/4" = 1'-0"



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



4 PHASE C - FRAMING DETAIL 83 - AUDITORIUM
SCALE: 3/4" = 1'-0"

DISTRICT 99

Owner

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P 630.969.7000
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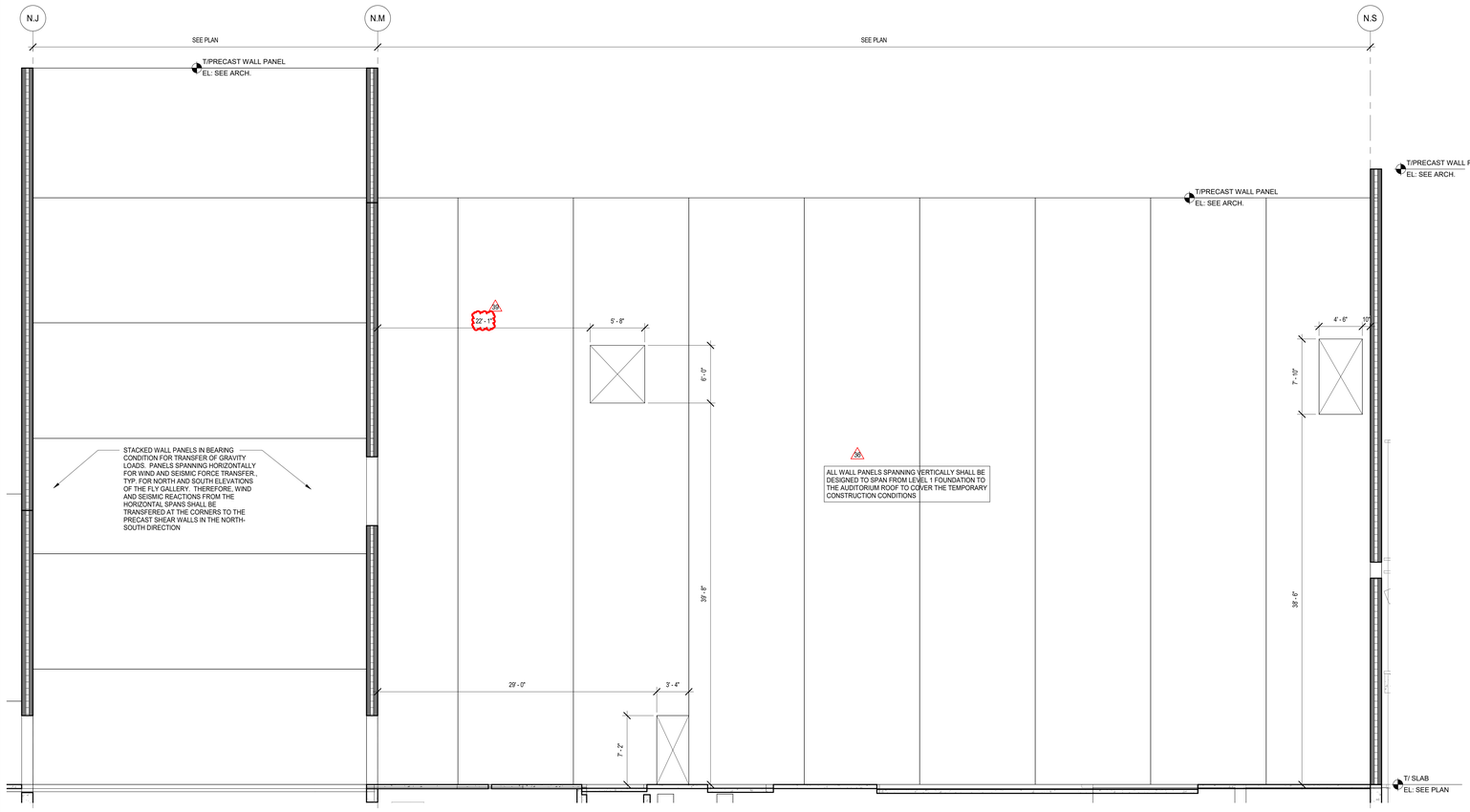
REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019

MFP IMPLEMENTATION - SOUTH

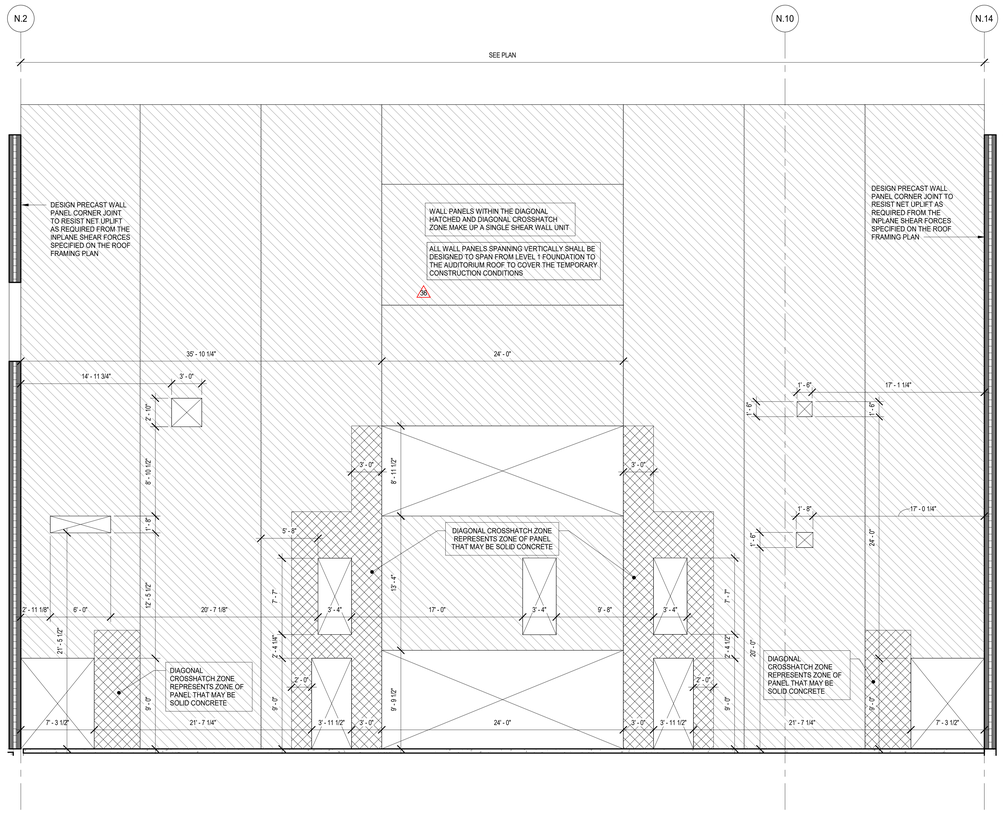
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

NON-TYPICAL SECTIONS AND DETAILS

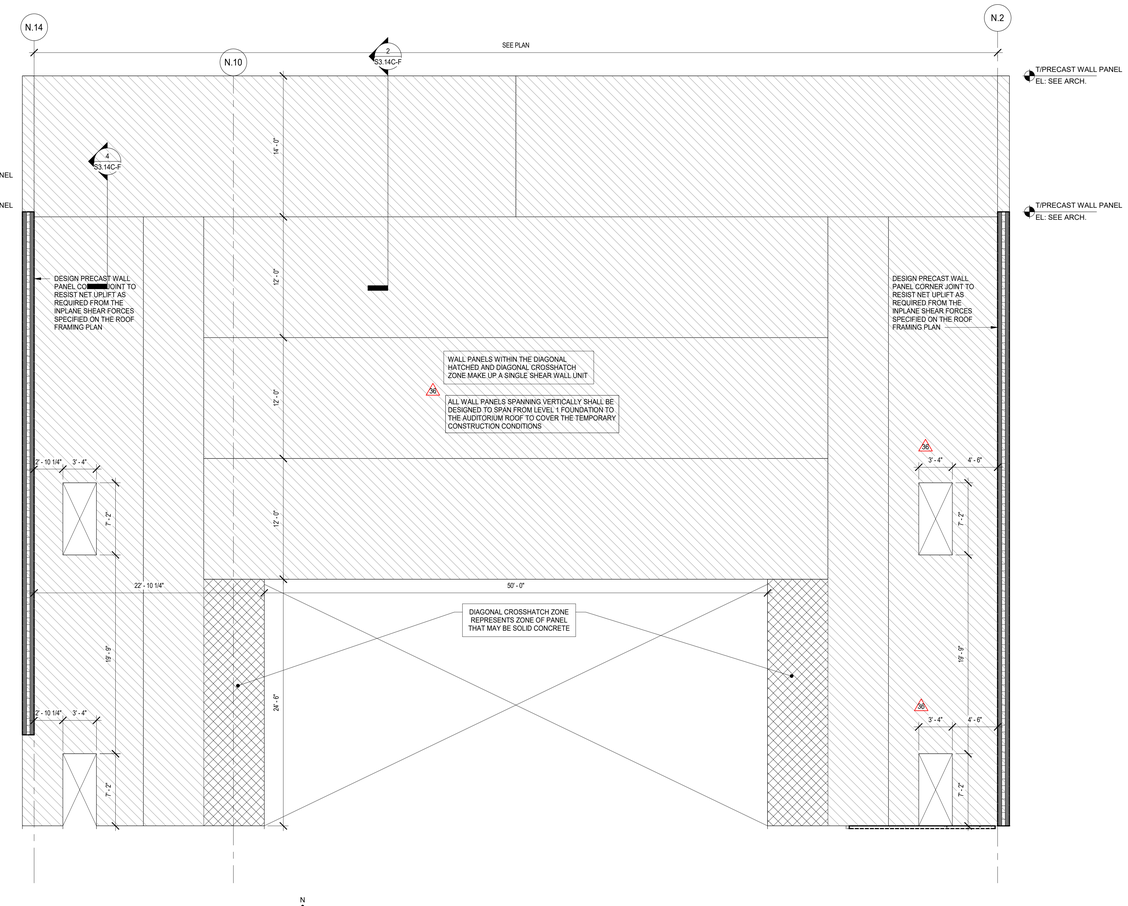
Project Number:
5274-42
Drawn By:
J.G.
Sheet:
39
S3.14C-F



1 AUDITORIUM/FLY GALLERY - NORTH PRECAST ELEVATION
SCALE: 3/16" = 1'-0"



2 AUDITORIUM - EAST PRECAST ELEVATION
SCALE: 3/16" = 1'-0"



3 AUDITORIUM - WEST PRECAST ELEVATION
SCALE: 3/16" = 1'-0"

N

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REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019
36	ADDENDUM 2 – BG8	12.04.2019
	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019
	ISSUED FOR 75% CD - PHASE C	10.14.2019
	ISSUED FOR 25% CD - PHASE C	8.30.2019

MFP IMPLEMENTATION - SOUTH

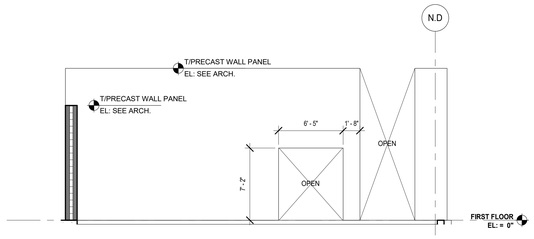
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

AREA F - PRECAST ELEVATIONS

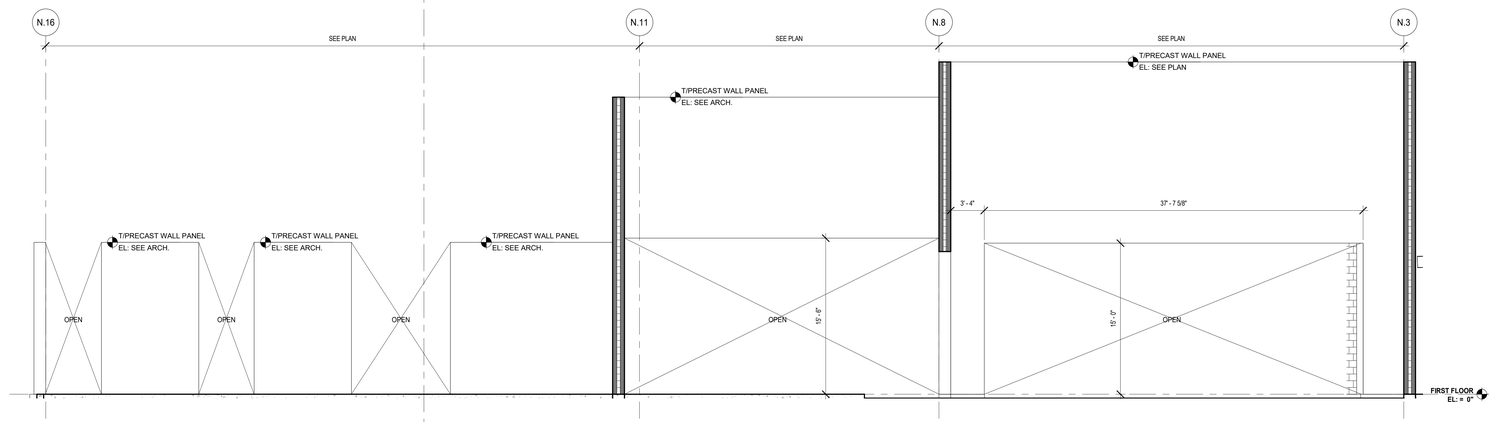
Project Number:
5274-42
Drawn By:
J.G.
Sheet:

S4.1C-F

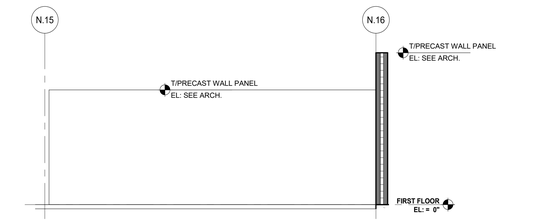
63.12



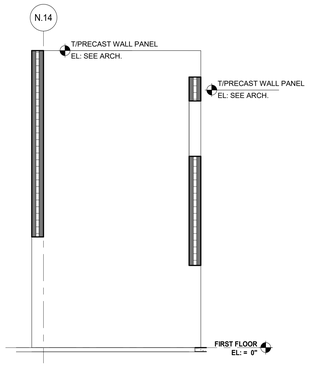
4 THEATRE CLASSROOM - SOUTH PRECAST ELEVATION
SCALE: 3/16" = 1'-0"



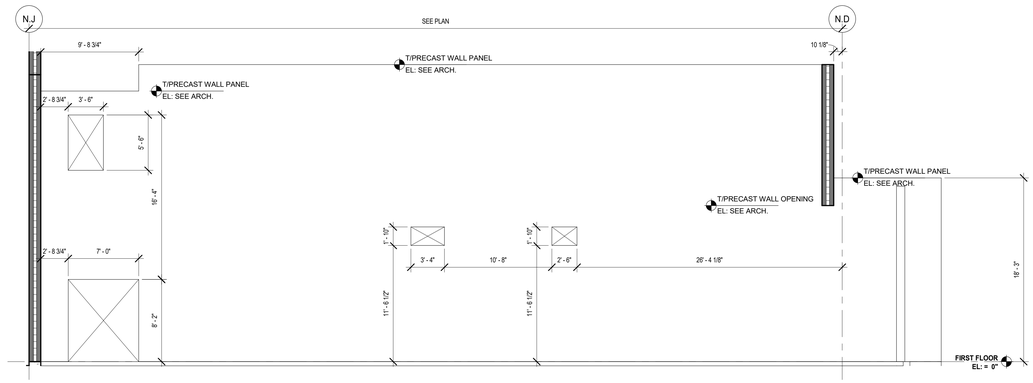
1 STUDIO THEATRE/SCENE SHOP/DRESSING ROOM/ THEATRE CLASSROOM - WEST PRECAST ELEVATION
SCALE: 3/16" = 1'-0"



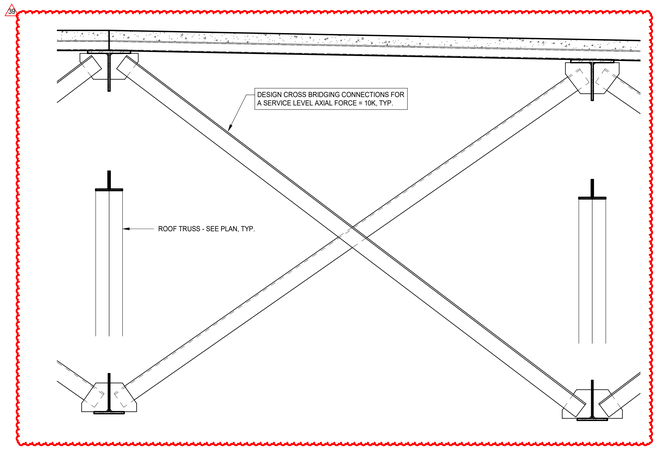
5 THEATRE CLASSROOM - EAST PRECAST ELEVATION
SCALE: 3/16" = 1'-0"



3 SCENE SHOP - EAST ELEVATION
SCALE: 3/16" = 1'-0"



2 SCENE SHOP - SOUTH PRECAST ELEVATION
SCALE: 3/16" = 1'-0"



6 TRUSS CROSS-BRIDGING FRAMING ELEVATION
SCALE: 3/4" = 1'-0"

Owner

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39	ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

AREA F - PRECAST ELEVATIONS

Project Number:
5274-42
Drawn By:
J.G.
Sheet:

S4.3C-F

GENERAL NOTE FOR ROOF TRUSS & LOAD DIAGRAM:

1. MINIMUM FLANGE WIDTH SHALL BE 8" AT TOP AND BOTTOM CHORDS.
2. ALL WEB MEMBERS ARE DOUBLE ANGLES WITH MINIMUM 4" WIDTH AND MAXIMUM 6" WIDTH.
3. ALL INDICATED LOADS ARE SERVICE LOAD. TOTAL UNIFORM AND TRAPEZOIDAL LOADS INCLUDES SELF-WEIGHT OF COMPOSITE DECK AND WEIGHTS OF THE FOLLOWING:
   ROOF SYSTEM ABOVE THE COMPOSITE DECK
   FUTURE PV PANEL LOADS ABOVE THE ROOF SYSTEM
   CEILING, MEP AND LIGHTING SYSTEM BELOW THE COMPOSITE DECK
   LOADS FROM CATWALK SYSTEM BELOW ARE INDICATED AS POINT LOADS. POINT LOADS CAN BE SEPARATED INTO 60/40 DEAD LOAD-TO-LIVE LOAD RATI0.
4. TRUSSES SHALL BE DESIGNED AS NON-COMPOSITE.
5. TRUSSES SHALL HAVE CROSS BRIDGING PER PLANS.
6. CAMBER 100% OF TRUSS DEAD LOAD (INCLUDING SUPERIMPOSED DEAD LOAD).
7. FIELD SURVEY BOTTOM CHORD ELEVATION OF TRUSS PRIOR TO INSTALLATION OF CATWALKS.
8. SELF-WEIGHT OF ROOF TRUSS IS NOT INCLUDED IN INDICATED TOTAL LOAD.
9. ALL TRUSSES SHALL BE PLACED TO THE UNDERSIDE OF COMPOSITE DECK SLAB. FOR TRUSSES BEARING ON FLAT WIDE-FLANGED GIRDERS, ADJUST TRUSS SEAT DEAPTH ACCORDINGLY TO THE GAP BETWEEN UNDERSIDE OF COMPOSITE DECK SLAB AND TOP OF WIDE FLANGED GIRDER.
10. * INDICATES END REACTION AND SELF-WEIGHT OF TRUSS SHALL BE ADDED FOR TOTAL LOADS. TYPICAL AT ALL END REACTIONS OF EACH TRUSS.

1 ROOF TRUSS ELEVATION & LOAD DIAGRAM
SCALE: 3/8" = 1'-0"

2 ROOF TRUSS ELEVATION & LOAD DIAGRAM
SCALE: 3/8" = 1'-0"

3 ROOF TRUSS ELEVATION & LOAD DIAGRAM
SCALE: 3/8" = 1'-0"

4 ROOF TRUSS ELEVATION & LOAD DIAGRAM
SCALE: 3/8" = 1'-0"

DISTRICT 99

Owner

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NOT FOR CONSTRUCTION

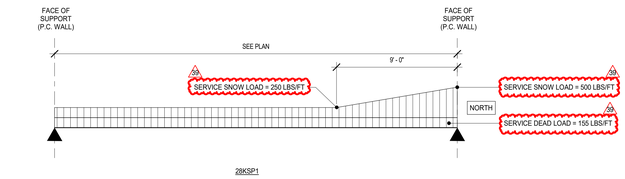
REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019

MFP IMPLEMENTATION - SOUTH

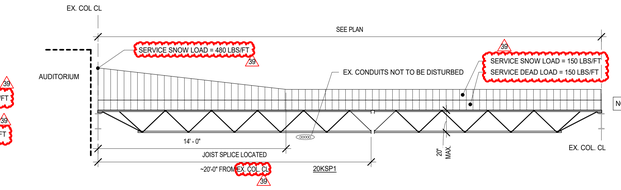
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

MISCELLANEOUS ELEVATIONS

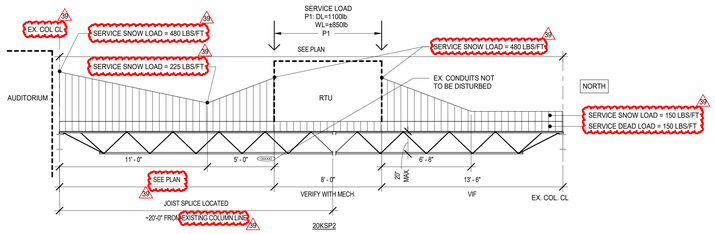
Project Number:
5274-42
Drawn By:
Author
Sheet:
S4.4C-F



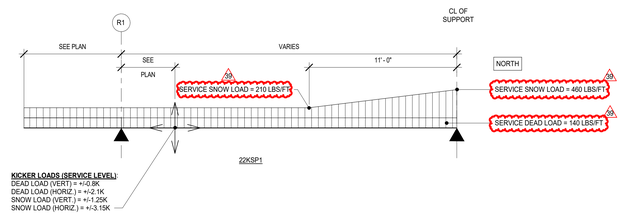
12 28KSP1 SPECIAL JOIST LOAD DIAGRAM
SCALE: 1/4" = 1'-0"



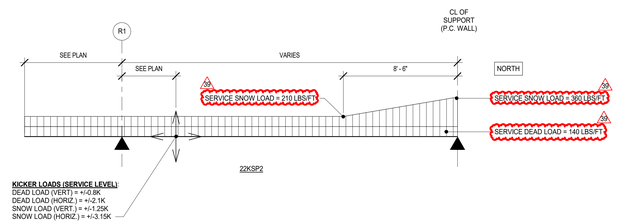
6 20KSP1 SPECIAL JOIST LOAD DIAGRAM
SCALE: 1/4" = 1'-0"



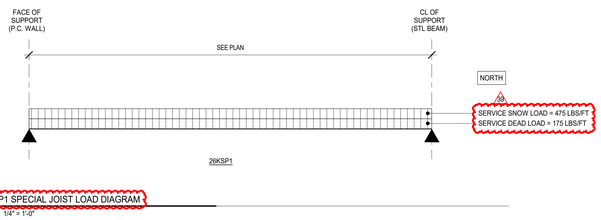
7 20KSP2 SPECIAL JOIST LOAD DIAGRAM
SCALE: 1/4" = 1'-0"



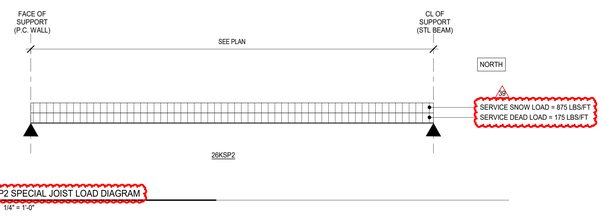
8 22KSP1 SPECIAL JOIST LOAD DIAGRAM
SCALE: 1/4" = 1'-0"



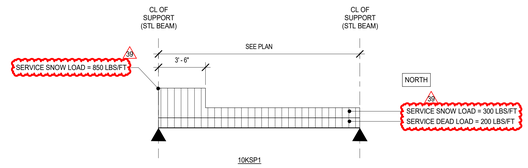
9 22KSP2 SPECIAL JOIST LOAD DIAGRAM
SCALE: 1/4" = 1'-0"



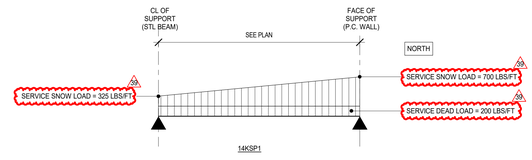
10 26KSP1 SPECIAL JOIST LOAD DIAGRAM
SCALE: 1/4" = 1'-0"



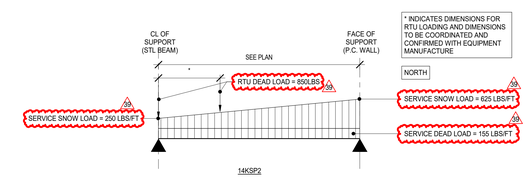
11 26KSP2 SPECIAL JOIST LOAD DIAGRAM
SCALE: 1/4" = 1'-0"



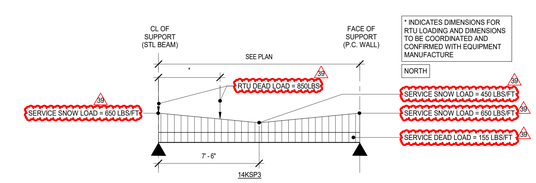
1 10KSP1 SPECIAL JOIST LOAD DIAGRAM
SCALE: 1/4" = 1'-0"



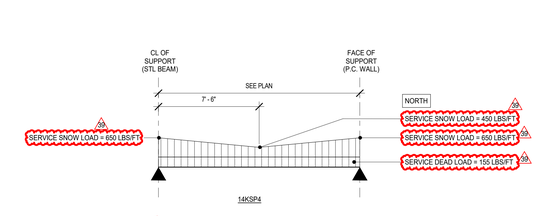
2 14KSP1 SPECIAL JOIST LOAD DIAGRAM
SCALE: 1/4" = 1'-0"



3 14KSP2 SPECIAL JOIST LOAD DIAGRAM
SCALE: 1/4" = 1'-0"



4 14KSP3 SPECIAL JOIST LOAD DIAGRAM
SCALE: 1/4" = 1'-0"



5 14KSP4 SPECIAL JOIST LOAD DIAGRAM
SCALE: 1/4" = 1'-0"

DISTRICT 99

Owner

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NOT FOR CONSTRUCTION

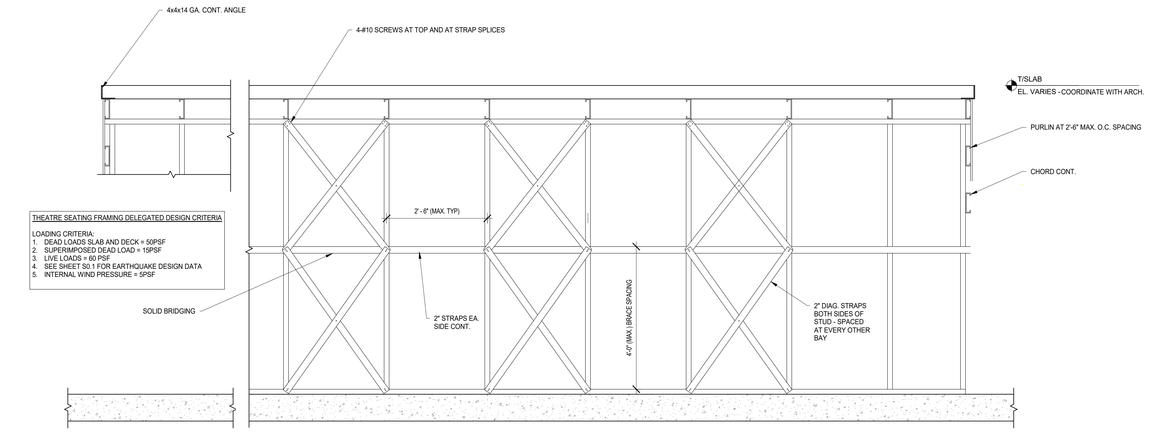
REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019

MFP IMPLEMENTATION - SOUTH

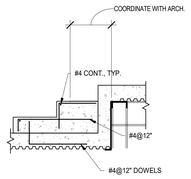
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

MISCELLANEOUS ELEVATIONS

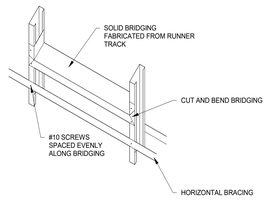
Project Number:
5274-42
Drawn By:
Author
Sheet:
S4.5C-F



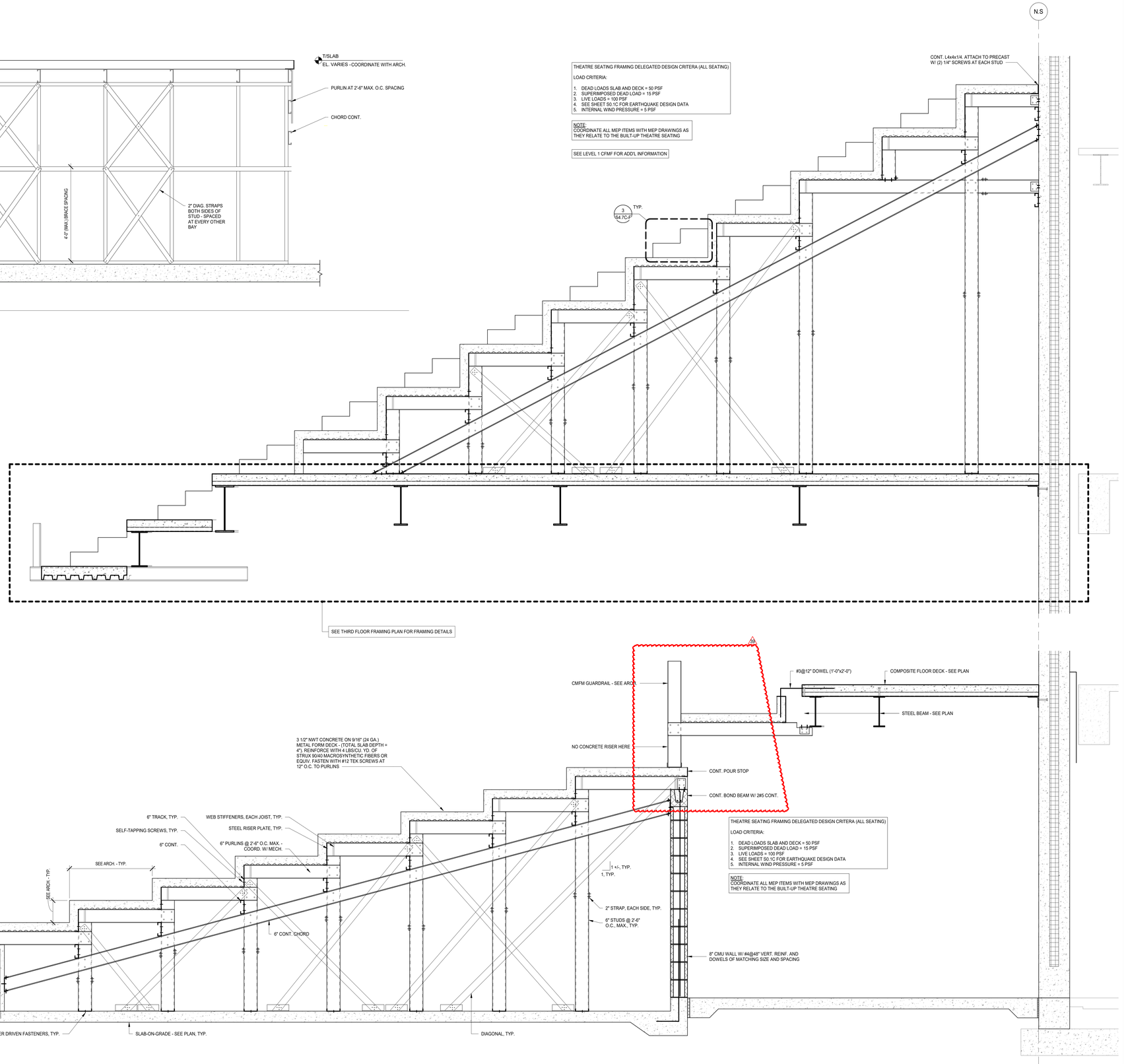
2 TYPICAL THEATRE SEATING TRANSVERSE SECTION
SCALE: 3/4" = 1'-0"



3 TYPICAL CONCRETE STEP DETAIL
SCALE: 3/4" = 1'-0"



4 TYPICAL SOLID BRIDGING DETAIL
SCALE: 3/4" = 1'-0"



1 THEATRE SEATING SECTION
SCALE: 3/4" = 1'-0"

DISTRICT 99

Owner

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REV	ISSUE	DATE
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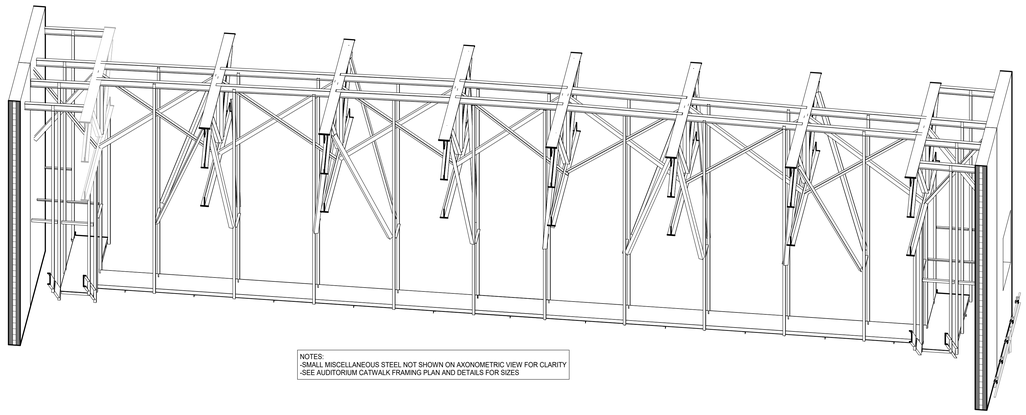
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

THEATRE BUILD-UP SEATING ELEVATIONS AND DETAILS

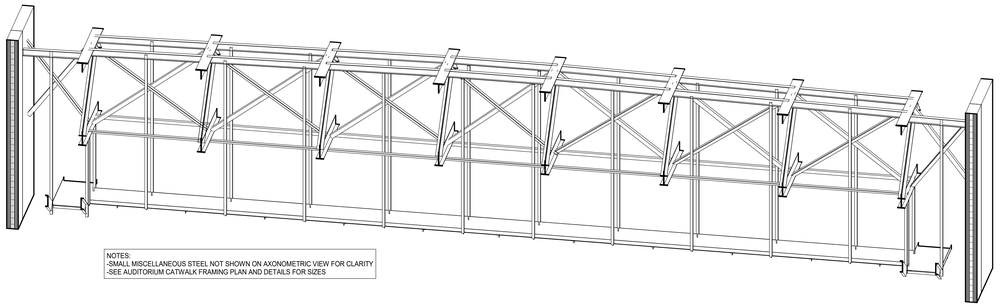
Project Number:
5274-42
Drawn By:
J.G.
Sheet:

S4.7C-F



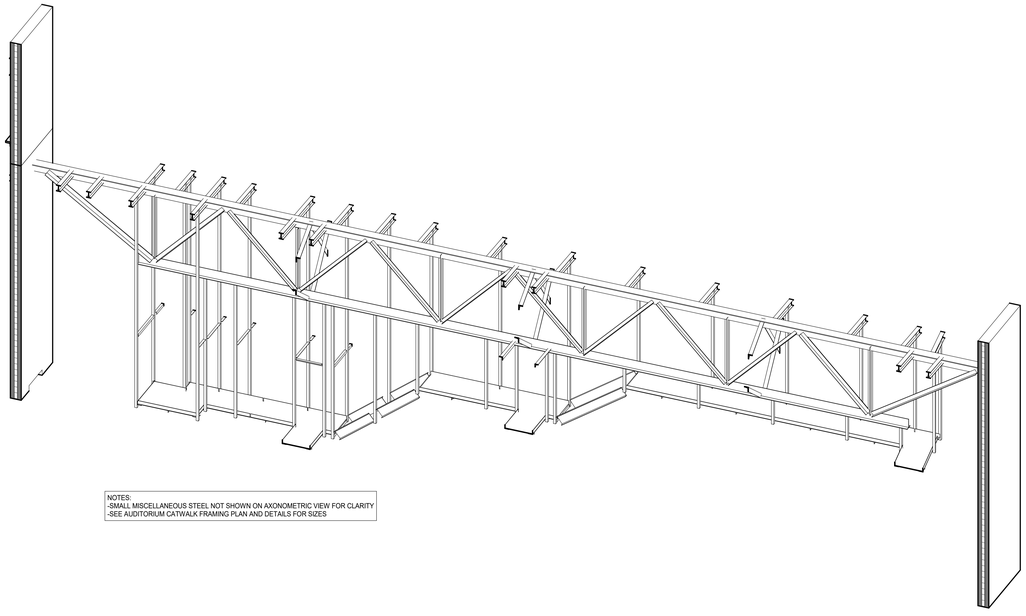
NOTES:
-SMALL MISCELLANEOUS STEEL NOT SHOWN ON AXONOMETRIC VIEW FOR CLARITY
-SEE AUDITORIUM CATWALK FRAMING PLAN AND DETALS FOR SIZES

2 AUDITORIUM CATWALK AXONOMETRIC VIEW - ELEVATION OF 35'-0"
SCALE:



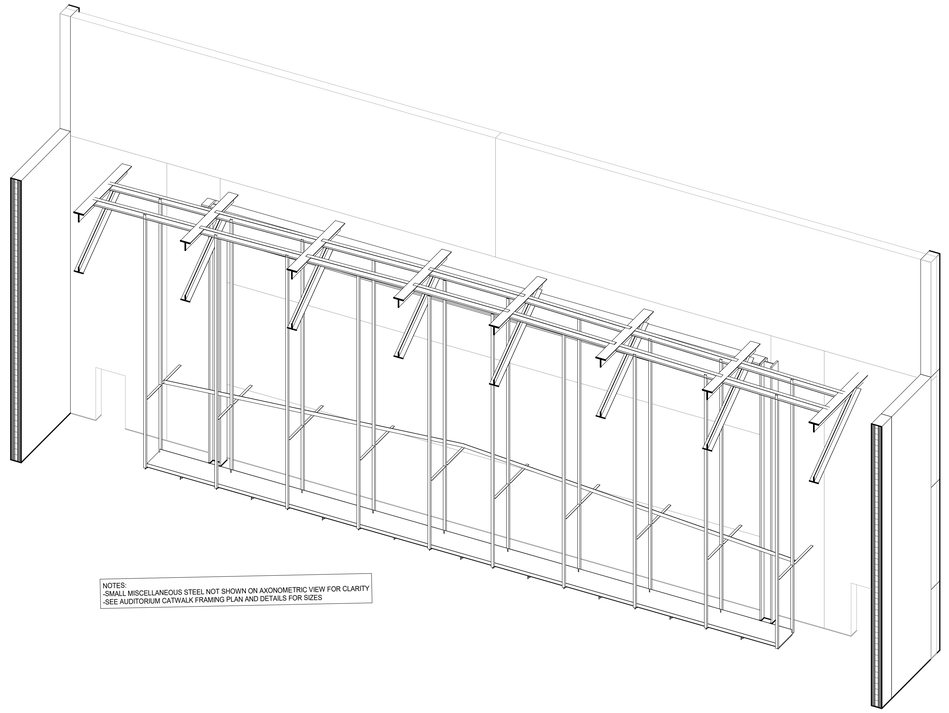
NOTES:
-SMALL MISCELLANEOUS STEEL NOT SHOWN ON AXONOMETRIC VIEW FOR CLARITY
-SEE AUDITORIUM CATWALK FRAMING PLAN AND DETALS FOR SIZES

3 AUDITORIUM CATWALK - AXONOMETRIC VIEW - ELEVATION OF 42'-3"
SCALE:



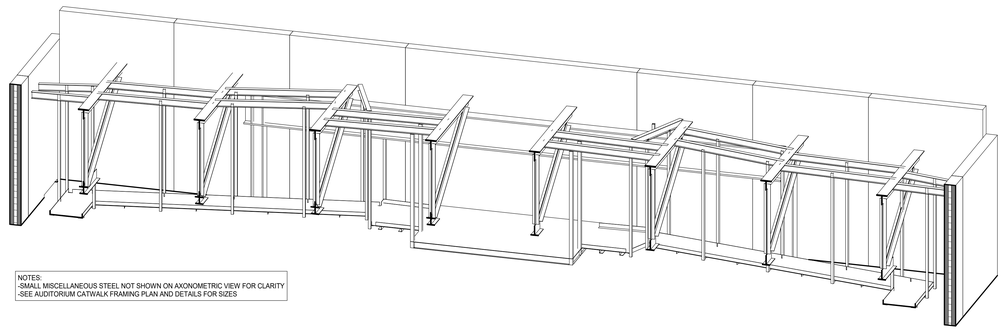
NOTES:
-SMALL MISCELLANEOUS STEEL NOT SHOWN ON AXONOMETRIC VIEW FOR CLARITY
-SEE AUDITORIUM CATWALK FRAMING PLAN AND DETALS FOR SIZES

5 AUDITORIUM CATWALK - AXONOMETRIC VIEW ALONG NORTH WALL
SCALE:



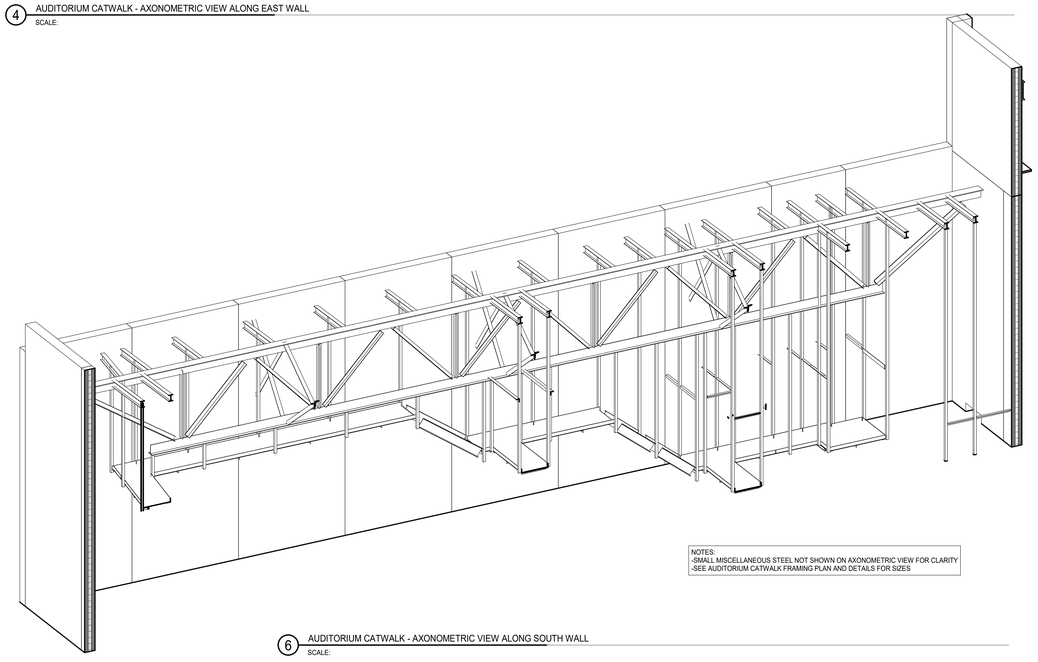
NOTES:
-SMALL MISCELLANEOUS STEEL NOT SHOWN ON AXONOMETRIC VIEW FOR CLARITY
-SEE AUDITORIUM CATWALK FRAMING PLAN AND DETALS FOR SIZES

1 AUDITORIUM CATWALK - AXONOMETRIC VIEW ALONG WEST WALL
SCALE:



NOTES:
-SMALL MISCELLANEOUS STEEL NOT SHOWN ON AXONOMETRIC VIEW FOR CLARITY
-SEE AUDITORIUM CATWALK FRAMING PLAN AND DETALS FOR SIZES

4 AUDITORIUM CATWALK - AXONOMETRIC VIEW ALONG EAST WALL
SCALE:



NOTES:
-SMALL MISCELLANEOUS STEEL NOT SHOWN ON AXONOMETRIC VIEW FOR CLARITY
-SEE AUDITORIUM CATWALK FRAMING PLAN AND DETALS FOR SIZES

6 AUDITORIUM CATWALK - AXONOMETRIC VIEW ALONG SOUTH WALL
SCALE:

DISTRICT 99

Owner

Wight

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REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

CATWALK AXONOMETRIC VIEWS

Project Number:
5274-42
Drawn By:
J.G.
Sheet:

S4.8C-F

AREA F - AUDITORIUM - COLUMN SCHEDULE

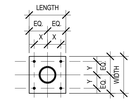
AUDITORIUM ROOF										
LEVEL 3 AUDITORIUM BALCONY										
NEW CANOPY ROOF OVER EVENT CORRIDOR 1-602										
SCENE SHOP MEZZANINE										
EXISTING ROOF OVER EVENT CORRIDOR 1-602										
LEVEL 2 AUDITORIUM BALCONY										
STUDIO THEATRE CLASSROOM ROOF/DRESSING ROOM ROOF/CORRIDOR 1-624 ROOF										
LOWER ANTE										
LEVEL 1 FOUNDATION PLAN	W14x193	HSS6x6x3/8	W14x72	HSS4x4x3/8	W14x257	HSS4x4x3/8	HSS6x6x3/8	HSS6x6x3/8	HSS5.000x0.500	HSS8x8x3/8
COLUMN LOCATION	N.5/N.R N.10/N.R	N.12/N.Q (NEAR) 2 N.9/N.Q 2 N.6/N.Q 2 N.4/N.Q (NEAR) 2	N.12/N.P N.9/N.P N.6/N.P N.4/N.P	N.L/99.DE 99.D11/99.DE 99.D11/99.DD 99.D10/99.DD	N.4/N.N N.11/N.N	N.14/N.D (NEAR) N.14/N.E (NEAR) N.14/N.F (NEAR) N.15/N.G N.15/N.I N.15/N.K N.15/N.L (NEAR)	N.15/N.E (NEAR)	N.9/N.E N.9/N.H N.9/N.I (NEAR) N.7/N.H N.5/N.H	R.1/R.4 R.1/R.7	N.1/R.4 R.3/R.5 R.3/R.6 N.C/99.DD N.1/N.A
BASE PLATE SIZE: BASE PLATE TYPE	BP 2	BP 1	BP 2	BP 1	BP 2	BP 1	BP 1	BP 1	BP 1	BP 1
LENGTH (in)	1'-6"	1'-2"	1'-2"	1'-0"	1'-6"	1'-0"	1'-2"	1'-2"	1'-2"	1'-2"
WIDTH (in)	2'-0"	1'-2"	1'-10"	1'-0"	2'-2"	1'-0"	1'-2"	1'-2"	1'-2"	1'-2"
X (in)	7"	5.5"	5"	4.5"	7"	4.5"	5.5"	5.5"	5.5"	5.5"
Y (in)	10"	5.5"	9"	4.5"	11"	4.5"	5.5"	5.5"	5.5"	5.5"
T (in)	1 1/2"	3/4"	1"	3/4"	1 1/2"	3/4"	3/4"	3/4"	3/4"	3/4"
# OF RODS	4	4	4	4	4	4	4	4	4	4
ROD DIA.	1"	3/4"	3/4"	3/4"	1"	3/4"	3/4"	3/4"	3/4"	3/4"
EMBED.	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"

NOTES:
1. FOR TOP OF CONCRETE PIER AND FOOTING ELEVATIONS AT STEEL COLUMN BASE PLATES, SEE PLANS AND PLAN NOTES.
2. SEE TYPICAL DETAILS FOR ADDITIONAL COLUMN BASE PLATE INFORMATION

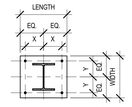
AREA B - COMMONS - COLUMN SCHEDULE

COMMONS ROOF LEVEL												
LEVEL 3												
LEVEL 2	HSS18x0.500 (AESS LATEGORY I)											
LEVEL 1		W18x87	W18x97	W10x49	W10x60	W12x65	W10x49	W12x65	HSS24x0.38	W12x40	W12x65	W12x65
COLUMN LOCATION	B.C-3 B.E-3 B.G-3 B.J-3 B.L-3 B.N-3 B.R-3	B.T-63.M (NEAR)	B.B-1 B.B-4 B.S-6 B.S-7 B.T-7	63.S-B.T (NEAR) 63.S-B.T 63.R-B.T 63.Q-B.T 63.P-B.T 63.N-B.T 63.S-63.7 63.Q-63.7 63.S-63.8 63.S-B.J	63.R-63.7 63.P-63.7	63.S-63.9	5-2 (NEAR)	B.R-2	B.P-2 B.P-3	B.N-2	B.M-2 B.M-3	B.L-2
BASE PLATE SIZE: BASE PLATE TYPE	BP 1	BP 2	BP 2	BP 2	BP 2	BP 2	BP 2	BP 2	BP 1 (SIM)	BP 2	BP 2	BP 2
LENGTH (in)	1'-10"	2'-4"	2'-4"	1'-6"	1'-6"	1'-8"	1'-6"	1'-8"	1'-8"	1'-6"	1'-8"	1'-6"
WIDTH (in)	1'-10"	1'-10"	1'-10"	1'-4"	1'-4"	1'-6"	1'-4"	1'-6"	1'-6"	1'-6"	1'-6"	1'-4"
X (in)	9"	10"	10"	7"	7"	8"	7"	8"	8"	7"	8"	7"
Y (in)	9"	8"	8"	6.5"	6.5"	7.5"	6.5"	7.5"	7.5"	7.5"	7.5"	6.5"
T (in)	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"
# OF RODS	4	4	4	4	4	4	4	4	4	4	4	4
ROD DIA.	1"	1 1/2"	1"	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1 1/4"	3/4"
EMBED.	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"

NOTES:
1. FOR TOP OF CONCRETE PIER AND FOOTING ELEVATIONS AT STEEL COLUMN BASE PLATES, SEE PLANS AND PLAN NOTES.
2. SEE TYPICAL DETAILS FOR ADDITIONAL COLUMN BASE PLATE INFORMATION



BP 1 - HSS TUBE COLUMNS (4 ANCHOR BOLTS)



BP 2 - WIDE FLANGE (4 ANCHOR BOLTS)

DISTRICT 99

Owner

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NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8-PHASE C	11.20.2019
	ISSUED FOR 90% CD - PHASE C	11.1.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

COLUMN SCHEDULES

Project Number:
5274-42
Drawn By:
J.G.
Sheet:

S5.1C

KEYNOTES - ROOF PLAN

#	
30	ROOFTOP MECHANICAL EQUIPMENT. PROVIDE EQUIPMENT SCREEN MOUNTED TO EQUIPMENT. REFER TO SPECIFICATION SECTION 108213 FOR ROOFTOP EQUIPMENT SCREENING REQUIREMENTS.
36	CONT EXPANSION JOINT COVER CANT TO WALL STYLE PER SPEC SECTION 077029.
37	ALUMINUM LADDER WITH PARAPET PLATFORM.
43	STC RATED FIRE & SMOKE VENT. REFER TO SPECIFICATION SECTION 077236 FOR REQUIREMENTS
65	ROOF ACCESS HATCH.
91	PROVIDE COLD-FORMED METAL FRAMING PARAPET TO 36" ABOVE ROOF. COLD-FORMED METAL FRAMING TO BE SUPPORTED BY MISCELLANEOUS STEEL UPRIGHTS CENTERED BEAM BELOW.

LEGEND

	LINE DELINEATING NEW BUILDING AND EXISTING BUILDING
RD-N	NEW ROOF DRAIN. REFER TO PLUMBING
RD-O	NEW OVERFLOW ROOF DRAIN. REFER TO PLUMBING
RD-X	EXISTING ROOF DRAIN LOCATION. REMOVE EXISTING. PROVIDE NEW. REFER TO PLUMBING
	SLOPE DIRECTION
EF	EXHAUST FAN - SEE MECHANICAL FOR INFORMATION

RF-01	
RF-02	MEMBRANE ROOF OVER TAPERED RIGID INSULATION OVER VAPOR RETARDER/TEMPORARY ROOF OVER SUBSTRATE BOARD. REFER TO SPEC SECTION 075323.

HATCHED REGION DENOTES EXISTING ROOF AREA BEING REDIRECTED TO STORM DETENTION SYSTEM.

SKYLIGHT B.1 REFER TO SPEC SECTION 080300, TYP

SKYLIGHT B.2

2'-0" WIDE WALKWAY PADS, TYP.

SKYLIGHT B.3

SKYLIGHT C.1 REFER TO SPEC SECTION 012300 REGARDING ALTERNATES

SKYLIGHT C.2 REFER TO SPEC SECTION 012300 REGARDING ALTERNATES

SKYLIGHT C.3 REFER TO SPEC SECTION 012300 REGARDING ALTERNATES

1 OVERALL ROOF PLAN
SCALE: 1" = 20'-0"

N

DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

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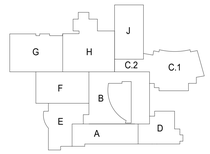


NORTH

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
34	ISSUED FOR 75% CONSTRUCTION DOCUMENTS - PHASE C	10.14.2019
	ISSUED FOR CONSTRUCTION - PHASE B	08.26.2019
31	ISSUED FOR PLAN REVIEW RESPONSE - PHASE B	08.05.2019
24	ISSUED FOR ADDENDUM 2 - BG7	06.27.2019
	ISSUED FOR PLAN REVIEW - PHASE B	06.24.2019
	ISSUED FOR BID GROUP 7 - PHASE B	06.07.2019
	ISSUED FOR 75% CONSTRUCTION DOCUMENTS	05.10.2019
	ISSUED FOR BID GROUP 6 - PHASE B	05.10.2019
	ISSUED FOR CONSTRUCTION - PHASE A	05.08.2019
8	ISSUED FOR ADDENDUM 3 - BG3	03.29.2019
	ISSUED FOR CODE CONSULTANT REVIEW	02.20.2019
	ISSUED FOR BID GROUP 2 - PHASE A	02.06.2019
	ISSUED FOR BG 1 - PHASE A	01.18.2019
	ISSUED FOR 50% CONSTRUCTION DOCUMENTS - PHASE A	11.28.2018
	ISSUED FOR SCHEMATIC DESIGN	11.05.2018
	ISSUED FOR SCHEMATIC DESIGN - PHASE A	09.19.2018

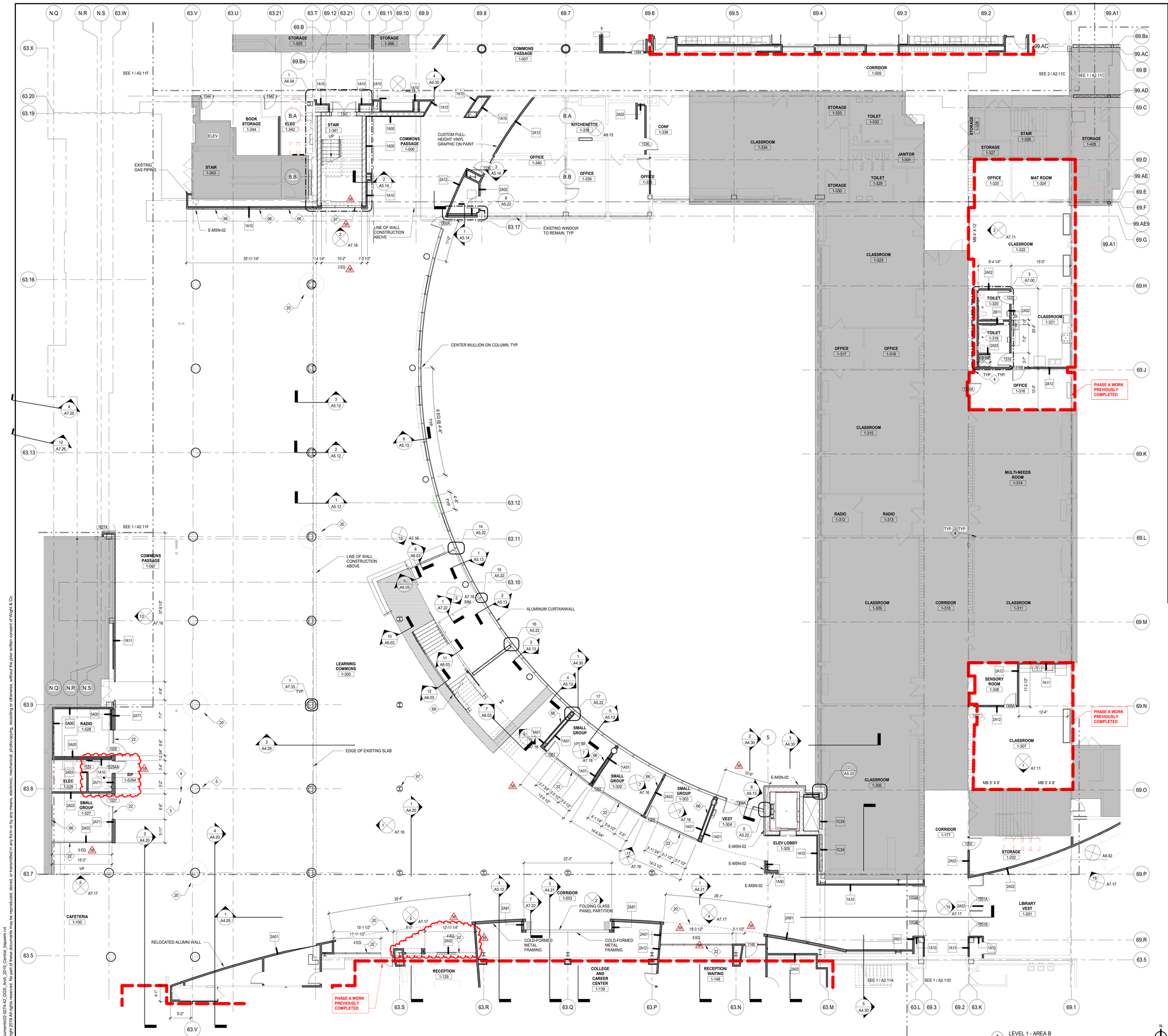
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

OVERALL ROOF PLAN

Project Number:
5274-42
Drawn By:
A.SASSILA
Sheet:

A2.04



GENERAL NOTES

1. ALL ITEMS THAT ARE TO BE REMOVED AND REINSTALLED OR SAVED ARE TO BE TAGGED AND CAREFULLY STORED (SEE OWNER FOR LOCATION).
2. ALL AREAS AFFECTED BY DEMOLITION TO BE PATCHED, REPAIRED, & LEVELED TO MATCH EXISTING ADJACENT SURFACE (MATCH EXISTING CONDITION AT DOOR JAMBS) VERIFY IN FIELD.
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8. U.N.O. CONTRACTOR TO REMOVE EXISTING FLOORING AND BASE AS REQUIRED TO ACCOMMODATE DOOR ASSEMBLIES. PATCH/REPAIR AS NECESSARY TO MATCH ADJACENT SURFACES.
9. REFER TO MEP-FP DRAWINGS FOR DEMOLITION / REMOVAL / RELOCATION AND INSTALLATION OF FIXTURES AND DEVICES.
10. SEE STRUCTURAL DEMOLITION DRAWINGS FOR SHORING AND WALL RETAINING REQUIREMENTS PRIOR TO START OF DEMOLITION.
11. UPON REMOVAL OF DOORS, SHORE OPENINGS AS REQUIRED. SECURE ALL NEW FRAMES PER MANUFACTURERS RECOMMENDATIONS. PROVIDE LINTELS AS REQUIRED. SEE STRUCTURAL DRAWINGS.
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GENERAL NOTES - WALL PLACEMENT & DIMENSIONS

1. REFER TO ENLARGED STAIRWELL PLANS & ELEVATOR PLANS FOR WALL LOCATIONS IN RELATION TO STRUCTURAL CENTERLINES.

2. ALL DIMENSIONS ARE TO FACE OF WALL MATERIAL (GYPSUM BOARD OR MASONRY) UNLESS NOTED OTHERWISE

(DIMENSION) — DIMENSION IS CRITICAL, HOLD DIMENSION FACE TO FACE OF WALL

(DIMENSION) CL — DIMENSION TO STRUCTURAL COLUMN CENTERLINE

AL — ALIGN FACES OF WALL

FLOOR PLAN LEGEND

- EXISTING WALL
- NEW GYPSUM BOARD PARTITION
- NEW CMU PARTITION
- NEW DOOR/HARDWARE. REFER TO SHEET A8 SERIES FOR DOOR SCHEDULE
- EXISTING DOOR TO REMAIN. REFER TO SHEET A8.1 FOR DOOR SCHEDULE FOR REQUIRED MODIFICATIONS.
- METAL LOCKER- 5% OF TOTAL PROVIDED QUANTITY SHALL BE ACCESSIBLE. COORDINATE ADA COMPLIANT LOCKER LOCATIONS WITH ARCHITECT/OWNER PRIOR TO INSTALLATION
- 1i — PARTITION TYPE & DETAILS. REFER TO SHEET A8.00
- 1i — ALUMINUM STOREFRONT/WINDOW TYPE. REFER TO A8.10 SERIES
- 101 — DOOR TAG. REFER TO A8.10 SERIES
- SPECIALTY EQUIPEMNT TAG

KEYNOTES

4	SUSPECTED LOCATION OF EXISTING DOWNSPOUT.
5	SUSPECTED LOCATION OF EXISTING PIPE RISERS.
20	CUSTOM ARCHITECTURAL WOODWORK. REFER TO CASEWORK PLANS AND DETAILS FOR MORE INFORMATION.
22	INTERIOR GLASS PARTITION SYSTEM. REFERENCE SPEC SECTION 081216.
66	WALL MOUNTED FLAT SCREEN MONITOR.
67	PREFINISHED ALUMINUM COLUMN COVER. REFERENCE SPEC SECTION.
69	STAIR STRUCTURE COVERED BY GYPSUM BOARD ON METAL STUD FRAMING. SEE A6.00 SERIES FOR DETAILS.
87	ALUMINUM CURTAINWALL, TYP.

DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

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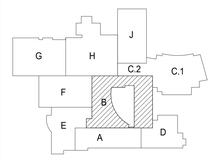


NORTH

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
34	ISSUED FOR 75% CONSTRUCTION DOCUMENTS - PHASE C	10.14.2019
	ISSUED FOR DESIGN DEVELOPMENT	07.12.2019
	ISSUED FOR CONSTRUCTION - PHASE A	05.08.2019
8	ISSUED FOR ADDENDUM 3 - BG3	03.29.2019
	ISSUED FOR CODE CONSULTANT REVIEW	02.20.2019
	ISSUED FOR BID GROUP 2 - PHASE A	02.06.2019
	ISSUED FOR OWNER REVIEW	01.18.2019
	ISSUED FOR BG 1 - PHASE A	01.18.2019
	ISSUED FOR 50% CONSTRUCTION DOCUMENTS - PHASE A	11.28.2018
	ISSUED FOR SCHEMATIC DESIGN	11.05.2018
	ISSUED FOR SCHEMATIC DESIGN - PHASE A	09.19.2018

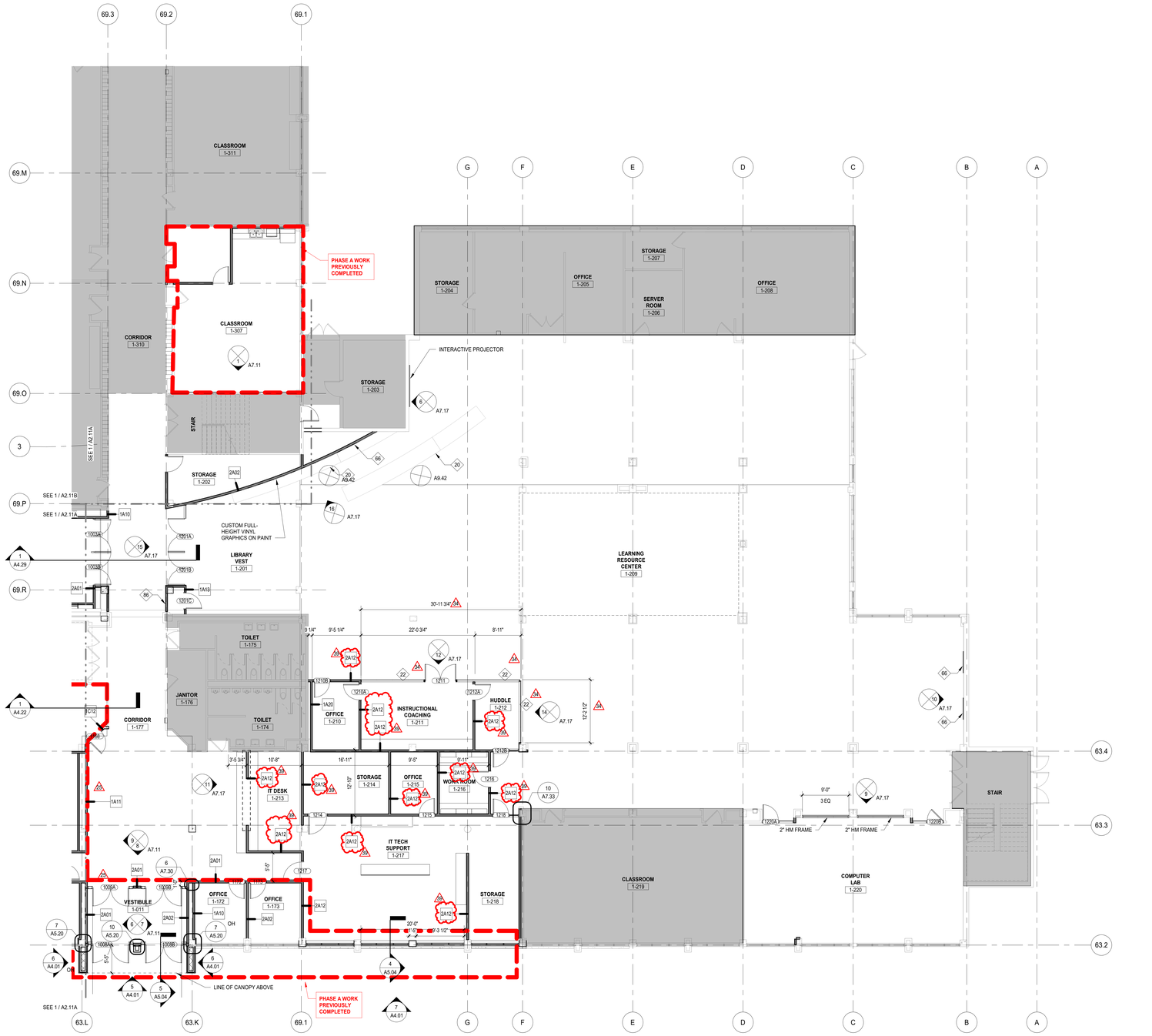
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

FLOOR PLAN LEVEL 1 AREA B

Project Number:
5274-42
Drawn By:
A.SASSILA
Sheet:

A2.11B



1 LEVEL 1 - AREA D
SCALE: 1/8" = 1'-0"

N

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GENERAL NOTES - WALL PLACEMENT & DIMENSIONS

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(DIMENSION) CL — DIMENSION TO STRUCTURAL COLUMN CENTERLINE

AL — ALIGN FACES OF WALL

FLOOR PLAN LEGEND

- EXISTING WALL
- NEW GYPSUM BOARD PARTITION
- NEW CMU PARTITION
- NEW DOOR/HARDWARE. REFER TO SHEET A8 SERIES FOR DOOR SCHEDULE
- EXISTING DOOR TO REMAIN. REFER TO SHEET A8.1 FOR DOOR SCHEDULE FOR REQUIRED MODIFICATIONS.
- METAL LOCKER- 5% OF TOTAL PROVIDED QUANTITY SHALL BE ACCESSIBLE. COORDINATE ADA COMPLIANT LOCKER LOCATIONS WITH ARCHITECT/OWNER PRIOR TO INSTALLATION
- 1\ — PARTITION TYPE & DETAILS. REFER TO SHEET A8.00
- 1\ — ALUMINUM STOREFRONT/WINDOW TYPE. REFER TO A8.10 SERIES
- 101 — DOOR TAG. REFER TO A8.10 SERIES
- SPECIALTY EQUIPEMNT TAG

KEYNOTES

#	
20	CUSTOM ARCHITECTURAL WOODWORK. REFER TO CASEWORK PLANS AND DETAILS FOR MORE INFORMATION.
22	INTERIOR GLASS PARTITION SYSTEM. REFERENCE SPEC SECTION 081216.
66	WALL MOUNTED FLAT SCREEN MONITOR.
86	IN-WALL BOOK DROP DOOR.

COMMUNITY HIGH SCHOOL DISTRICT 99

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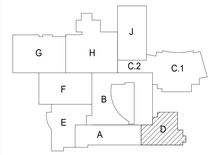

NORTH

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
34	ISSUED FOR 75% CONSTRUCTION DOCUMENTS - PHASE C	10.14.2019
	ISSUED FOR DESIGN DEVELOPMENT	07.12.2019
25	ISSUED FOR DOC MOD 012	06.28.2019
	ISSUED FOR CONSTRUCTION - PHASE A	05.08.2019
8	ISSUED FOR ADDENDUM 3 - BG3	03.29.2019
	ISSUED FOR CODE CONSULTANT REVIEW	02.20.2019
	ISSUED FOR BID GROUP 2 - PHASE A	02.06.2019
	ISSUED FOR OWNER REVIEW	01.18.2019
	ISSUED FOR BG 1 - PHASE A	01.18.2019
	ISSUED FOR 50% CONSTRUCTION DOCUMENTS - PHASE A	11.28.2018
	ISSUED FOR SCHEMATIC DESIGN	11.05.2018

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

FLOOR PLAN LEVEL 1 AREA D

Project Number:
5274-42
Drawn By:
A.SASSILA
Sheet:

A2.11D

KEYNOTES

#	
58	HORIZONTAL FLUSH CAP PASS THROUGH. SEE DETAIL 12/A7.28
59	HORIZONTAL COMPRESSION CAP PASS THROUGH. SEE DETAIL 8/A7.28
60	8" VERTICAL CABLE PASS IN FLOOR.
67	PREFINISHED ALUMINUM COLUMN COVER. REFERENCE SPEC SECTION.
70	INFILL OPENING TO MATCH EXISTING FINISHES AT INTERIOR SIDE
72	ACOUSTICAL PANELS ON ALL WALLS OF VESTIBULE
73	WALL HUNG MOP HOOKS AND UTILITY SHELF (4 HOOKS)
75	CONCRETE RAMP. SEE FINISH PLANS FOR FLOOR FINISHES
76	GYPSUM BOARD GUARDRAIL WITH SOLID SURFACE CAP
79	COLD-FORMED METAL FRAMING SUPPORTING THEATER SEATING PLATFORMS, TYP. REFER TO STRUCTURAL DRAWINGS FOR MORE INFORMATION
83	FLUSHED RECESSED PULL BOX WITH COVER FOR 12" DIA. AV PIPE
90	COLD-FORMED METAL FRAMING
93	REFERENCE SHEET A10.00 FOR FLUSH TRANSITION DETAIL & ASSOCIATED MISC. METALS

FLOOR PLAN LEGEND

- EXISTING WALL
- NEW GYPSUM BOARD PARTITION
- NEW CMU PARTITION
- NEW DOOR/HARDWARE. REFER TO SHEET A8 SERIES FOR DOOR SCHEDULE
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- SPECIALTY EQUIPEMNT TAG

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WORK SCOPE LEGEND

- INCIDENTAL WORK AREA
- WORK AREA

GENERAL NOTES

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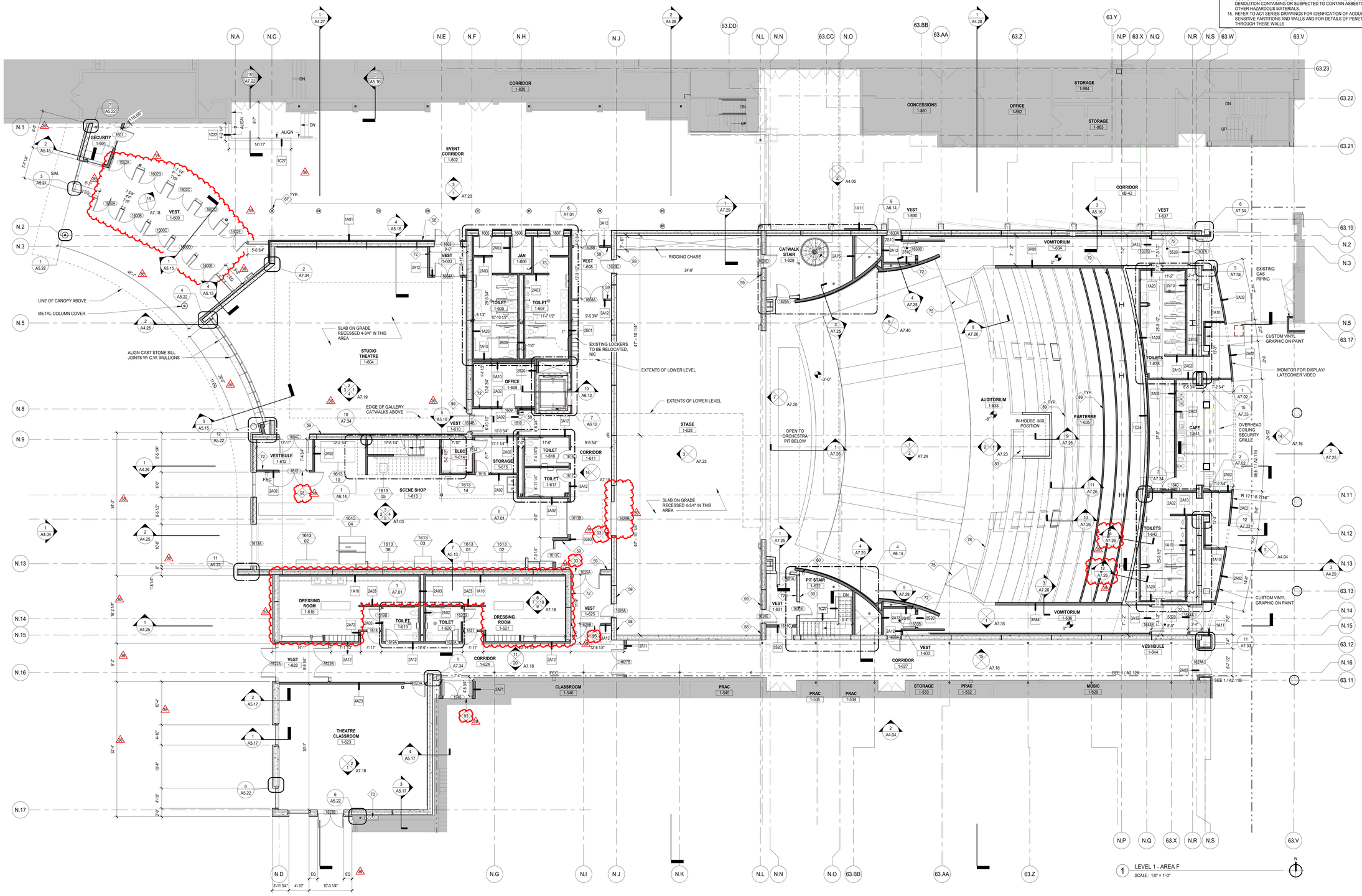

1 LEVEL 1 - AREA F
SCALE: 1/8" = 1'-0"

N

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
34	ISSUED FOR 75% CONSTRUCTION DOCUMENTS - PHASE C	10.14.2019
	ISSUED FOR DESIGN DEVELOPMENT	07.12.2019
8	ISSUED FOR ADDENDUM 3 - BG3	03.29.2019
	ISSUED FOR CODE CONSULTANT REVIEW	02.20.2019
	ISSUED FOR SCHEMATIC DESIGN	11.05.2018

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

FLOOR PLAN LEVEL 1 AREA F

Project Number: 5274-42
Drawn By: A.SASSILA
Sheet:

A2.11F

DISTRICT 99
COMMUNITY HIGH SCHOOL DISTRICT 99

Wight
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F 630.969.7979

KEYNOTES

#	
37	ALUMINUM LADDER WITH PARAPET PLATFORM.
59	HORIZONTAL COMPRESSION CAP PASS THROUGH. SEE DETAIL 8/A7.28
70	INFILL OPENING TO MATCH EXISTING FINISHES AT INTERIOR SIDE
71	STC RATED OPERABLE CONTROL ROOM WINDOW. REFER TO SPECIFICATION SECTION 085673
77	CAST IN PLACE FORMED CONCRETE STEPS
88	PTD STEEL HANDRAIL, TYP.
90	CONTROL ROOM WINDOW RAILING MUST MAINTAIN MINIMAL VISUAL OBSTRUCTION

FLOOR PLAN LEGEND

- EXISTING WALL
- NEW GYPSUM BOARD PARTITION
- NEW CMU PARTITION
- NEW DOOR/HARDWARE. REFER TO SHEET A8 SERIES FOR DOOR SCHEDULE
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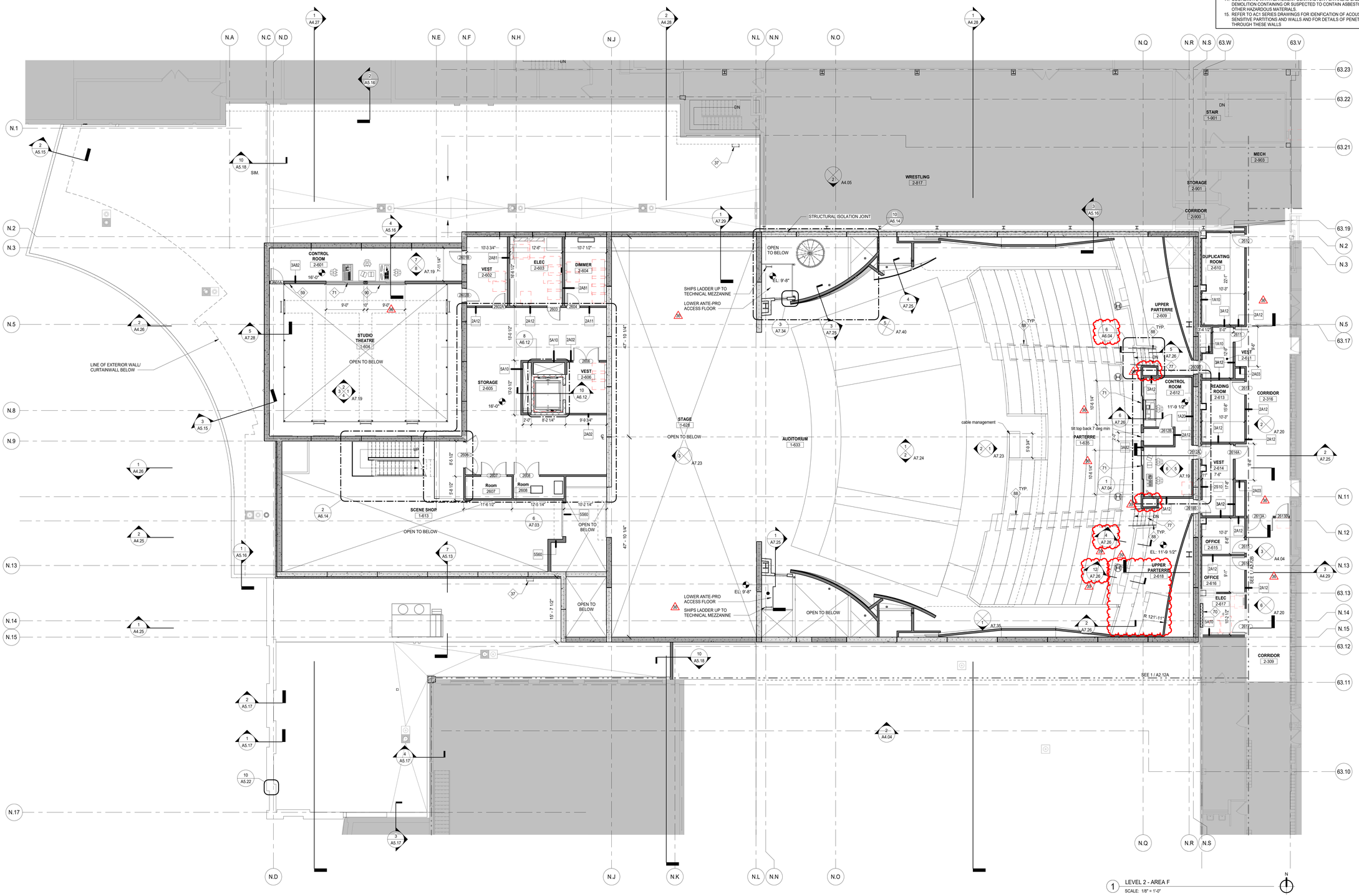
1. ALL ITEMS THAT ARE TO BE REMOVED AND REINSTALLED OR SAVED ARE TO BE TAGGED AND CAREFULLY STORED (SEE OWNER FOR LOCATION).
2. ALL AREAS AFFECTED BY DEMOLITION TO BE PATCHED, REPAIRED, & LEVELED TO MATCH EXISTING ADJACENT SURFACE (MATCH EXISTING CONDITION AT DOOR JAMBS) VERIFY IN FIELD.
3. THE CONSTRUCTION DOCUMENTS INDICATE THE OVERALL AREAS OF WORK. INCIDENTAL WORK ASSOCIATED BUT NOT SHOWN ON THE CONSTRUCTION DOCUMENTS MAY BE REQUIRED OUTSIDE THE PROJECT AREAS. THIS WORK IS PART OF THE CONSTRUCTION CONTRACT AND IS TO BE COMPLETED IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS AT NO ADDITIONAL COST TO THE OWNER.
4. ALL ITEMS INDICATED TO REMAIN ARE TO BE PROTECTED FROM DAMAGE. DAMAGED ITEMS ARE TO BE PATCHED & REPAIRED OR REPLACED AS REQUIRED TO MATCH ADJACENT SURFACE, AT NO ADDITIONAL COST TO THE OWNER.
5. WHEN THE REMOVAL OF EXISTING SURFACE MATERIAL IS REQUIRED TO COMPLETE CONTRACT WORK AND A NEW FINISH IS NOT SCHEDULED, PATCH/REPAIR AND PRIME THE AFFECTED SURFACE TO RECEIVE NEW FINISH.
6. NEW SLEEVES AND OPENINGS IN THE EXISTING FLOOR, WALL & CEILING CONSTRUCTION ARE TO BE SEALED WITH FIRE SAFETY MATERIAL.
7. ALL MISC. ITEMS (CHALKBOARDS, PENCIL SHARPENERS, ETC.) THAT INTERFERE WITH THE COMPLETION OF CONTRACT WORK BUT ARE NOT SHOWN TO BE REMOVED ARE TO BE REMOVED, STORED, AND REINSTALLED, AT NO ADDITIONAL COST TO THE OWNER. IN THE EVENT THAT ITEMS CANNOT BE REINSTALLED IN ITS ORIGINAL LOCATION COORDINATE NEW LOCATION WITH ARCHITECT/OWNER.
8. U.N.O. CONTRACTOR TO REMOVE EXISTING FLOORING AND BASE AS REQUIRED TO ACCOMMODATE DOOR ASSEMBLIES. PATCH/REPAIR AS NECESSARY TO MATCH ADJACENT SURFACES.
9. REFER TO MEP-FP DRAWINGS FOR DEMOLITION / REMOVAL / RELOCATION AND INSTALLATION OF FIXTURES AND DEVICES.
10. SEE STRUCTURAL DEMOLITION DRAWINGS FOR SHORING AND WALL RETAINING REQUIREMENTS PRIOR TO START OF DEMOLITION.
11. UPON REMOVAL OF DOORS, SHORE OPENINGS AS REQUIRED. SECURE ALL NEW FRAMES PER MANUFACTURERS RECOMMENDATIONS. PROVIDE LINTELS AS REQUIRED. SEE STRUCTURAL DRAWINGS.
12. ON DOORS THAT ARE TO BE REMOVED RETURN ALL DOOR HARDWARE TO OWNER PRIOR TO DISPOSAL.
13. ALL ELECTRICAL DEVICES & ASSEMBLIES BEING AFFECTED BY DEMO OF DOORS TO BE REINSTALLED AND RECONNECTED AT NO ADDITIONAL COST TO THE OWNER.
14. COORDINATE WITH ABATEMENT CONTRACTOR FOR AREAS CALLED FOR DEMOLITION CONTAINING OR SUSPECTED TO CONTAIN ASBESTOS AND OR OTHER HAZARDOUS MATERIALS.
15. REFER TO AC1 SERIES DRAWINGS FOR IDENFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS



1 LEVEL 2 - AREA F
SCALE: 1/8" = 1'-0"

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
34	ISSUED FOR 75% CONSTRUCTION DOCUMENTS - PHASE C	10.14.2019
	ISSUED FOR DESIGN DEVELOPMENT	07.12.2019
	ISSUED FOR CODE CONSULTANT REVIEW	02.20.2019
	ISSUED FOR SCHEMATIC DESIGN	11.05.2018

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

FLOOR PLAN LEVEL 2 AREA F

Project Number: 5274-42
Drawn By: A.SASSILA
Sheet: **A2.12F**

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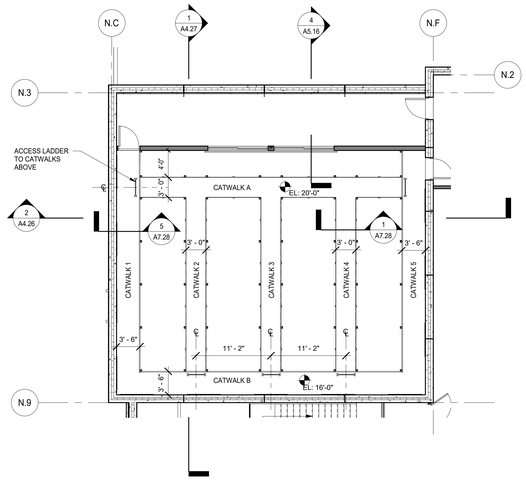
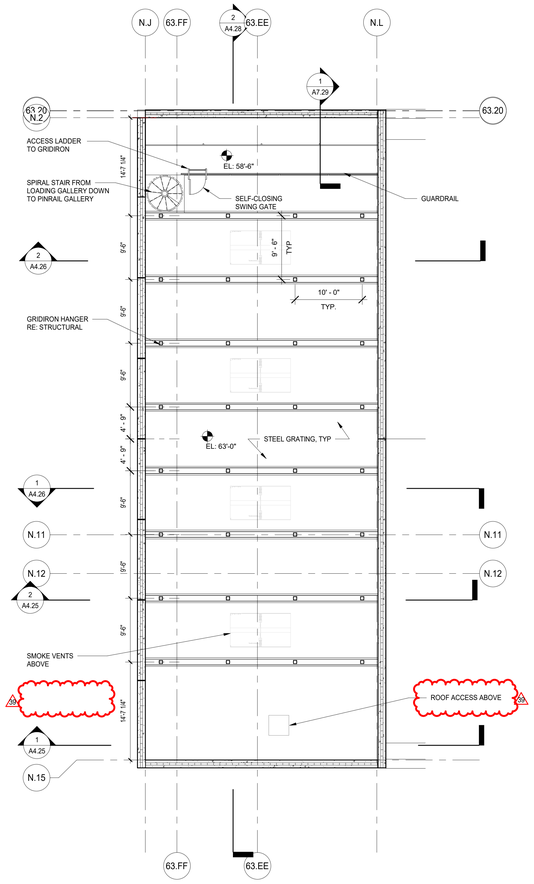
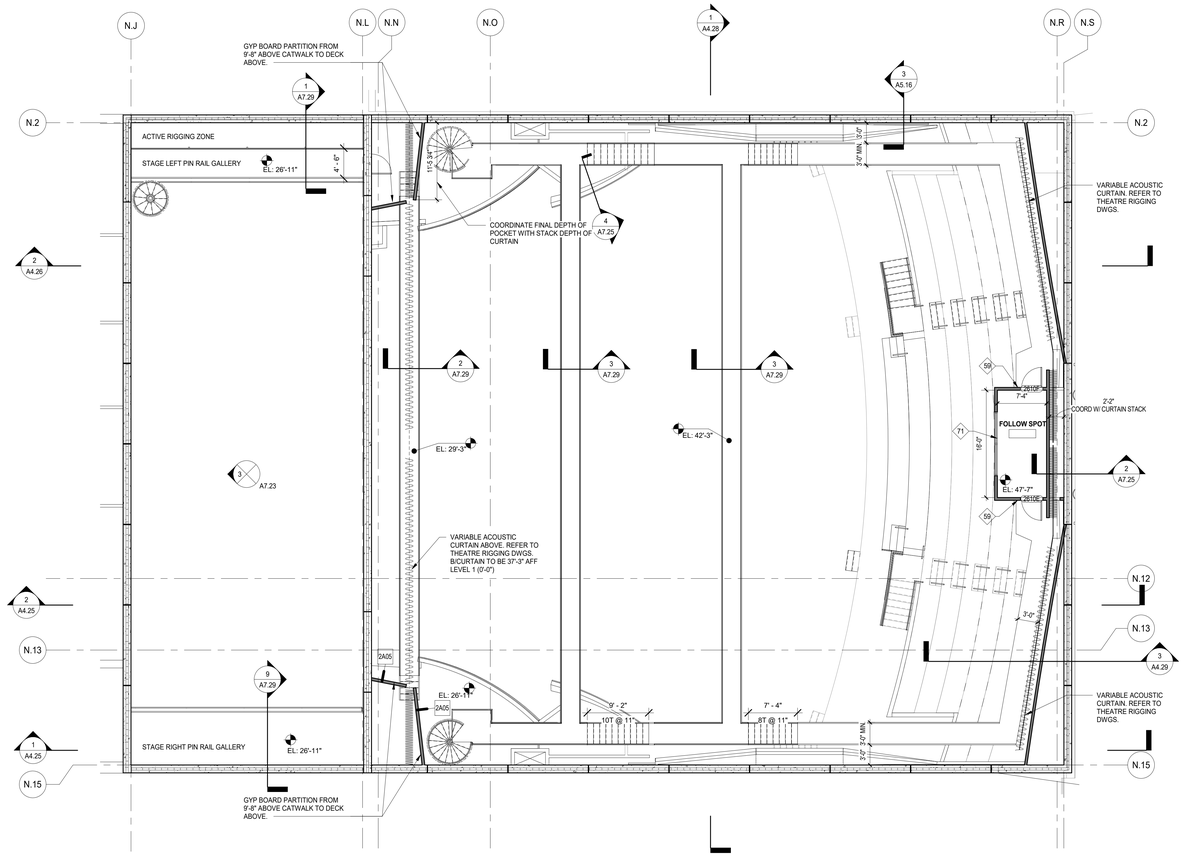


3 STUDIO THEATRE CATWALK
SCALE: 1/8" = 1'-0"



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



2 AUDITORIUM CATWALK
SCALE: 1/8" = 1'-0"

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
34	ISSUED FOR 75% CONSTRUCTION DOCUMENTS - PHASE C	10.14.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

FLOOR PLAN - CATWALKS

Project Number: 5274-42
Drawn By: Author
Sheet: **A2.15F**

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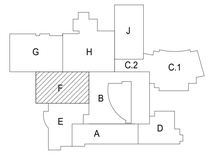


SYMBOL	MANUFACTURER	MATERIAL	DESCRIPTION
ACT-1	ARMSTRONG	2X2 ACOUSTICAL CEILING SYSTEM	
ACT-2	ARMSTRONG	2X4 ACOUSTICAL CEILING SYSTEM	
ACT-3	ARMSTRONG	2X2 FOOD SERVICE	
E-WP-2	SEE EXTERIOR FINISH LEGEND	SEE EXTERIOR FINISH LEGEND	
GYP-1	AMERICAN GYPSUM	GYPSUM BOARD CEILING	
GYP-3	AMERICAN GYPSUM	GYPSUM BOARD CEILING	1 HR
GYP-4	AMERICAN GYPSUM	GYPSUM BOARD CEILING	ACOUSTICAL BARRIER CEILING
GYP-6	AMERICAN GYPSUM	ACOUSTICAL GYPSUM BOARD CEILING	ACOUSTICAL PERFORATED GYPSUM BOARD
MTL-1	TBD	FLUSH REVEAL METAL PANEL	SOFFIT
WD-1			

KEY NOTES

10'-0" ACT-1 — CEILING HEIGHT / CEILING FINISH

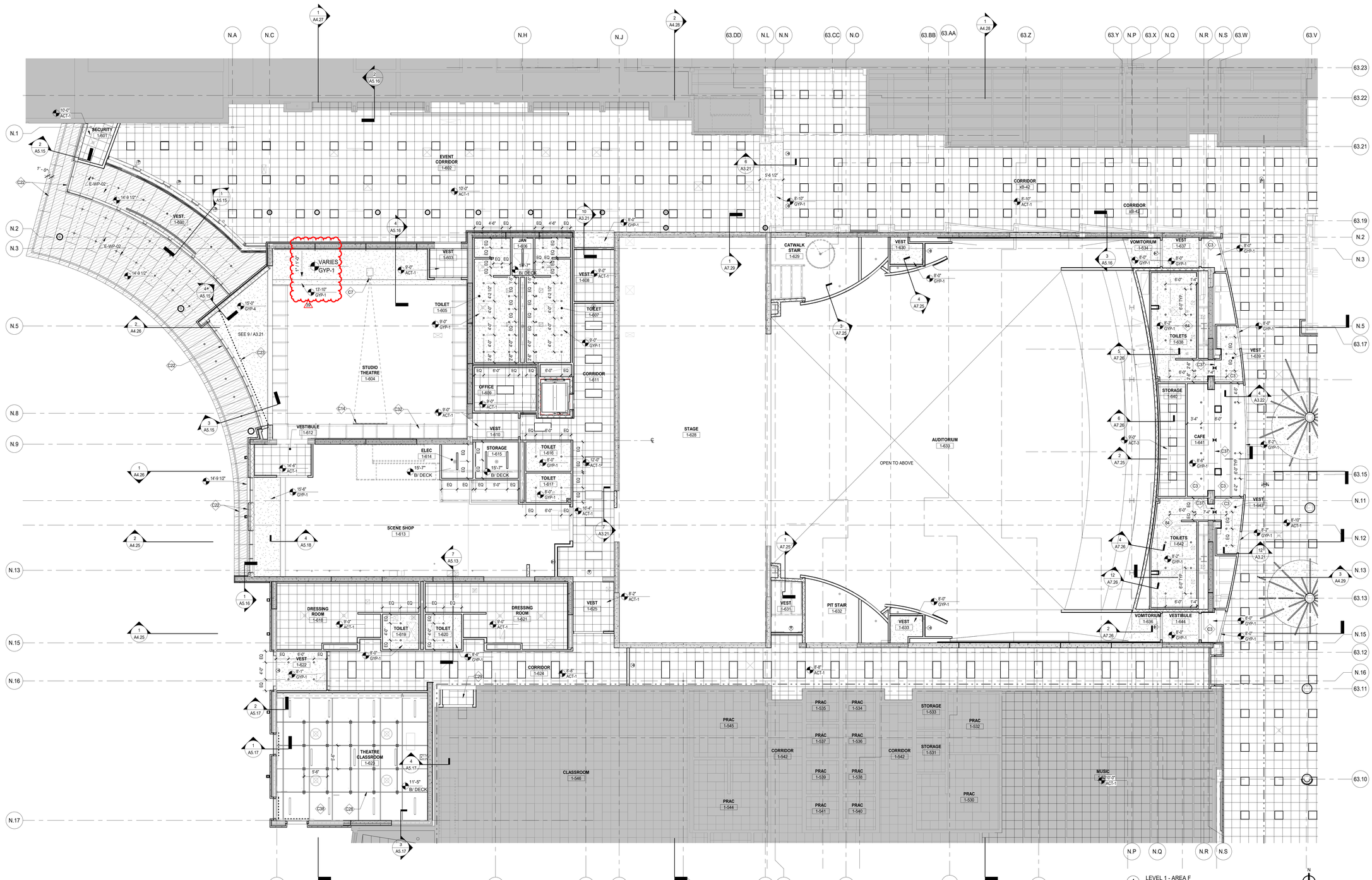
84	PROVIDE ACOUSTICAL BATT INSULATION ABOVE SUSPENDED CEILING.
C3	PAINT GYPSUM BOARD CEILING PT-2.
C7	SUSPENDED PROJECTOR.
C14	SUSPENDED PROJECTION SCREEN.
C22	CONTINUOUS SOFFIT VENT
C23	MOTORIZED BLACK-OUT ROLLER SHADE SUSPENDED FROM BEAM PLATE AND INSTALLED BY RIGGING CONTRACTOR
C28	SUSPENDED PIPE GRID SYSTEM W/ CROSS CONNECTORS. PAINT UPT-3
C29	MODIFY EXISTING CEILING GRID TO ACCEPT NEW PARTITION WALLS
C32	PAINTED UNDERSIDE OF CATWALK/STAIRS, PAINT PT-3
C37	CEILING EXPANSION JOINT COVER CJ-1
C38	PAINT EXPOSED CEILING PT-3

REFLECTED CEILING PLAN SYMBOL LEGEND

- LINEAR LIGHT FIXTURE
- PENDANT LIGHT FIXTURE
- 2X4 RECESSED LIGHT FIXTURE
- RECESSED CAN LIGHT FIXTURE
- PENDANT LIGHT FIXTURE
- WALL SCONCE
- EXISTING 2X4 RECESSED LIGHT FIXTURE
- EXISTING RECESSED LIGHT FIXTURE
- ROLLER SHADES
- 2' x 4' ACOUSTICAL CEILING SYSTEM
- 2' x 2' ACOUSTICAL CEILING SYSTEM
- GYPSUM BOARD CEILING
- CJ — CONTROL JOINT ON GYPSUM CEILING

GENERAL NOTES

1. TYPICAL CEILINGS SHALL BE +9'-6"AFF UNLESS NOTED OTHERWISE.
2. ALL LIGHT FIXTURES CENTERED IN ROOM UNLESS NOTED OTHERWISE.
3. CENTER ALL CEILING MOUNTED DEVICES WITHIN 2X2 OR 2X4 SECTION OF SCORED 2X4 CEILING TILE,TYP.
4. PAINT EXPOSED UNDERSIDE OF ROOF DESK/FLOOR STRUCTURE, EXPOSED STRUCTURAL STEEL, BEAMS, EXPOSED UTILITY PIPING AND ALL OTHER "PAINTABLE" SURFACES - SEE SPECIFICATIONS FOR FURTHER CLARIFICATION.
5. REMOVE ALL CEILING DEVICES SUCH AS BUT NOT LIMITED TO: LIGHT FIXTURES, EXIT SIGNS, EMERGENCY DEVICES, EMERGENCY LIGHTS, AND ANY OTHER SUPPORT SYSTEMS THAT CONFLICT WITH NEW WORK.
6. AREAS NOTED AS INCIDENTAL WORK AREAS MAY INCLUDE ABOVE CEILING WORK FOR MEP/FP RELATED UPGRADES. REFER TO ASSOCIATED DISCIPLINE-SPECIFIC DRAWINGS FOR MORE INFORMATION AND SCOPE.



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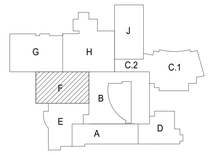


NORTH

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
34	ISSUED FOR 75% CONSTRUCTION DOCUMENTS - PHASE C	10.14.2019
	ISSUED FOR DESIGN DEVELOPMENT	07.12.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

REFLECTED CEILING PLAN LEVEL 1 - AREA F

Project Number:
5274-42
Drawn By:
B.SPOEHR
Sheet:

A3.11F

SYMBOL	MANUFACTURER	MATERIAL	DESCRIPTION
ACT-1	ARMSTRONG	2X2 ACOUSTICAL CEILING SYSTEM	
ACT-2	ARMSTRONG	2X4 ACOUSTICAL CEILING SYSTEM	
ACT-3	ARMSTRONG	2X2 FOOD SERVICE	
E-WP-2	SEE EXTERIOR FINISH LEGEND	SEE EXTERIOR FINISH LEGEND	
GYP-1	AMERICAN GYPSUM	GYPSUM BOARD CEILING	
GYP-3	AMERICAN GYPSUM	GYPSUM BOARD CEILING	1 HR
GYP-4	AMERICAN GYPSUM	GYPSUM BOARD CEILING	ACOUSTICAL BARRIER CEILING
GYP-6	AMERICAN GYPSUM	ACOUSTICAL GYPSUM BOARD CEILING	ACOUSTICAL PERFORATED GYPSUM BOARD
MTL-1	TBD	FLUSH REVEAL METAL PANEL	SOFFIT
WD-1			

KEY NOTES

10'-0" — CEILING HEIGHT
ACT-1 — CEILING FINISH

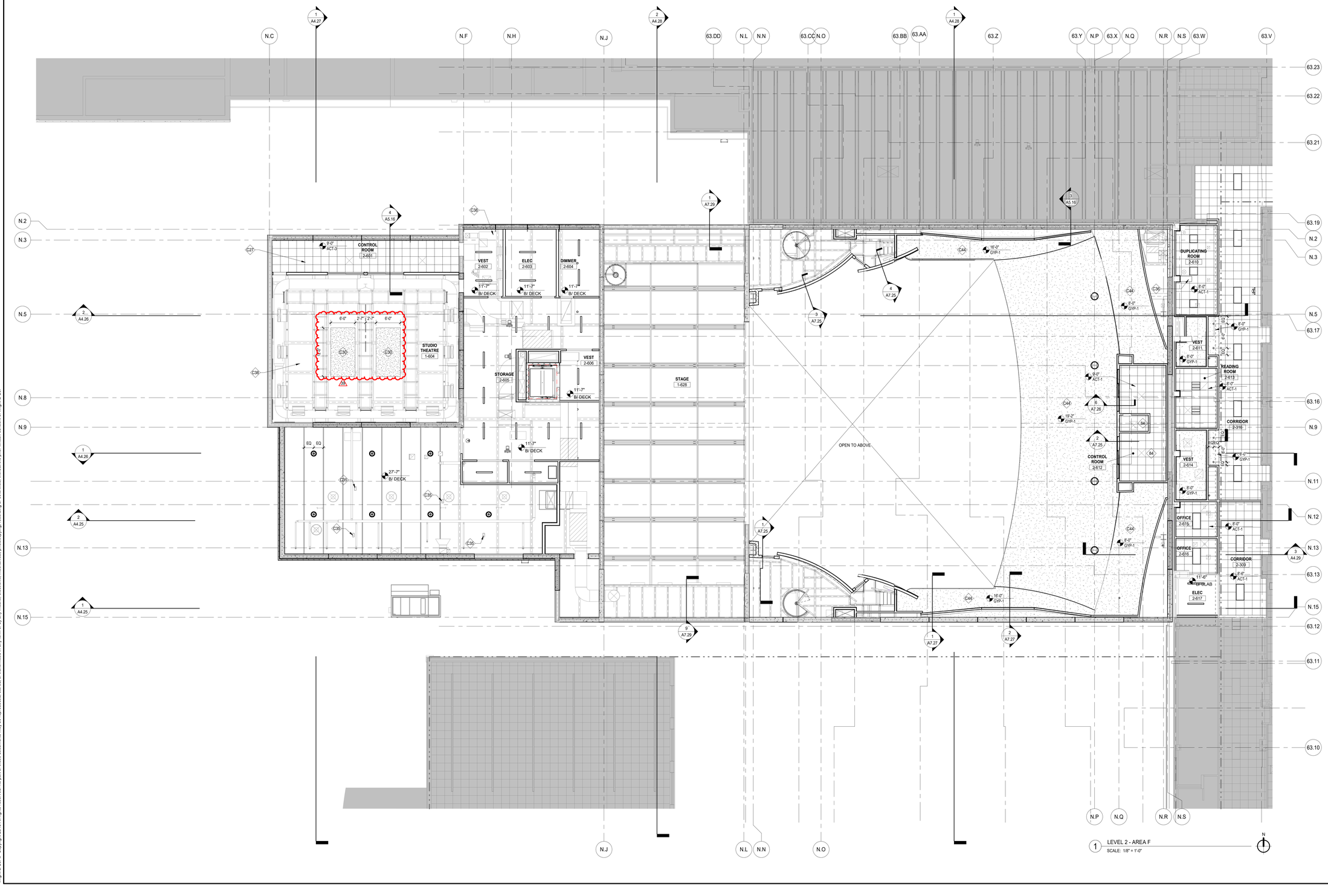
84	PROVIDE ACOUSTICAL BATT INSULATION ABOVE SUSPENDED CEILING.
C27	TRACK LIGHTING
C30	SUSPENDED PAINTED GYP. BD. REFLECTOR CLOUD
C35	OPEN CEILING OVERHEAD RETRACABLE POWER REEL - REFER TO ELECTICAL
C36	EXISTING SLOPED CONCRETE BEAM, PAINT PT-1
C38	PAINT EXPOSED CEILING PT-3
C44	PAINT GYPSUM BOARD CEILING PT-4.

REFLECTED CEILING PLAN SYMBOL LEGEND

- LINEAR LIGHT FIXTURE
- PENDANT LIGHT FIXTURE
- 2X4 RECESSED LIGHT FIXTURE
- RECESSED CAN LIGHT FIXTURE
- PENDANT LIGHT FIXTURE
- WALL SCONCE
- EXISTING 2X4 RECESSED LIGHT FIXTURE
- EXISTING RECESSED LIGHT FIXTURE
- ROLLER SHADES
- 2' x 4' ACOUSTICAL CEILING SYSTEM
- 2' x 2' ACOUSTICAL CEILING SYSTEM
- GYPSUM BOARD CEILING
- CJ — CONTROL JOINT ON GYPSUM CEILING

GENERAL NOTES

1. TYPICAL CEILINGS SHALL BE +9'-6"AFF UNLESS NOTED OTHERWISE.
2. ALL LIGHT FIXTURES CENTERED IN ROOM UNLESS NOTED OTHERWISE.
3. CENTER ALL CEILING MOUNTED DEVICES WITHIN 2X2 OR 2X4 SECTION OF SCORED 2X4 CEILING TILE,TYP.
4. PAINT EXPOSED UNDERSIDE OF ROOF DESK/FLOOR STRUCTURE, EXPOSED STRUCTURAL STEEL, BEAMS, EXPOSED UTILITY PIPING AND ALL OTHER "PAINTABLE" SURFACES - SEE SPECIFICATIONS FOR FURTHER CLARIFICATION.
5. REMOVE ALL CEILING DEVICES SUCH AS BUT NOT LIMITED TO: LIGHT FIXTURES, EXIT SIGNS, EMERGENCY DEVICES, EMERGENCY LIGHTS, AND ANY OTHER SUPPORT SYSTEMS THAT CONFLICT WITH NEW WORK.
6. AREAS NOTED AS INCIDENTAL WORK AREAS MAY INCLUDE ABOVE CEILING WORK FOR MEP/FP RELATED UPGRADES. REFER TO ASSOCIATED DISCIPLINE-SPECIFIC DRAWINGS FOR MORE INFORMATION AND SCOPE.



1 LEVEL 2 - AREA F
SCALE: 1/8" = 1'-0"

N

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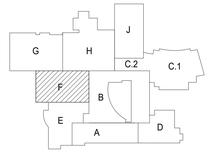


NORTH

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR DESIGN DEVELOPMENT	07.12.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

REFLECTED CEILING PLAN LEVEL 2 - AREA F

Project Number:
5274-42
Drawn By:
B.SPOEHR
Sheet:

A3.12F

SYMBOL	MANUFACTURER	MATERIAL	DESCRIPTION
ACT-1	ARMSTRONG	2X2 ACOUSTICAL CEILING SYSTEM	
ACT-2	ARMSTRONG	2X4 ACOUSTICAL CEILING SYSTEM	
ACT-3	ARMSTRONG	2X2 FOOD SERVICE	
E-WP-2	SEE EXTERIOR FINISH LEGEND	SEE EXTERIOR FINISH LEGEND	
GYP-1	AMERICAN GYPSUM	GYPSUM BOARD CEILING	
GYP-3	AMERICAN GYPSUM	GYPSUM BOARD CEILING	1 HR
GYP-4	AMERICAN GYPSUM	GYPSUM BOARD CEILING	ACOUSTICAL BARRIER CEILING
GYP-6	AMERICAN GYPSUM	ACOUSTICAL GYPSUM BOARD CEILING	ACOUSTICAL PERFORATED GYPSUM BOARD
MTL-1	TBD	FLUSH REVEAL METAL PANEL	SOFFIT
WD-1			

KEY NOTES

10'-0" — CEILING HEIGHT
ACT-1 — CEILING FINISH

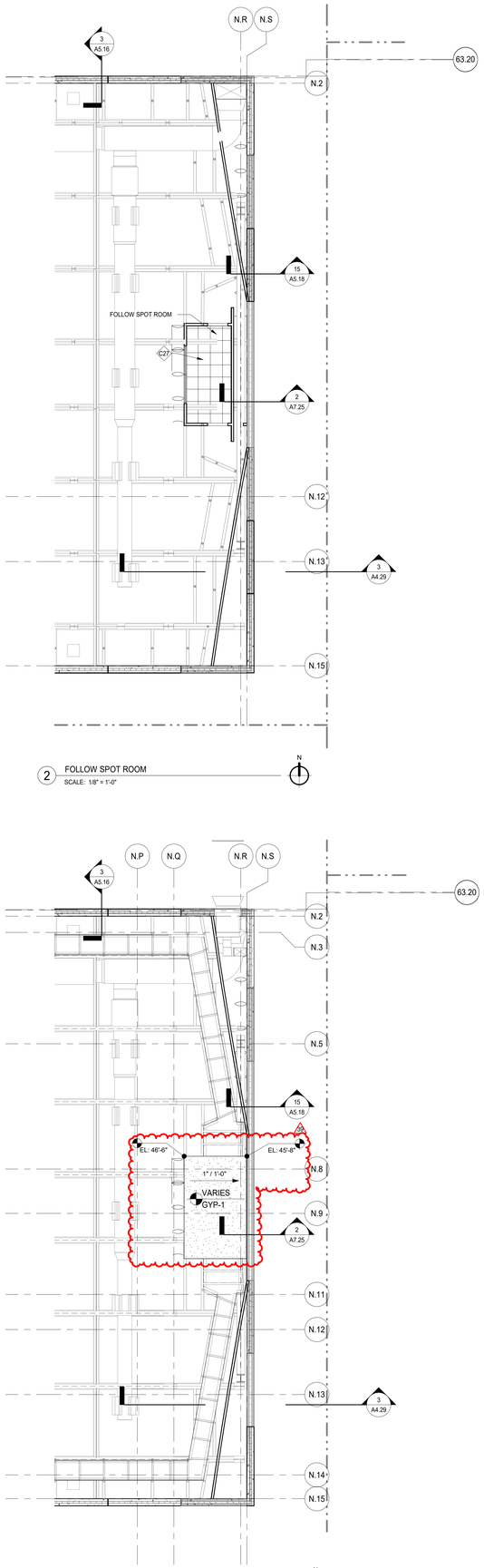
C1	PAINT GYPSUM BOARD CEILING PT-11.
C27	TRACK LIGHTING
C30	SUSPENDED PAINTED GYP. BD. REFLECTOR CLOUD
C38	PAINT EXPOSED CEILING PT-3

REFLECTED CEILING PLAN SYMBOL LEGEND

- LINEAR LIGHT FIXTURE
- PENDANT LIGHT FIXTURE
- 2X4 RECESSED LIGHT FIXTURE
- RECESSED CAN LIGHT FIXTURE
- PENDANT LIGHT FIXTURE
- WALL SCONCE
- EXISTING 2X4 RECESSED LIGHT FIXTURE
- EXISTING RECESSED LIGHT FIXTURE
- ROLLER SHADES
- 2' x 4' ACOUSTICAL CEILING SYSTEM
- 2' x 2' ACOUSTICAL CEILING SYSTEM
- GYPSUM BOARD CEILING
- CJ — CONTROL JOINT ON GYPSUM CEILING

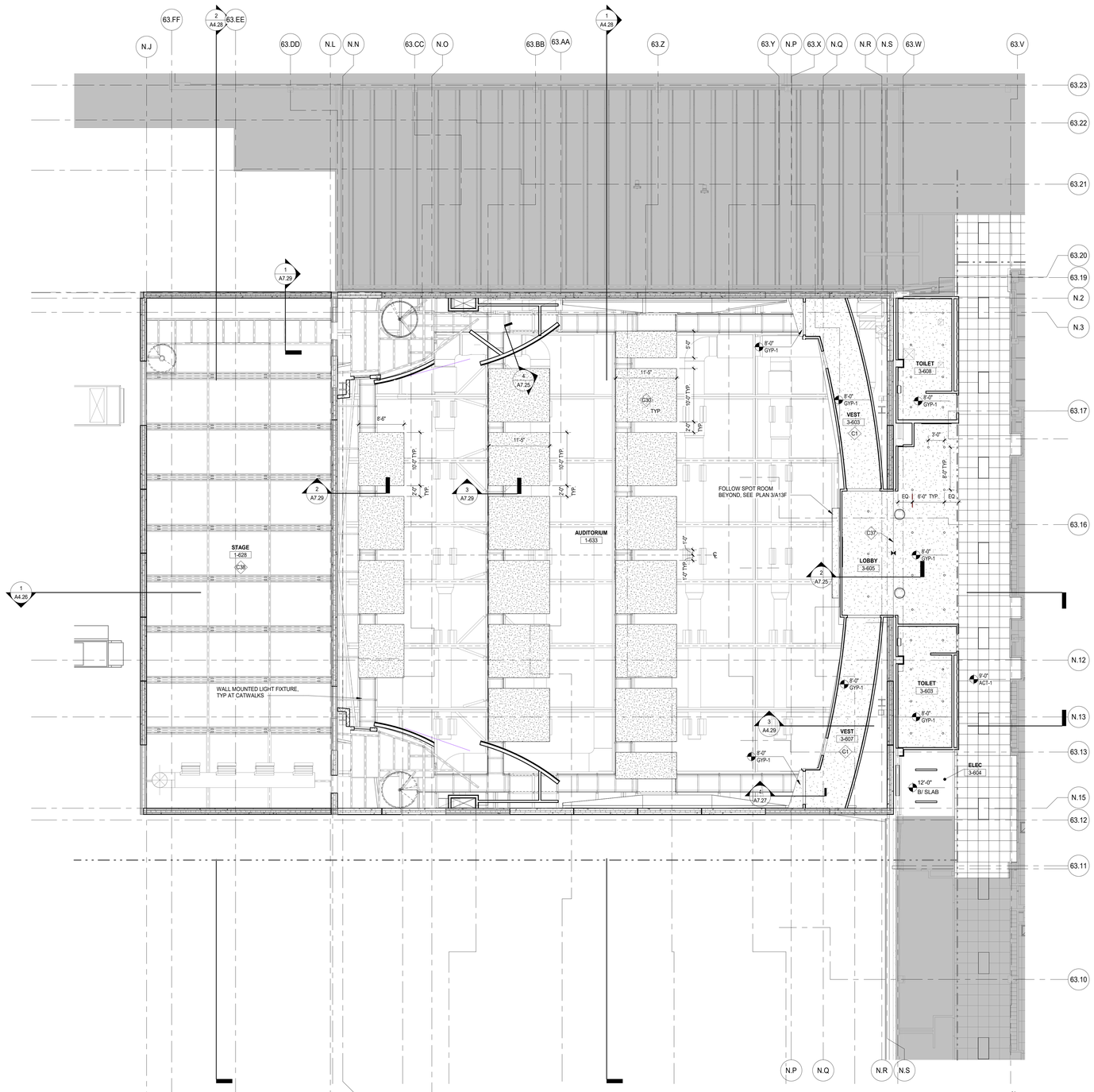
GENERAL NOTES

1. TYPICAL CEILINGS SHALL BE +9'-6"AFF UNLESS NOTED OTHERWISE.
2. ALL LIGHT FIXTURES CENTERED IN ROOM UNLESS NOTED OTHERWISE.
3. CENTER ALL CEILING MOUNTED DEVICES WITHIN 2X2 OR 2X4 SECTION OF SCORED 2X4 CEILING TILE,TYP.
4. PAINT EXPOSED UNDERSIDE OF ROOF DESK/FLOOR STRUCTURE, EXPOSED STRUCTURAL STEEL, BEAMS, EXPOSED UTILITY PIPING AND ALL OTHER "PAINTABLE" SURFACES - SEE SPECIFICATIONS FOR FURTHER CLARIFICATION.
5. REMOVE ALL CEILING DEVICES SUCH AS BUT NOT LIMITED TO: LIGHT FIXTURES, EXIT SIGNS, EMERGENCY DEVICES, EMERGENCY LIGHTS, AND ANY OTHER SUPPORT SYSTEMS THAT CONFLICT WITH NEW WORK.
6. AREAS NOTED AS INCIDENTAL WORK AREAS MAY INCLUDE ABOVE CEILING WORK FOR MEP/FP RELATED UPGRADES. REFER TO ASSOCIATED DISCIPLINE-SPECIFIC DRAWINGS FOR MORE INFORMATION AND SCOPE.



2 FOLLOW SPOT ROOM
SCALE: 1/8" = 1'-0"

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



1 LEVEL 3 - AREA F
SCALE: 1/8" = 1'-0"

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
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MFP IMPLEMENTATION - SOUTH

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REFLECTED CEILING PLAN LEVEL 3 - AREA F

Project Number: 5274-42
Drawn By: Author
Sheet: **A3.13F**

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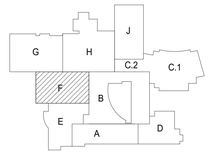
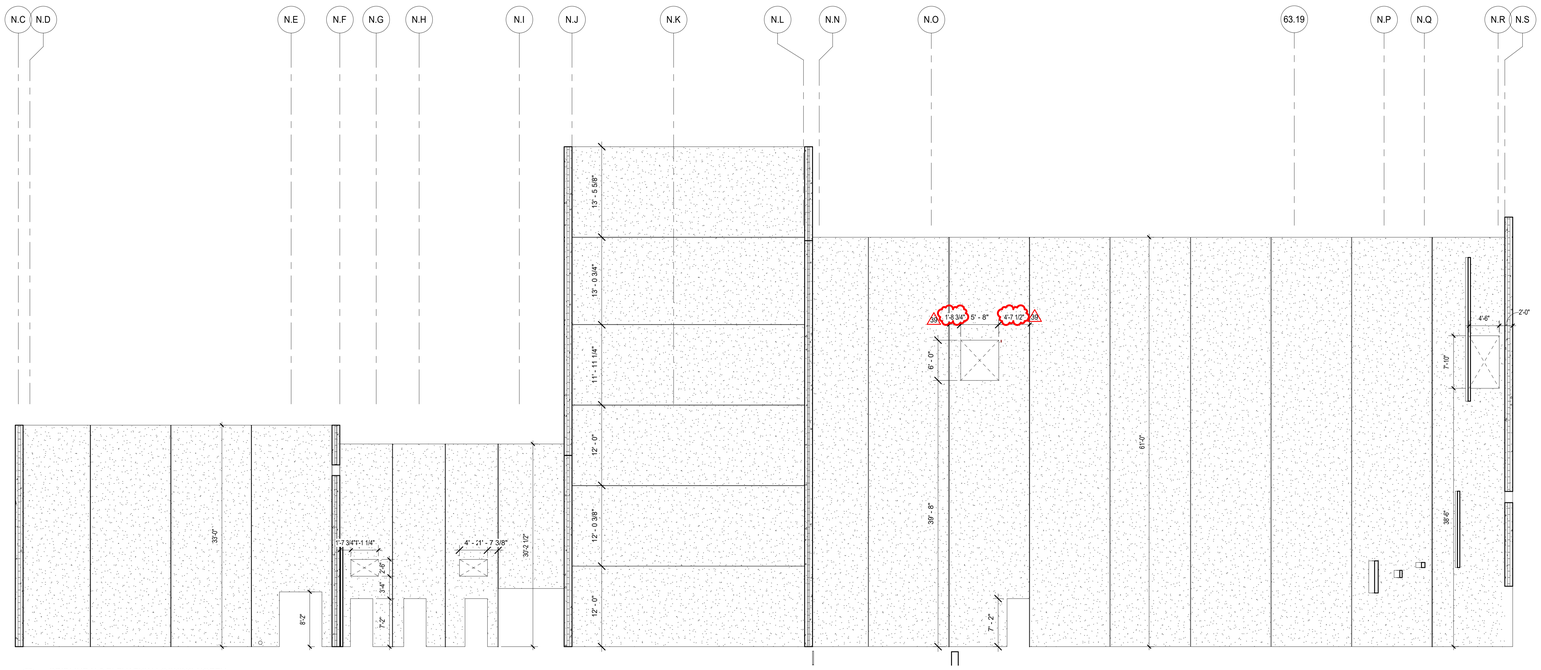
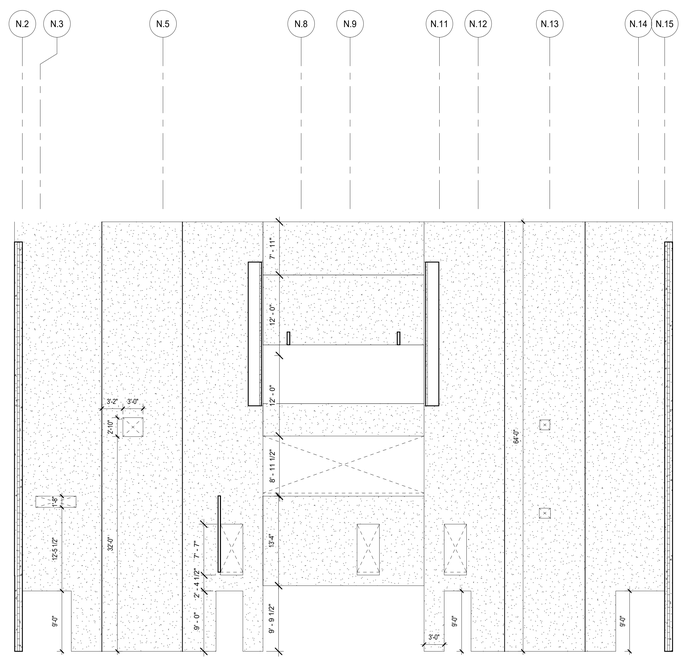


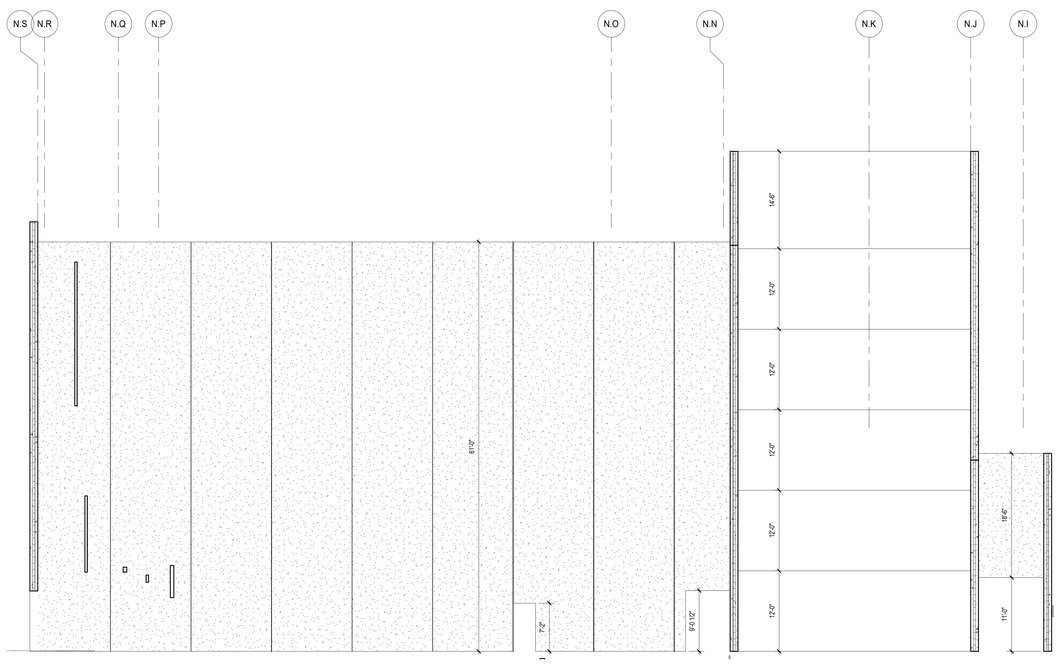
NORTH



3 GRIDLINE N.2 ELEVATION LOOKING NORTH
SCALE: 1/8" = 1'-0"



2 GRIDLINE N.S ELEVATION LOOKING EAST
SCALE: 1/8" = 1'-0"



1 GRIDLINE N.15 ELEVATION LOOKING SOUTH
SCALE: 1/8" = 1'-0"

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NOT FOR CONSTRUCTION

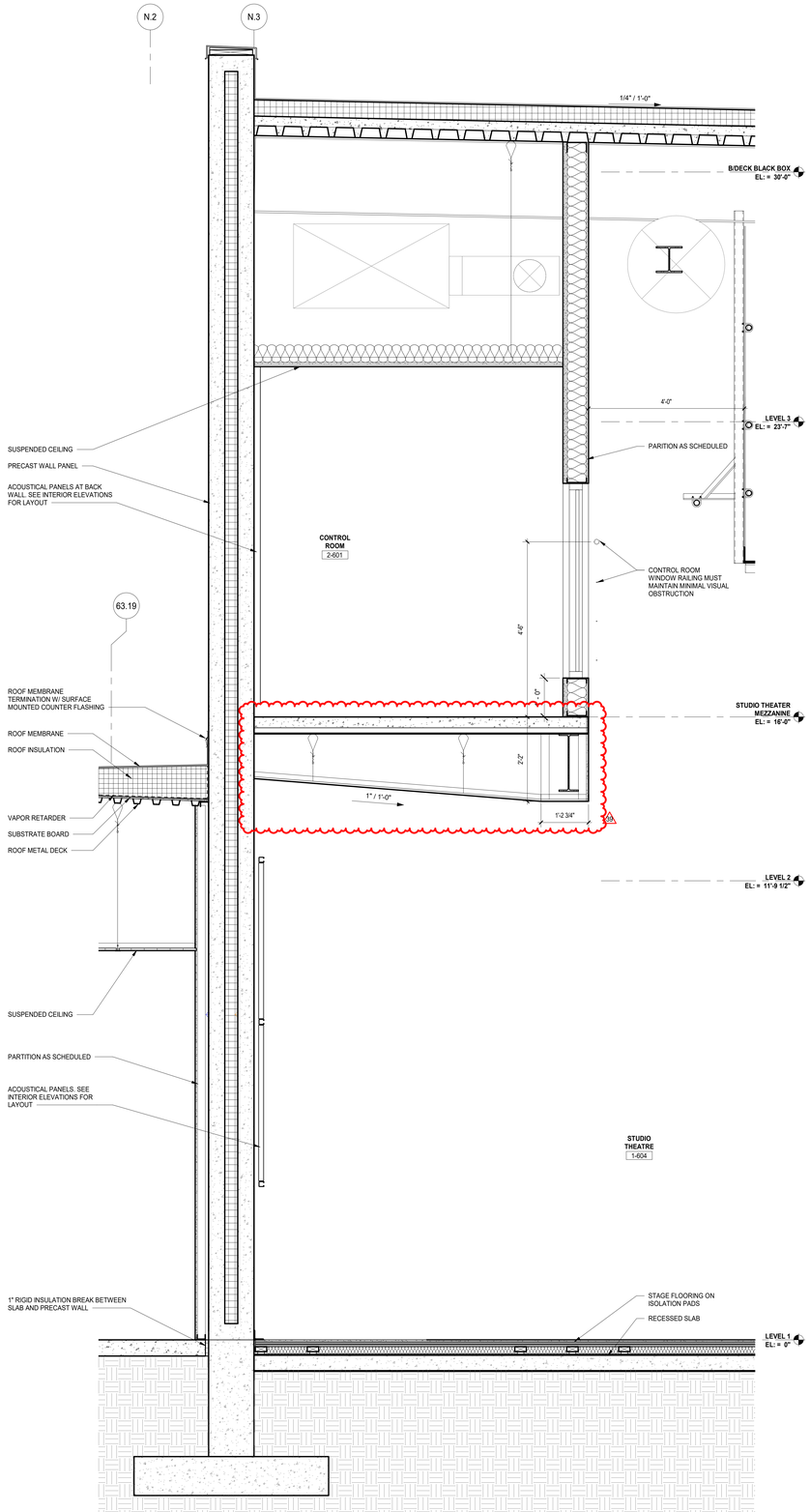
REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
34	ISSUED FOR 75% CONSTRUCTION DOCUMENTS - PHASE C	10.14.2019

MFP IMPLEMENTATION - SOUTH

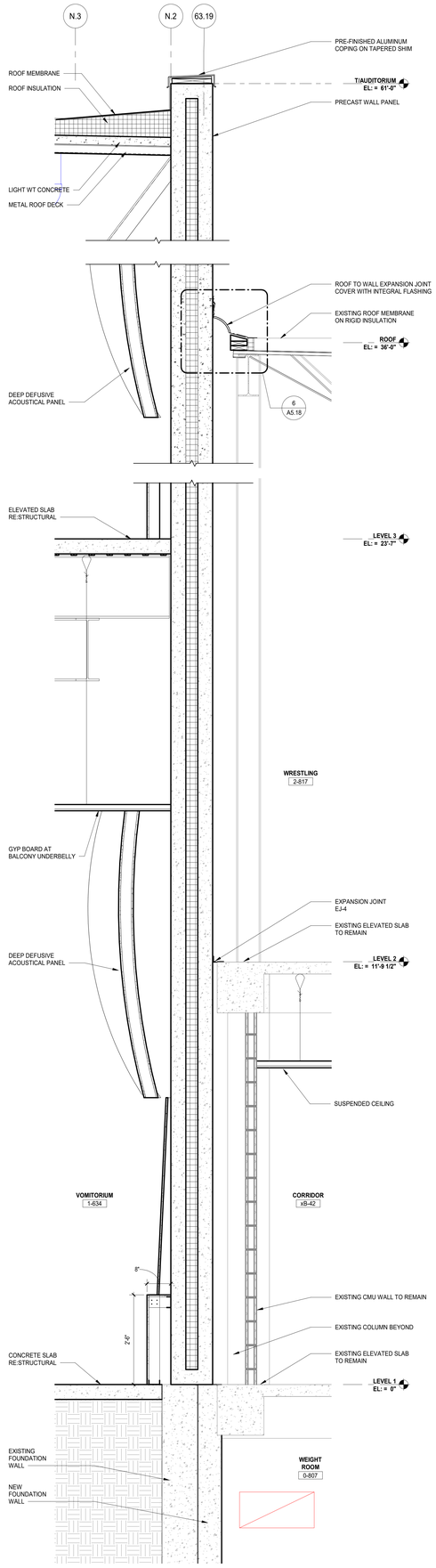
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

PRECAST WALL ELEVATIONS - PHASE C

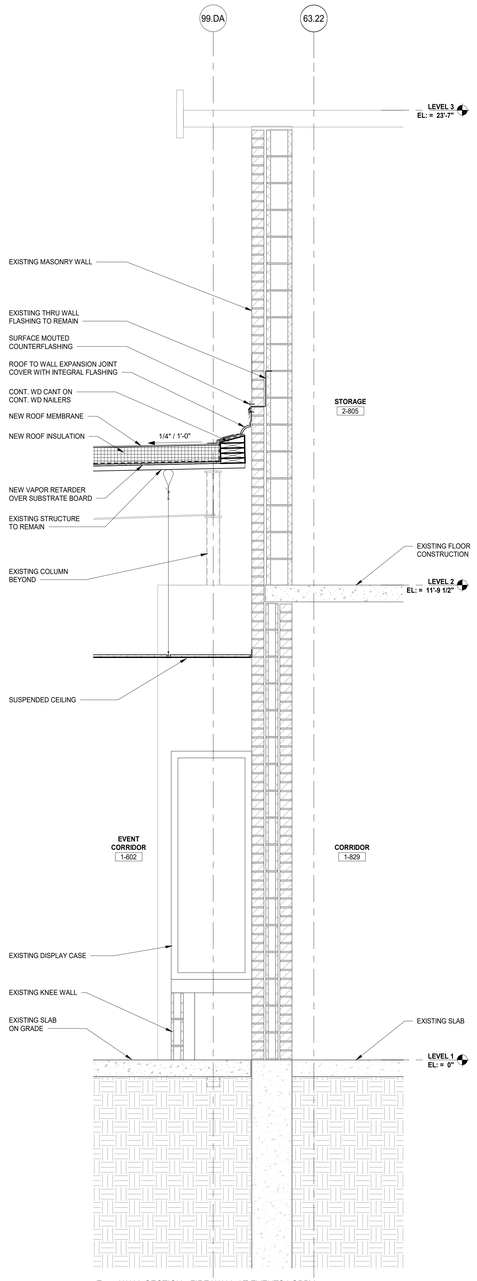
Project Number: 5274-42
Drawn By: Author
Sheet: A4.11



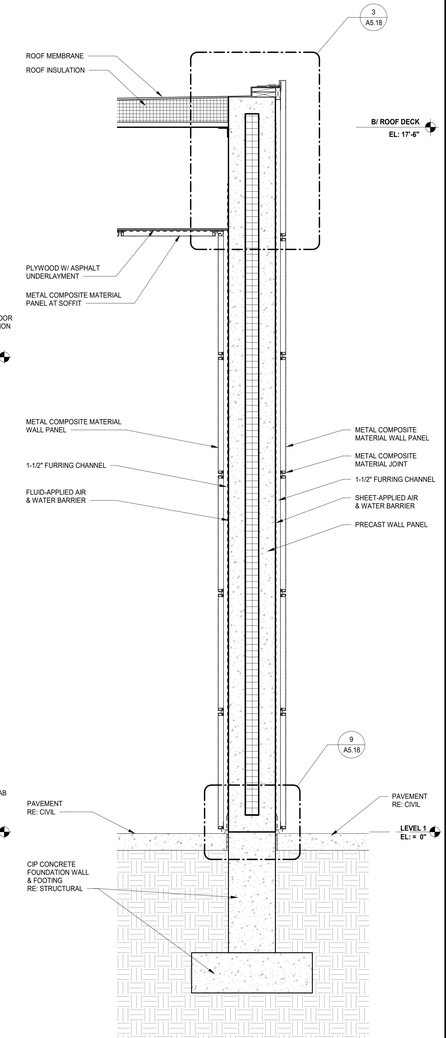
4 WALL SECITON -STUDIO THEATRE
SCALE: 3/4" = 1'-0"



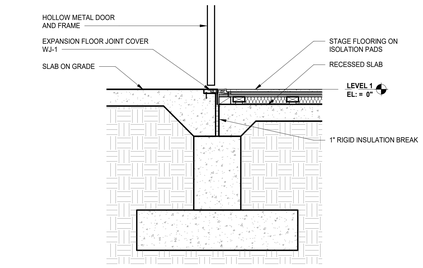
3 WALL SECTION - FIRE SEPARATION @ AUDITORIUM
SCALE: 3/4" = 1'-0"



2 WALL SECTION - FIRE WALL AT EVENTS LOBBY
SCALE: 3/4" = 1'-0"



1 WALL SECTION - CANOPY END WALL
SCALE: 3/4" = 1'-0"



5 SECTION DETAIL - STAGE FLOOR TRANSITION
SCALE: 3/4" = 1'-0"

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NOT FOR CONSTRUCTION

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36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
34	ISSUED FOR 75% CONSTRUCTION DOCUMENTS - PHASE C	10.14.2019
	ISSUED FOR DESIGN DEVELOPMENT	07.12.2019

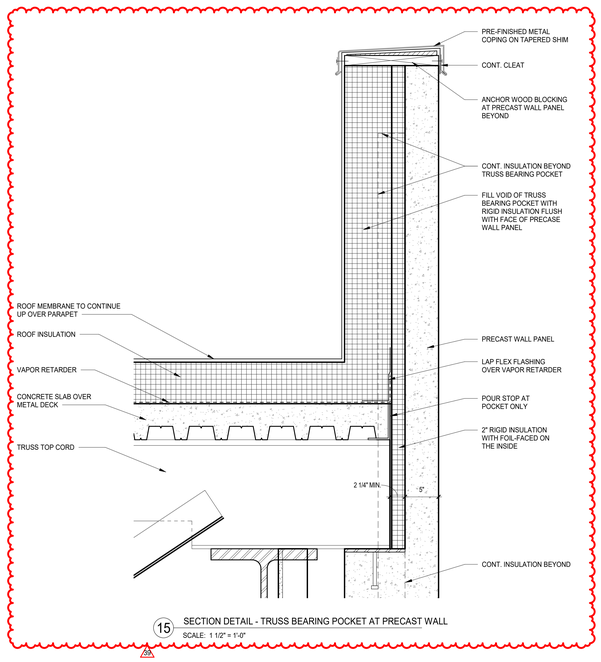
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

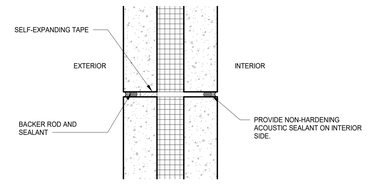
EXTERIOR WALL SECTIONS & DETAILS - PHASE C

Project Number:
5274-42
Drawn By:
Author
Sheet:

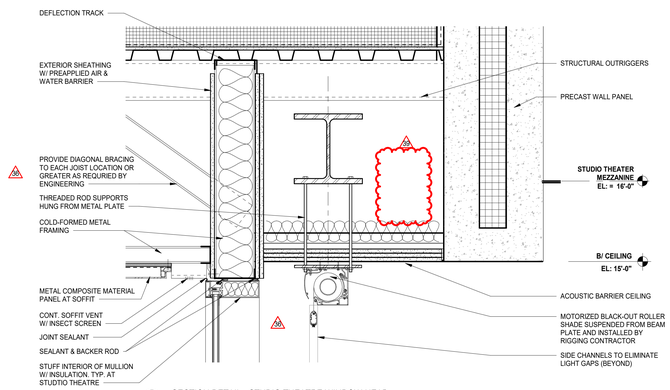
A5.16



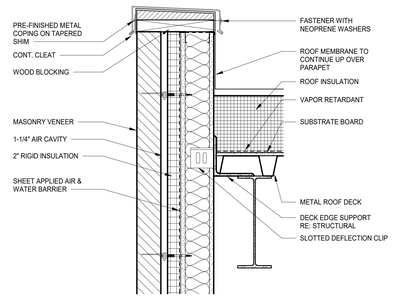
15 SECTION DETAIL - TRUSS BEARING POCKET AT PRECAST WALL
SCALE: 1 1/2" = 1'-0"



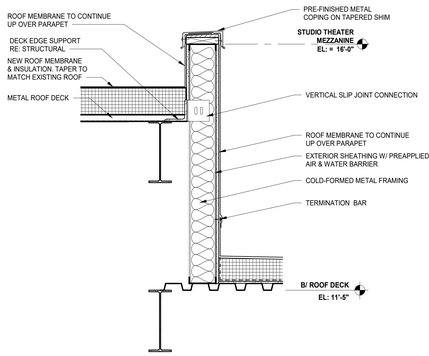
14 SECTION DETAIL - PRECAST WALL PANEL HORIZONTAL JOINT
SCALE: 1 1/2" = 1'-0"



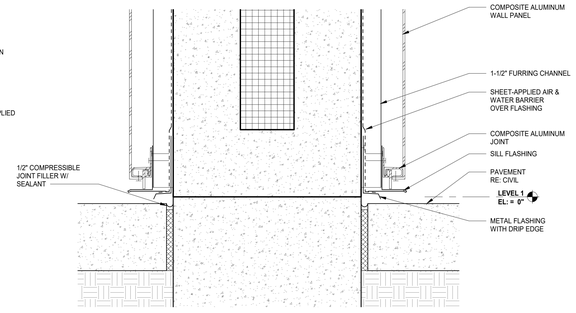
13 SECTION DETAIL - STUDIO THEATRE WINDOW HEAD
SCALE: 1 1/2" = 1'-0"



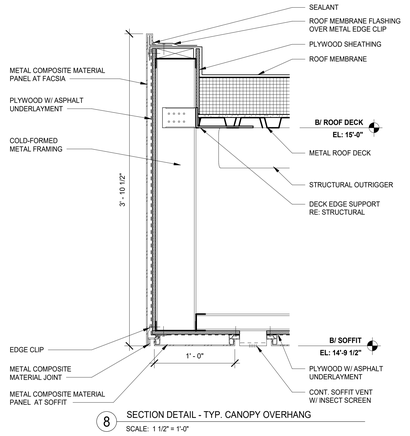
12 SECTION DETAIL @ LEARNING COMMONS BRICK WALL
SCALE: 1 1/2" = 1'-0"



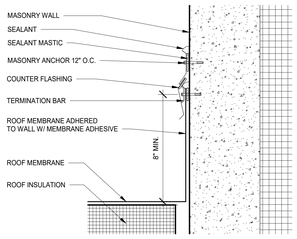
10 SECTION DETAIL - PARAPET WALL @ MUSIC CORRIDOR
SCALE: 1" = 1'-0"



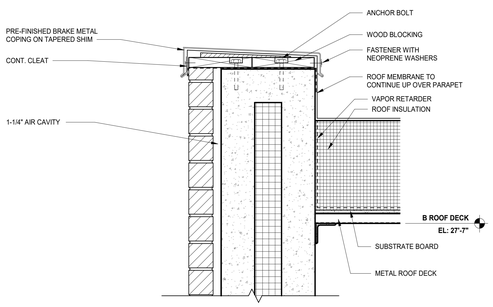
9 SECTION DETAIL - CANOPY WALL @ FOUNDATION
SCALE: 3" = 1'-0"

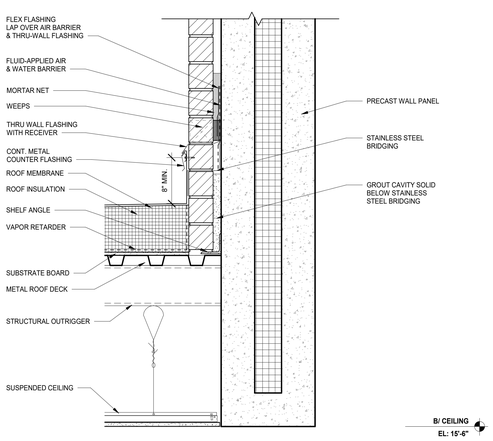


8 SECTION DETAIL - TYP. CANOPY OVERHANG
SCALE: 1 1/2" = 1'-0"

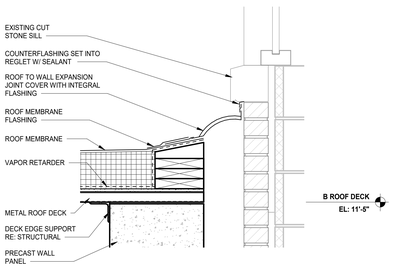


11 SECTION DETAIL - ROOF TO WALL FLASHING
SCALE: 3" = 1'-0"

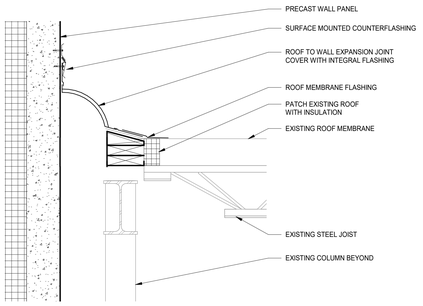




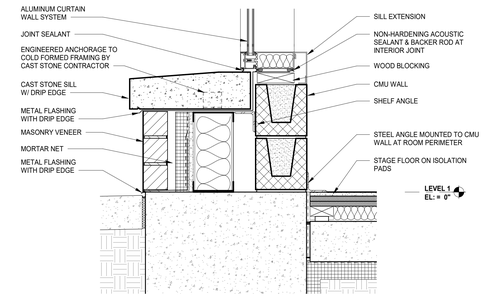
4 SECTION DETAIL - CANOPY @ SCENE SHOP EXT. WALL
SCALE: 1 1/2" = 1'-0"



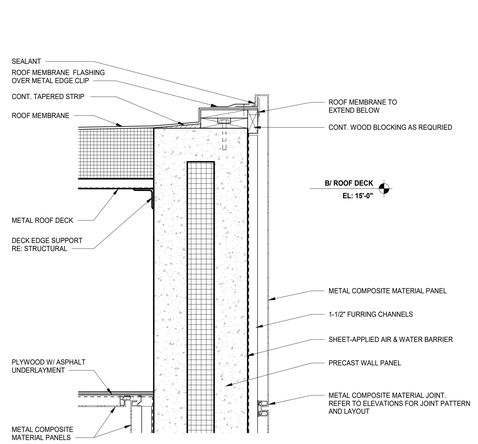
7 SECTION DETAIL - EXPANSION JOINT @ EXISTING WINDOW
SCALE: 1 1/2" = 1'-0"



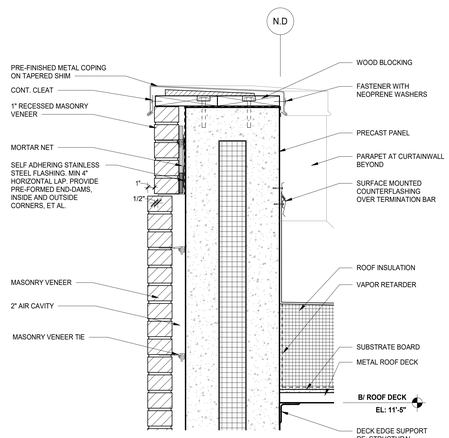
6 SECTION DETAIL - EXPANSION JOINT @ MUSIC CORRIDOR
SCALE: 1 1/2" = 1'-0"



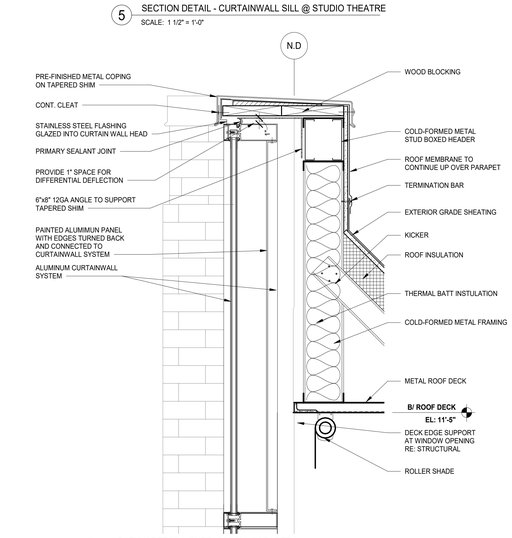
5 SECTION DETAIL - CURTAINWALL SILL @ STUDIO THEATRE
SCALE: 1 1/2" = 1'-0"



3 SECTION DETAIL - CANOPY END WALL
SCALE: 1 1/2" = 1'-0"



2 SECTION DETAIL - PARAPET @ RECESSED MASONRY VENEER
SCALE: 1 1/2" = 1'-0"



1 SECTION DETAIL - CURTAINWALL PARAPET
SCALE: 1 1/2" = 1'-0"

DISTRICT 99
COMMUNITY HIGH SCHOOL DISTRICT 99

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MFP IMPLEMENTATION - SOUTH

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EXTERIOR WALL SECTIONS & DETAILS - PHASE C

Project Number:
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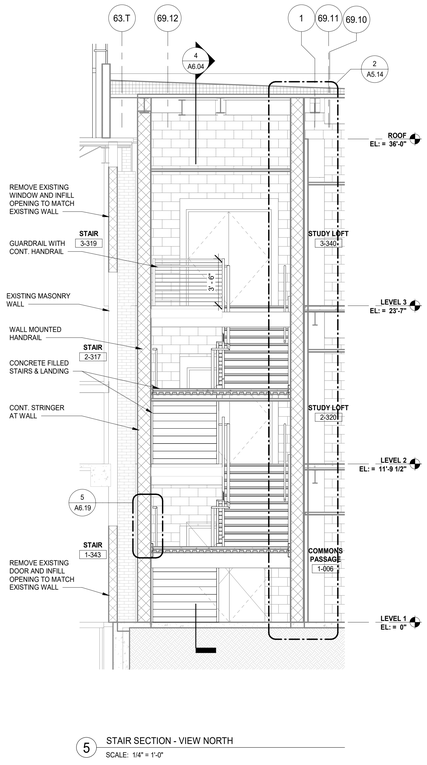
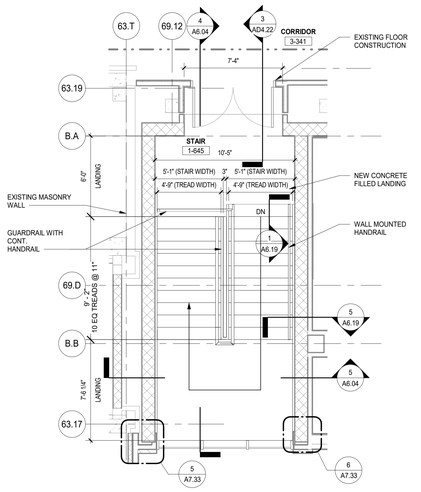
Drawn By:
A.SASSILA
Sheet:

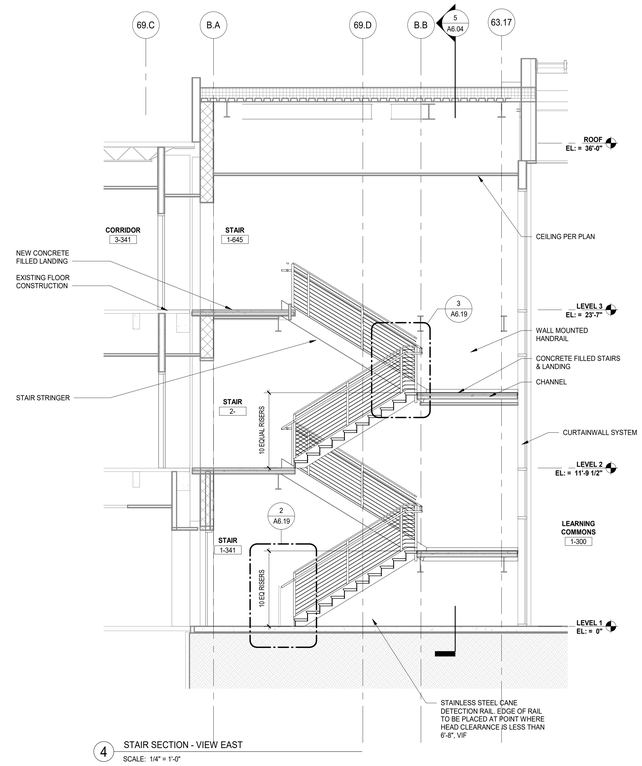
A5.18



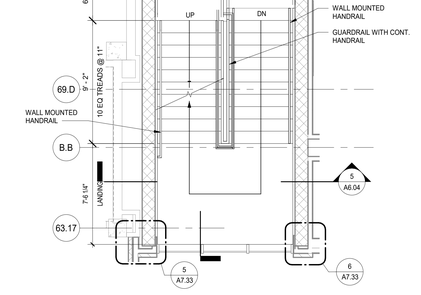
5 STAIR SECTION - VIEW NORTH
SCALE: 1/4" = 1'-0"



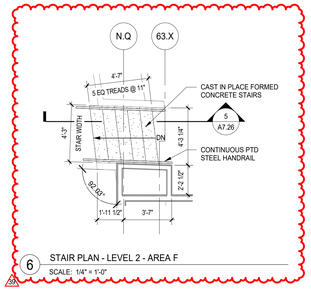
3 STAIR PLAN -LEVEL 3 - AREA B
SCALE: 1/4" = 1'-0"



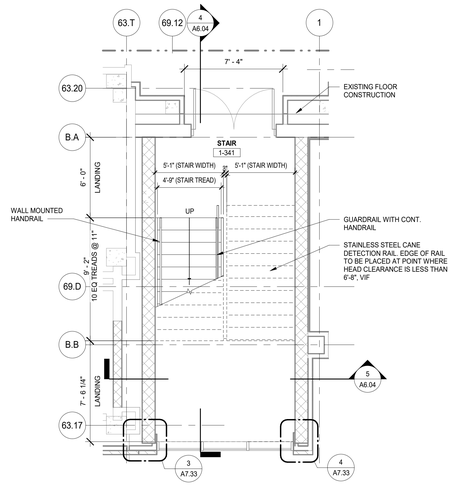
4 STAIR SECTION - VIEW EAST
SCALE: 1/4" = 1'-0"



2 STAIR PLAN -LEVEL 2 - AREA B
SCALE: 1/4" = 1'-0"



6 STAIR PLAN - LEVEL 2 - AREA F
SCALE: 1/4" = 1'-0"



1 STAIR PLAN -LEVEL 1 - AREA B
SCALE: 1/4" = 1'-0"

DISTRICT 99

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MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

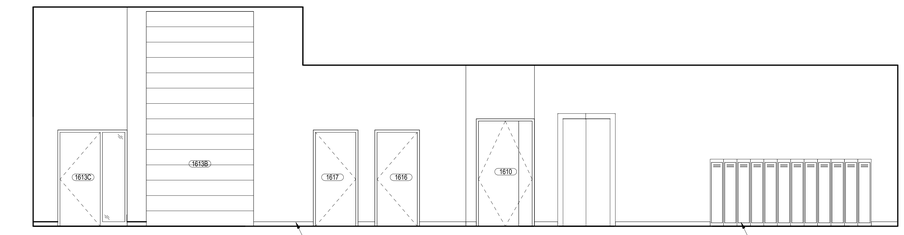
STAIR PLANS & DETAILS - PHASE C

Project Number:
5274-42
Drawn By:
A.SASSILA
Sheet:

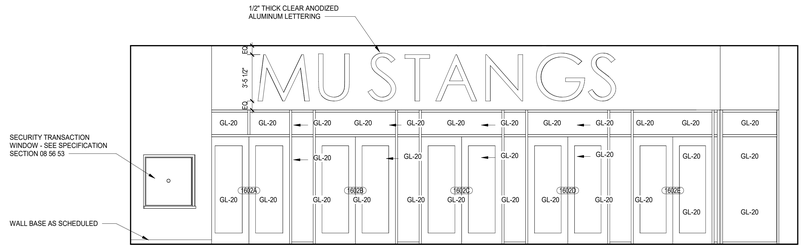
A6.04

GENERAL NOTES

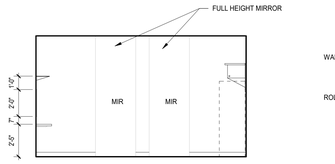
1. TYPICAL VERTICAL ALIGNMENTS OF DEVICES, FIXTURES, & ACCESSORIES IDENTIFIED SHALL BE ALIGNED PER THE DIMENSIONS SHOWN ON SHEET G0.02 UNLESS NOTED OTHERWISE IN THE INTERIOR ELEVATIONS.
2. REFER TO ELECTRICAL & LOW-VOLTAGE DRAWINGS FOR INFORMATION ON ALL LIGHT FIXTURES, OUTLETS, SWITCHES, & WALL/CEILING MOUNTED DEVICES.
3. REFER TP MECHANICAL DRAWINGS FOR ALL CABINET UNIT HEATERS (CUH) AND OTHER MECHANICAL EQUIPMENT & DEVICE INFORMATION.
4. REFER TO THE A9 SERIES FOR CASEWORK INFORMATION & A10 SERIES FOR WALL & BASE FINISHES.
5. ALL EXISTING MASONRY SHALL BE WASHED & CLEANED & TUCKPOINTED.
6. ALL EXISTING SILLS SHALL BE WASHED & CLEANED.



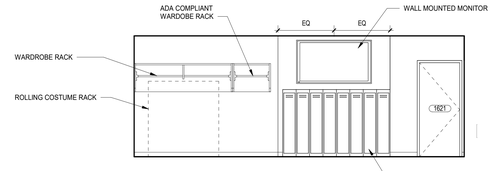
14 INTERIOR ELEVATION - CORRIDOR 1-611 VIEW WEST
SCALE: 1/4" = 1'-0"



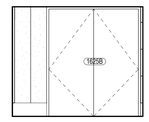
18 INTERIOR ELEVATION - VEST 1-600 VIEW NORTHEAST
SCALE: 1/4" = 1'-0"



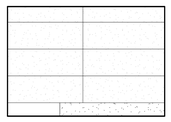
10 INTERIOR ELEVATION - DRESSING ROOM VIEW EAST
SCALE: 1/4" = 1'-0"



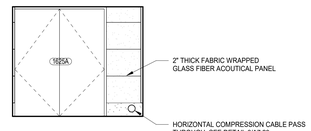
9 INTERIOR ELEVATION - DRESSING ROOM VIEW SOUTH
SCALE: 1/4" = 1'-0"



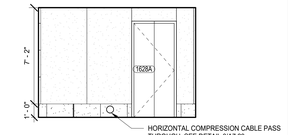
12 INTERIOR ELEVATION - VEST 1-620 VIEW SOUTH
SCALE: 1/4" = 1'-0"



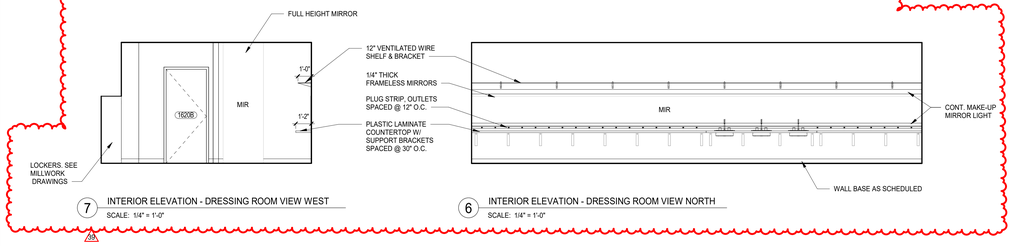
13 INTERIOR ELEVATION - VEST 1-620 VIEW WEST
SCALE: 1/4" = 1'-0"



8 INTERIOR ELEVATION - VEST 1-620 VIEW NORTH
SCALE: 1/4" = 1'-0"

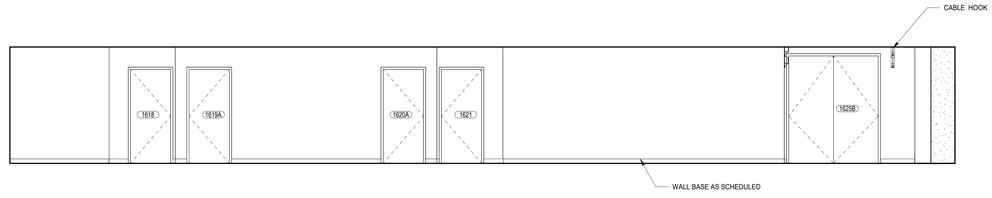


5 INTERIOR ELEVATION - VEST 1-620 VIEW EAST
SCALE: 1/4" = 1'-0"

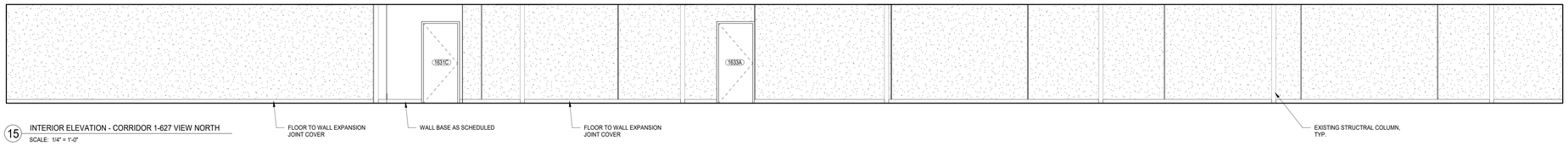


7 INTERIOR ELEVATION - DRESSING ROOM VIEW WEST
SCALE: 1/4" = 1'-0"

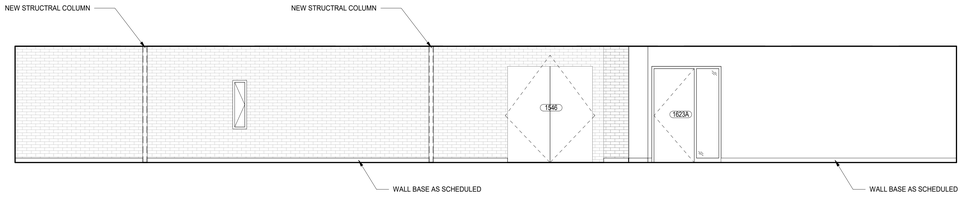
6 INTERIOR ELEVATION - DRESSING ROOM VIEW NORTH
SCALE: 1/4" = 1'-0"



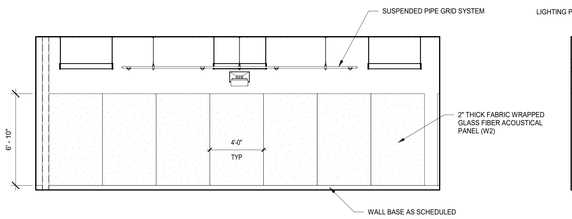
11 INTERIOR ELEVATION - CORRIDOR 1-624 VIEW NORTH
SCALE: 1/4" = 1'-0"



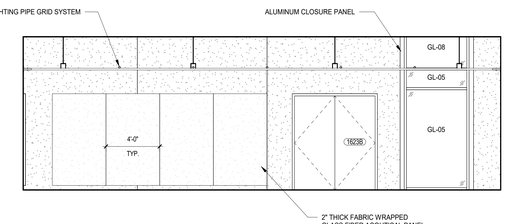
15 INTERIOR ELEVATION - CORRIDOR 1-627 VIEW NORTH
SCALE: 1/4" = 1'-0"



20 INTERIOR ELEVATION - CORRIDOR 1-624 VIEW SOUTH
SCALE: 1/4" = 1'-0"



2 INTERIOR ELEVATION - THEATRE CLASSROOM VIEW EAST
SCALE: 1/4" = 1'-0"



1 INTERIOR ELEVATION - THEATRE CLASSROOM VIEW SOUTH
SCALE: 1/4" = 1'-0"

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INTERIOR ELEVATIONS & DETAILS - PHASE C

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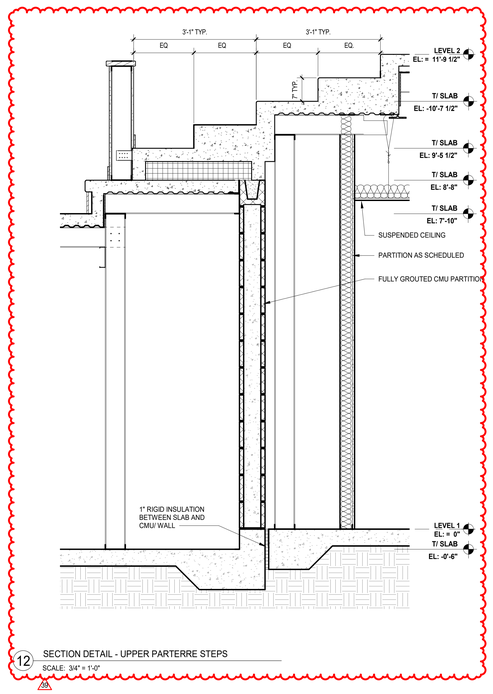
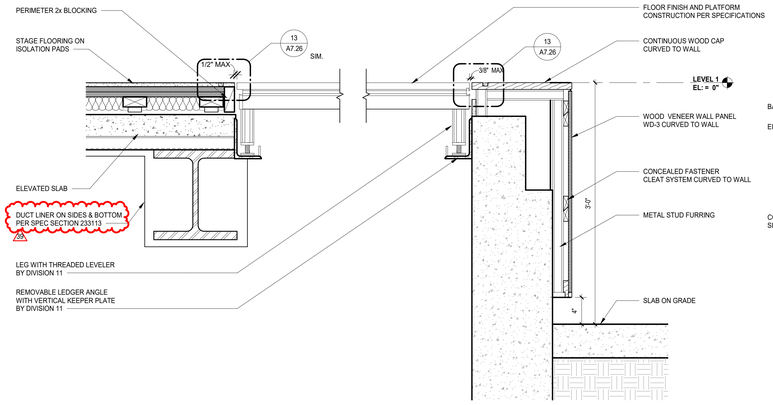
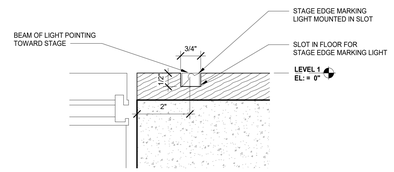


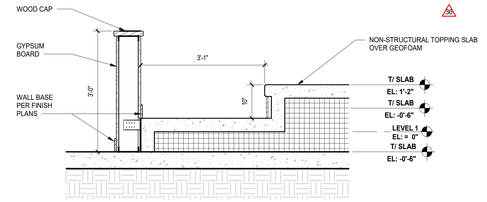
12 SECTION DETAIL - UPPER PARTERRE STEPS
SCALE: 3/4" = 1'-0"



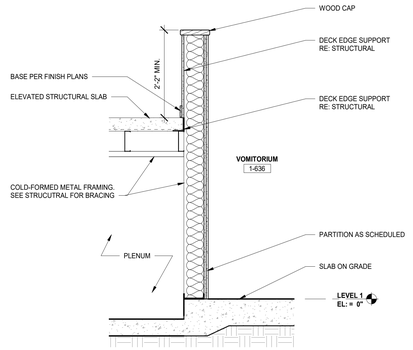
1 SECTION DETAIL - ORCHESTRA PIT UPSTAGE/DOWNSTAGE EDGE
SCALE: 1 1/2" = 1'-0"



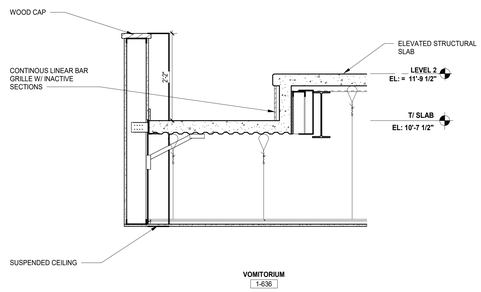
13 SECTION DETAIL - ORCHESTRA PIT UPSTAGE/DOWNSTAGE EDGE LIGHT
SCALE: 6" = 1'-0"



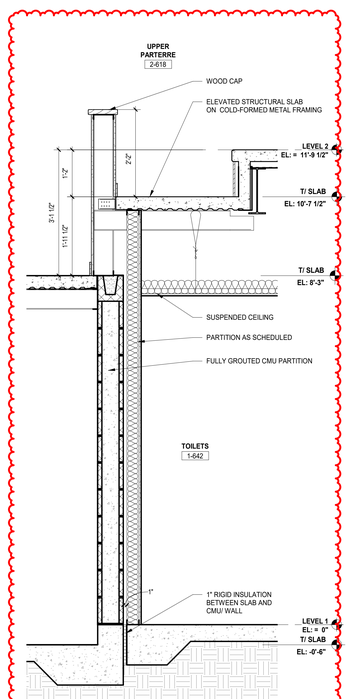
8 SECTION DETAIL - PARTERRE FRONT WALL
SCALE: 3/4" = 1'-0"



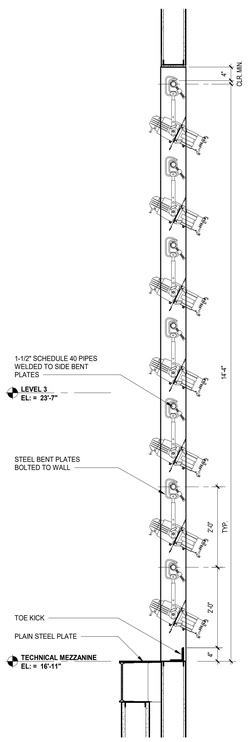
3 SECTION DETAIL - PARTERRE/VOMITORIUM SIDE WALL
SCALE: 3/4" = 1'-0"



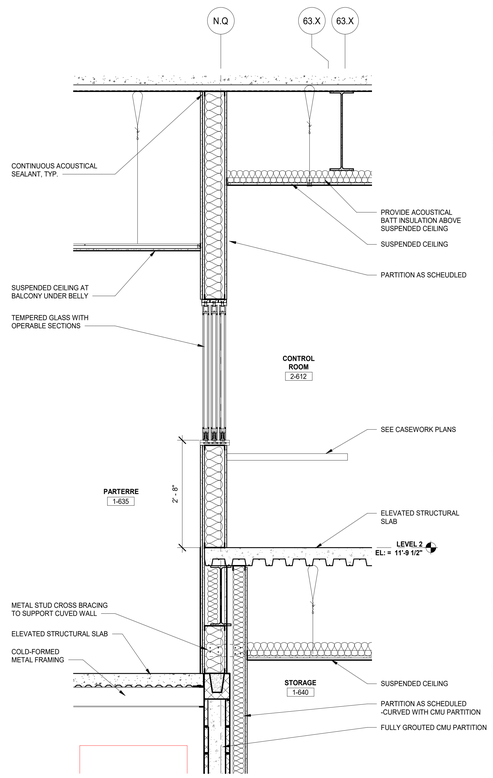
2 SECTION DETAIL - UPPER PARTERRE/VOMITORIUM GUARDRAIL
SCALE: 3/4" = 1'-0"



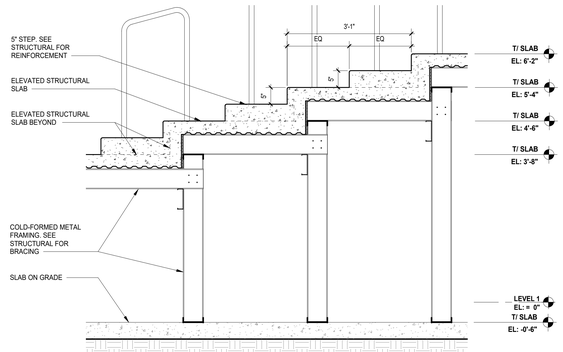
4 SECTION DETAIL - UPPER PARTERRE/TOILETS
SCALE: 3/4" = 1'-0"



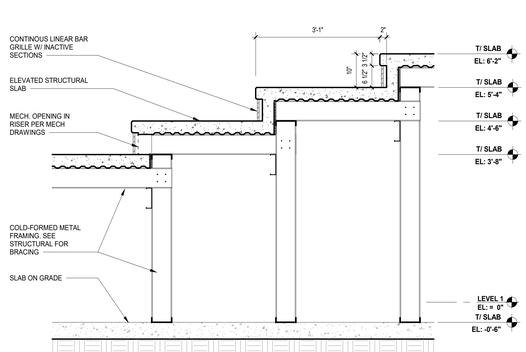
7 SECTION DETAIL - BOX BEAM POSITION
SCALE: 3/4" = 1'-0"



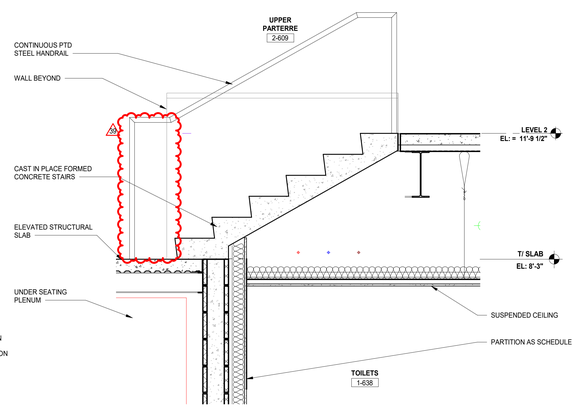
6 SECTION DETAIL - CONTROL ROOM WEST WALL
SCALE: 3/4" = 1'-0"



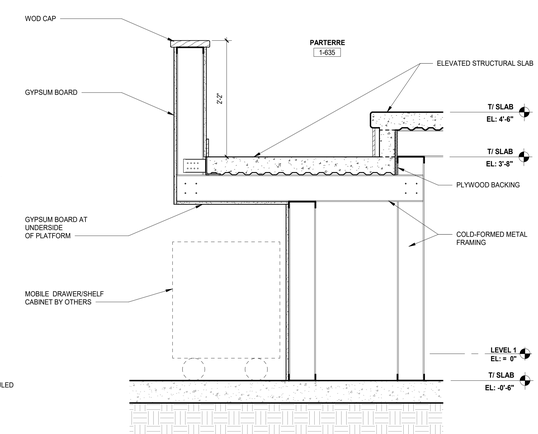
10 SECTION DETAIL - PARTERRE STEPS
SCALE: 3/4" = 1'-0"



11 SECTION DETAIL - PARTERRE SEATING
SCALE: 3/4" = 1'-0"



5 SECTION DETAIL - UPPER PARTERRE STAIRS
SCALE: 3/4" = 1'-0"



9 SECTION DETAIL - IN-HOUSE MIXING POSITION
SCALE: 1" = 1'-0"

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REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
34	ISSUED FOR 75% CONSTRUCTION DOCUMENTS - PHASE C	10.14.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

AUDITORIUM SECTIONS & DETAILS - PHASE C

Project Number:
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Author
Sheet:

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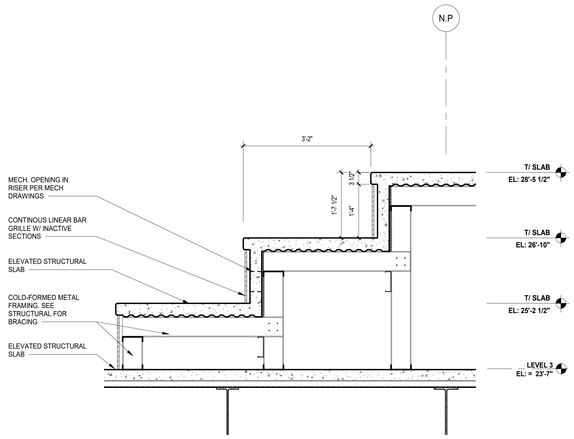
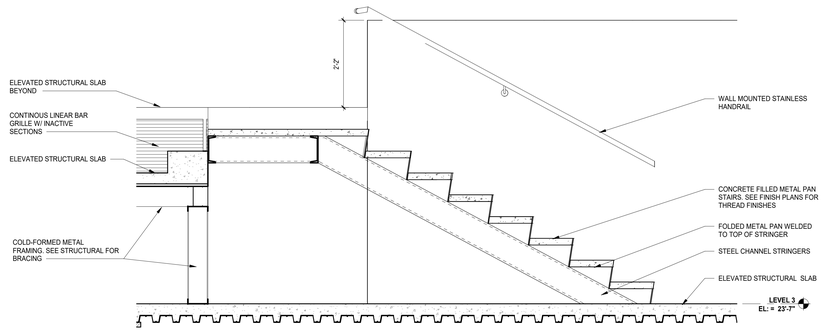
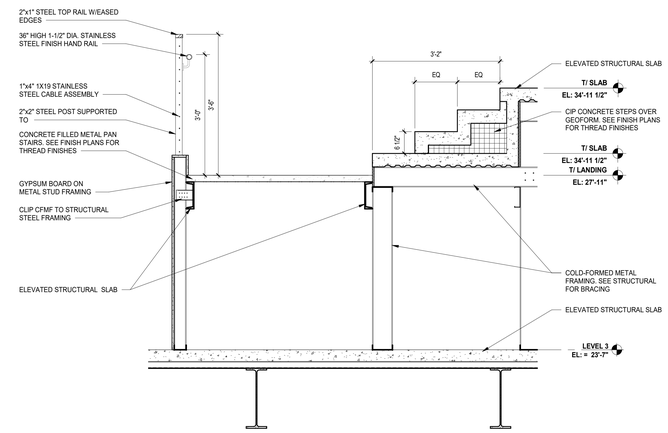


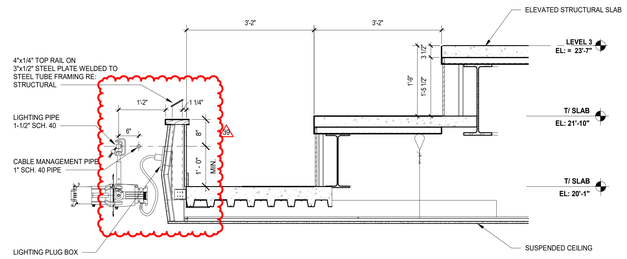
9 SECTION DETAIL - BALCONY SEATING
SCALE: 3/4" = 1'-0"



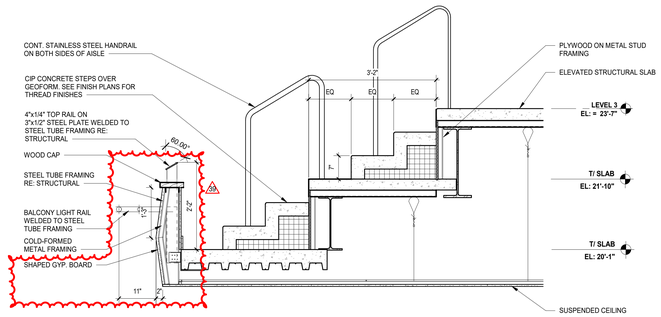
8 SECTION DETAIL - STAIRS @ BALCONY
SCALE: 3/4" = 1'-0"



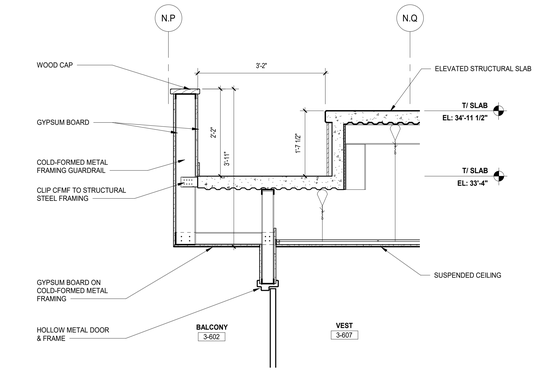
7 SECTION DETAIL -STAIRS @ BALCONY
SCALE: 3/4" = 1'-0"



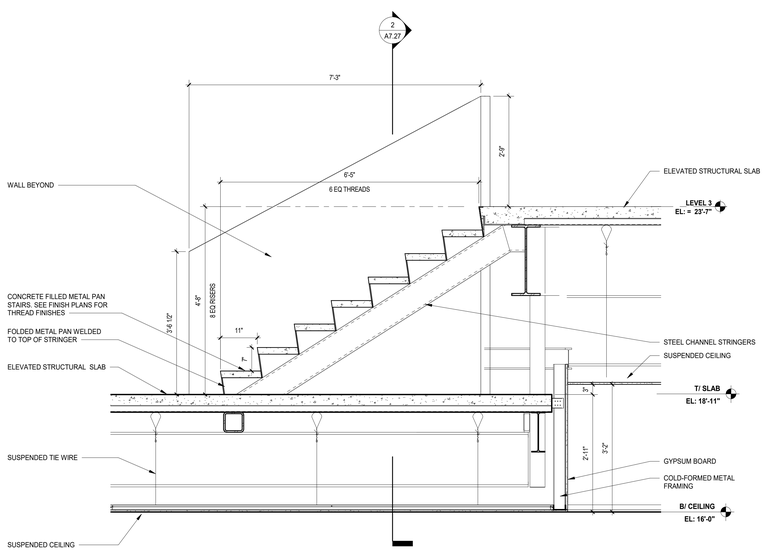
6 SECTION DETAIL - BALCONY FRONT EDGE
SCALE: 3/4" = 1'-0"



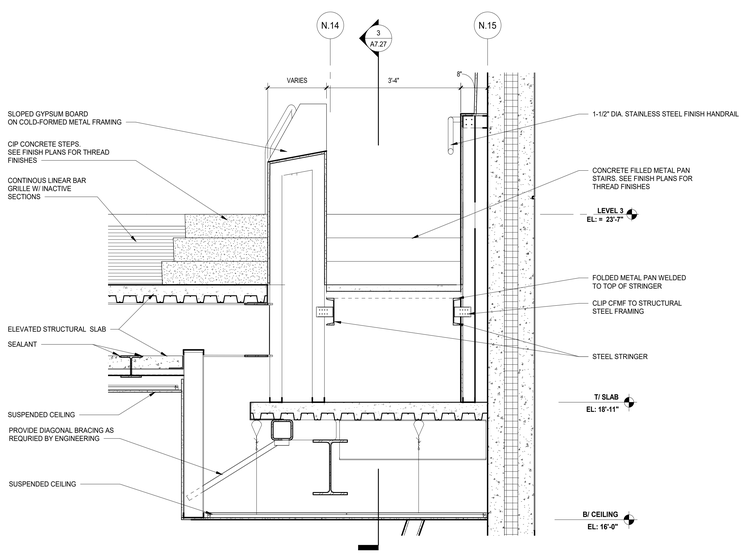
5 SECTION DETAIL - BALCONY FRONT EDGE STEPS
SCALE: 3/4" = 1'-0"



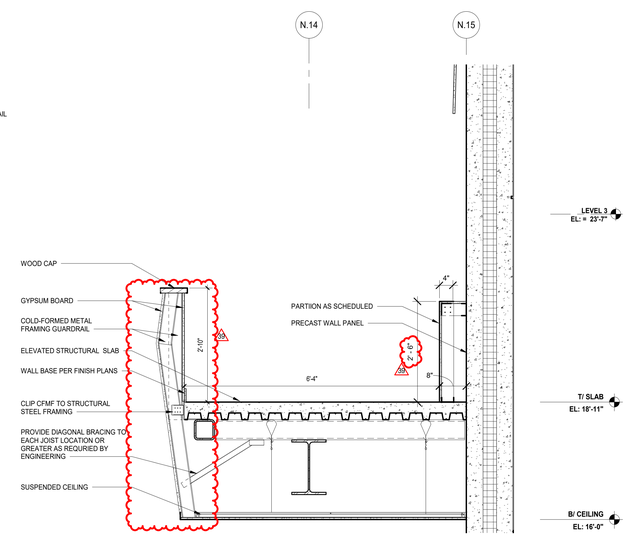
4 SECTION DETAIL - VESTUBULE @ BALCONY
SCALE: 3/4" = 1'-0"



3 SECTION DETAIL - STAIRS @ BALCONY BOXES
SCALE: 3/4" = 1'-0"



2 SECTION DETAIL -STAIRS @ BALCONY BOXES
SCALE: 3/4" = 1'-0"



1 SECTION DETAIL - BALCONY BOXES
SCALE: 3/4" = 1'-0"

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8 ISSUED FOR BID GROUP 8 - PHASE C	12.11.2019 11.20.2019
34	ISSUED FOR 75% CONSTRUCTION DOCUMENTS - PHASE C	10.14.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

AUDITORIUM SECTIONS & DETAILS - PHASE C

Project Number:
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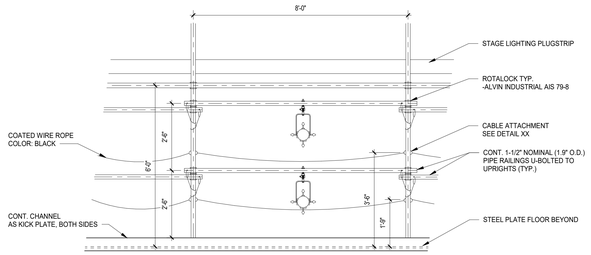
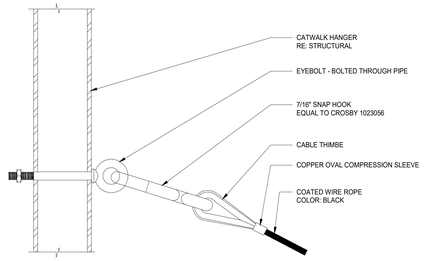
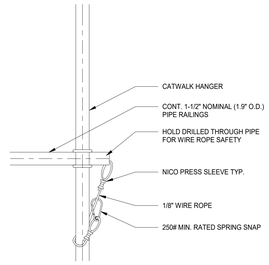


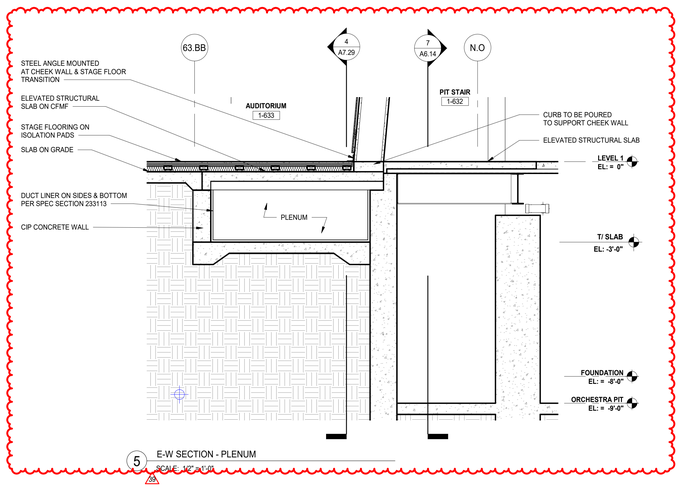
6 ELEVATION - CATWALK #2 AND #3
SCALE: 1/2" = 1'-0"



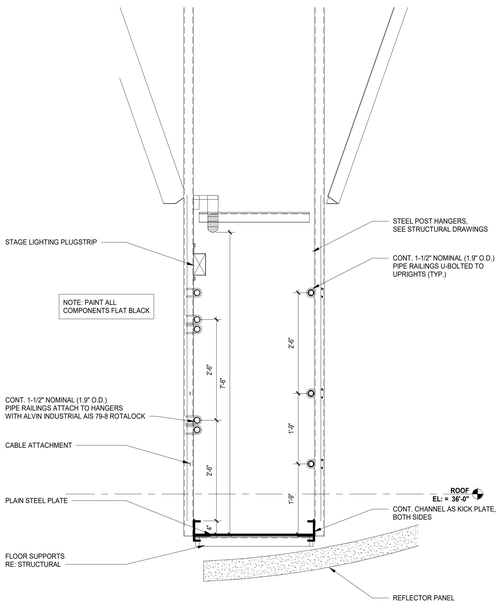
7 CABLE ATTACHMENT
SCALE: 6" = 1'-0"



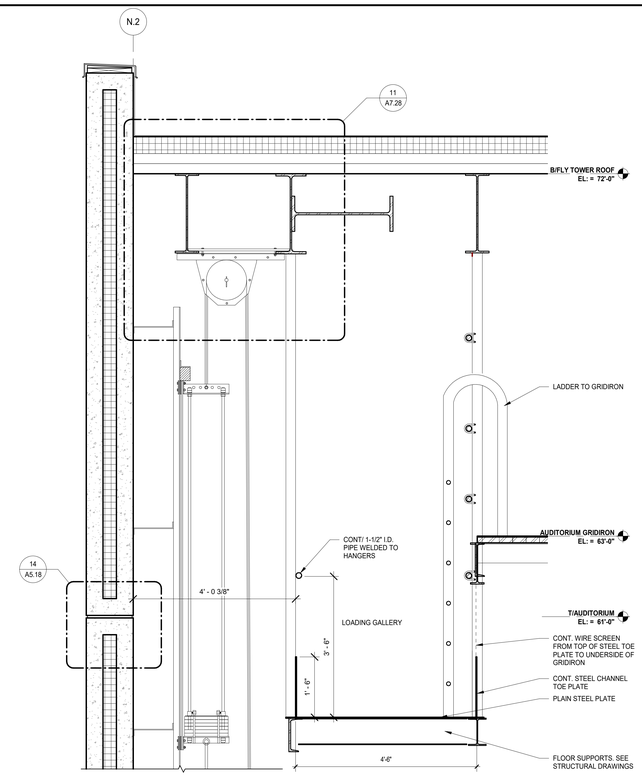
8 PIPE RETAINER CABLE
SCALE: 1 1/2" = 1'-0"



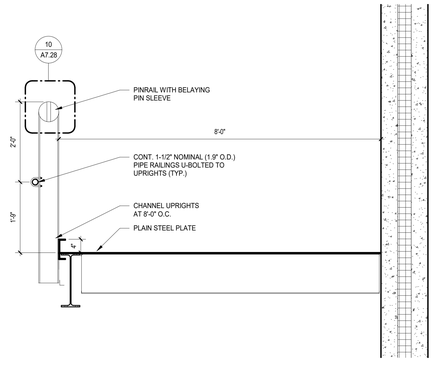
5 E-W SECTION - PLENUM
SCALE: 1/2" = 1'-0"



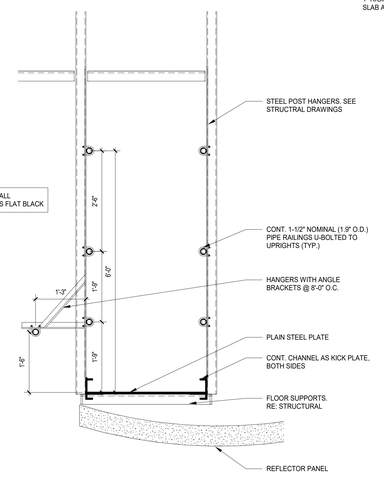
3 SECTION DETAIL - AUDITORIUM CATWALK #2 & #3
SCALE: 3/4" = 1'-0"



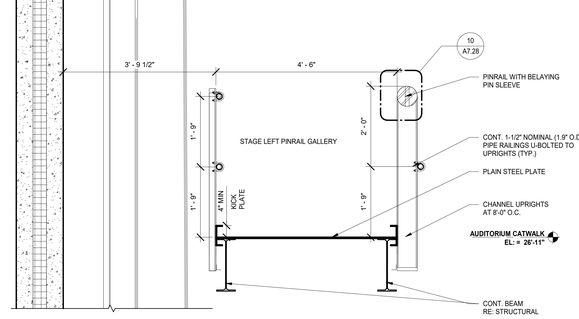
4 N-N SECTION - PLENUM
SCALE: 1/2" = 1'-0"

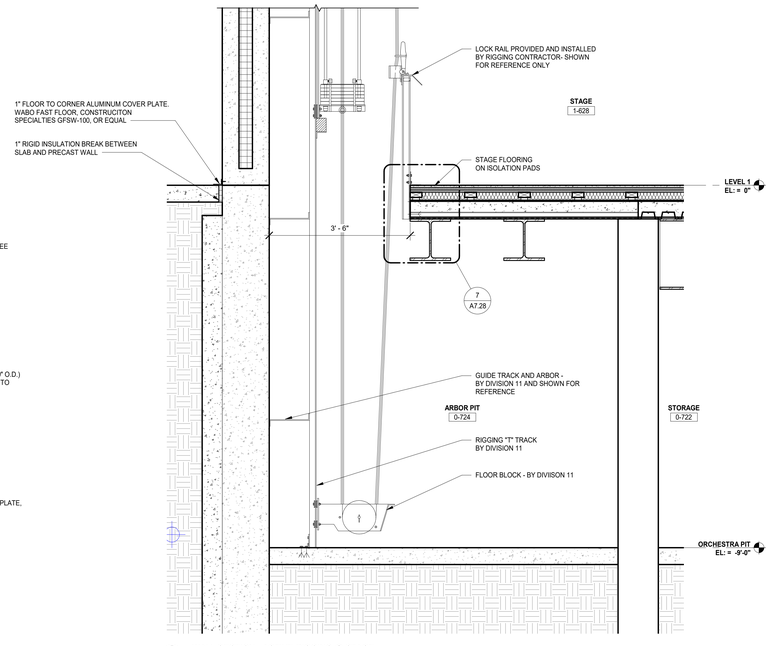


9 SECTION DETAIL - PINRAIL GALLERY ON ON-RIGGING WALL
SCALE: 3/4" = 1'-0"



2 SECTION DETAIL - AUDITORIUM CATWALK #1
SCALE: 3/4" = 1'-0"





1 WALL SECTION - ACTIVE RIGGING @ STAGE
SCALE: 3/4" = 1'-0"

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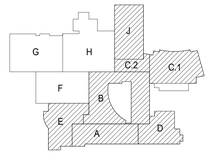

NORTH

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
34	ISSUED FOR 75% CONSTRUCTION DOCUMENTS - PHASE C	10.14.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

AUDITORIUM SECTIONS & DETAILS - PHASE C

Project Number:
5274-42
Drawn By:
Author
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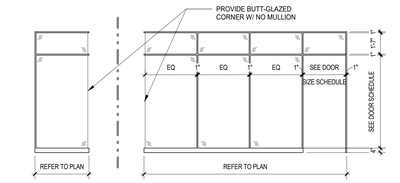

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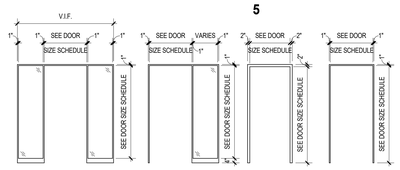
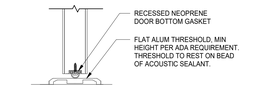


4 3 2 1

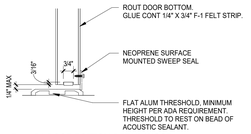
LEGEND - DOOR FRAME ELEVATION

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



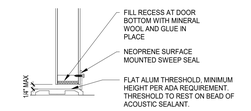
6 D1 DOOR BOTTOM GASKET

SCALE: 3" = 1'-0"



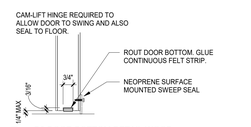
7 D2 DOOR BOTTOM DETAIL WOOD

SCALE: 3" = 1'-0"



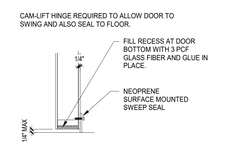
8 D2 DOOR BOTTOM DETAIL METAL

SCALE: 3" = 1'-0"



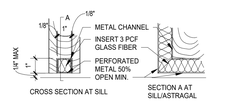
9 D3 DOOR BOTTOM DETAIL WOOD

SCALE: 3" = 1'-0"



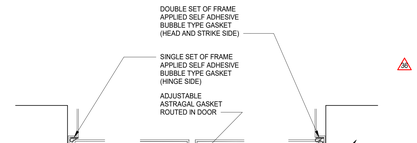
10 D3 DOOR BOTTOM DETAIL METAL

SCALE: 3" = 1'-0"



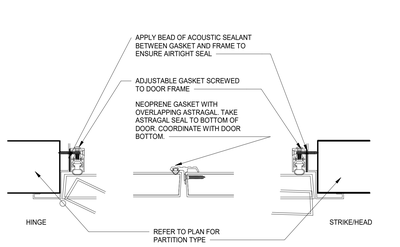
11 D4 DOOR BOTTOM SOUND TRAP DETAIL

SCALE: 3" = 1'-0"



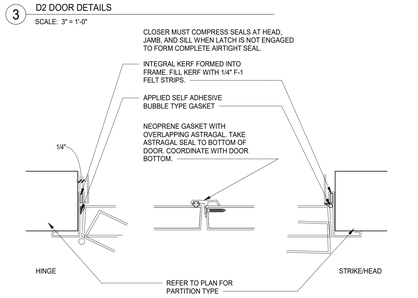
2 D1 DOOR DETAILS

SCALE: 3" = 1'-0"



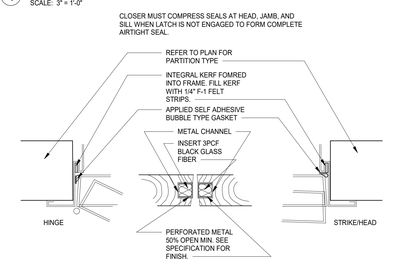
3 D2 DOOR DETAILS

SCALE: 3" = 1'-0"



4 D3 DOOR DETAILS

SCALE: 3" = 1'-0"

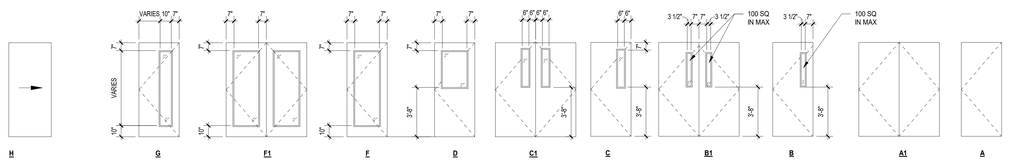


5 D4 DOOR DETAILS

SCALE: 3" = 1'-0"

DOOR SCHEDULE_PHASE C

NUMBER	ELEVATION TYPE	ACOUSTICAL DESIGNATION	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	DOOR DETAIL THICKNESS	DOOR DETAIL MATERIAL	DOOR DETAIL FINISH	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	FRAME DETAIL HEAD	FRAME DETAIL JAMB	FIRE RATING	HARDWARE SET	REMARKS
ORCHESTRA PIT															
0720	A1	D2	6'-0"	7'-0"	2 1/4"	HM	PT	2	HM	PT				108	
0720A	A	D2	3'-0"	7'-0"	2 1/4"	HM	PT	2	HM	PT				71	
0720B	A	D2	3'-0"	7'-0"	2 1/4"	HM	PT	2	HM	PT				71	
0722	A1		6'-0"	7'-0"	1 3/4"	HM	PT	2	HM	PT				106	
0723	A	D2	3'-0"	7'-0"	2 1/4"	HM	PT	2	HM	PT				77	
0724	A		3'-0"	7'-0"	1 3/4"	HM	PT	2	HM	PT				107	
LEVEL 1															
1003A	F1		6'-4"	8'-10 1/2"	1 3/4"	ALUM/GL	--	--	ALUM	--				54	
1003B	F1		6'-4"	8'-10 1/2"	1 3/4"	ALUM/GL	--	--	ALUM	--				55	
1102	F		3'-0"	8'-0"	1 3/4"	WD	STAIN	1	HM	PT				42	
1106	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	1	HM	PT				11	
1116	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	1	HM	PT			60MIN	24	
1118	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	1	HM	PT				13	
1119	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	1	HM	PT				9	
1201C	A		3'-0"	7'-0"	1 3/4"			2							
1202	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	1	HM	PT				13	
1210A	G		3'-0"	7'-0"	1 3/4"			1							
1210B	G		3'-0"	7'-0"	1 3/4"			1							
1211			6'-0"	7'-0"	1 3/4"										
1212A	G		3'-0"	7'-0"	1 3/4"			1							
1212B	A		3'-0"	7'-0"	1 3/4"			3							
1214	G		3'-6"	7'-0"	1 3/4"										
1215	G		3'-0"	7'-0"	1 3/4"			1							
1216	G		3'-0"	7'-0"	1 3/4"			1							
1217	G		3'-6"	7'-0"	1 3/4"										
1218	A		3'-0"	7'-0"	1 3/4"			3							
1300A	F		3'-0"	8'-6"	1 3/4"	ALUM/GL	--	--	ALUM	--				57	
1301	F		3'-0"	6'-10"	1 3/4"	WD	STAIN	1	ALUM	--				59	
1302	F		3'-0"	6'-10"	1 3/4"	WD	STAIN	1	ALUM	--				59	
1303	F		3'-0"	6'-10"	1 3/4"	WD	STAIN	1	ALUM	--				59	
1338	A		3'-0"	7'-0"	1 3/4"	WD/GL	STAIN	3	HM	PT				10	
1341	A1		6'-0"	7'-0"	1 3/4"									102	
1342	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	2	EXIST HM	PT				60	NEW DOOR IN EXISTING FRAME
1344	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	2	EXIST HM	PT				61	NEW DOOR IN EXISTING FRAME
1353	G		3'-0"	7'-0"	1 3/4"	WD	STAIN	1	HM	PT				9	
1354	A		3'-0"	7'-0"	1 3/4"	WD/GL	STAIN	3	HM	PT				9	
1355	A1		6'-0"	7'-0"	1 3/4"	WD	STAIN	2	HM	PT				62	
1527	F		3'-0"	7'-0"	1 3/4"	WD	STAIN	--	ALUM	--				8	
1528	F		3'-0"	7'-0"	1 3/4"	ALUM/GL	--	--	ALUM	--				59	
1529	A		3'-0"	7'-0"	1 3/4"	WD	PT	2	HM	PT				32	
1546	A1	D4	6'-8"	8'-0"	2 1/4"	WD	STAIN	2	HM	PT				63	HOLD OPEN
1600A	F1	--	6'-0"	8'-0"	1 3/4"	ALUM/GL	--	--	ALUM	--				65	SECURITY DOOR RELEASE, MAGNETIC CONTACTS
1600B	F1	--	6'-0"	8'-0"	1 3/4"	ALUM/GL	--	--	ALUM	--				65	MAGNETIC CONTACTS
1600C	F1	--	6'-0"	8'-0"	1 3/4"	ALUM/GL	--	--	ALUM	--				65	MAGNETIC CONTACTS
1600D	F1	--	6'-0"	8'-0"	1 3/4"	ALUM/GL	--	--	ALUM	--				65	MAGNETIC CONTACTS
1600E	F1	--	6'-2 1/4"	8'-0"	1 3/4"	ALUM/GL	--	--	ALUM	--				64	ACCESS CARD READER, MAGNETIC CONTACTS, ADA ACTUATOR
1601	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	3	HM	PT				23	
1602A	F1	--	6'-1 1/2"	8'-0"	1 3/4"	ALUM/GL	--	--	ALUM	--				68	
1602B	F1	--	5'-11 3/4"	8'-0"	1 3/4"			--						66	
1602C	F1	--	6'-0"	8'-0"	1 3/4"			--						66	
1602D	F1	--	6'-0"	8'-0"	1 3/4"			--						66	
1602E	F1	--	6'-0"	8'-0"	1 3/4"	ALUM/GL	--	--	ALUM	--				67	
1603	A1	D2	6'-0"	8'-0"	2 1/4"	WD	STAIN	2	HM	PT				69	LOCKING LADDER PULL
1604A	A1	D4	6'-0"	8'-0"	2 1/4"	WD	STAIN	2	HM	PT				70	NON-LATCHING HARDWARE, LADDER PULL
1604B	A1	D4	4'-0"	7'-10"	2 1/4"	WD	PT	2	HM	PT				71	NON-LATCHING HARDWARE
1604C	A1	D4	7'-0"	14'-0"	2 1/4"	HM	PT	2	HM	PT				72	NON-LATCHING HARDWARE
1605	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	2	HM	PT				74	
1606	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	2	HM	PT				13	
1607	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	2	HM	PT				74	
1608A	A1	D2	6'-0"	7'-0"	2 1/4"	WD	STAIN	2	HM	PT				75	
1608B	A1	D2	6'-0"	7'-0"	2 1/4"	WD	STAIN	2	HM	PT				76	
1609	C		3'-0"	7'-0"	1 3/4"	WD/GL	PT	2	HM	PT				23	
1610	A1	D2	4'-0"	7'-10"	2 1/4"	WD	PT	2	HM	PT				77	
1612	A1	D2	7'-0"	14'-0"	2 1/4"	HM	PT	2	HM	PT				78	
1613A			0"	0"	0"				ALUM/GL					--	
1613B			8'-0"	16'-0"	2"									--	INSULATED
1613C	A	D2	3'-0"	7'-0"	1 3/4"	HM	PT	3	HM	PT				79	
1614	A		3'-0"	7'-0"	1 3/4"	HM	PT	2	HM	PT				10	
1615	A		3'-0"	7'-0"	1 3/4"	HM	PT	2	HM	PT				13	
1616	A	D2	3'-0"	7'-0"	2 1/4"	WD	STAIN	2	HM	PT				80	
1617	A	D2	3'-0"	7'-0"	2 1/4"	WD	STAIN	2	HM	PT				80	
1618	A	D2	3'-0"	7'-0"	2 1/4"	WD	STAIN	2	HM	PT				81	
1619A	A	D2	3'-0"	7'-0"	2 1/4"	WD	STAIN	2	HM	PT				82	
1619B	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	2	HM	PT				83	
1620A	A	D2	3'-0"	7'-0"	2 1/4"	WD	STAIN	2	HM	PT				82	
1620B	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	2	HM	PT				83	
1621	A	D2	3'-0"	7'-0"	2 1/4"	WD	STAIN	2	HM	PT				81	
1622A	F1		7'-0"	8'-0"	1 3/4"	ALUM	--	--	ALUM	-				51	CARD READER
1622B	F1		7'-0"	7'-0"	1 3/4"	ALUM	--	--	ALUM	-				6	
1623A	A	D4	3'-0"	7'-0"	2 1/4"	WD/GL	STAIN	3	HM	PT				84	
1623B	A1	D2	6'-0"	7'-0"	1 3/4"	HM	--	2TB	HM	--				85	
1625A	A1	D3	6'-8"	8'-0"	2 1/4"	WD	STAIN	2	HM	PT				75	HOLD OPEN
1625B	A1	D3	6'-8"	8'-0"	2 1/4"	WD	STAIN	2	HM	PT				76	HOLD OPEN
1627A	D		6'-0"	7'-0"	1 3/4"	WD	STAIN	1	HM	PT				53	
1627B	A1		6'-0"	7'-0"	1 3/4"	WD	STAIN	2	HM	PT				86	
1628A	A	D4	3'-0"	7'-0"	2 1/4"	HM	PT	2	HM	PT			90 MIN	87	NON-LATCHING HARDWARE
1628B		SS0	6'-0"	16'-0"	2"								90 MIN	--	
1628C	A	D4	3'-0"	7'-0"	2 1/4"	HM	PT	2	HM	PT			90 MIN	87	NON-LATCHING HARDWARE
1628D	A	D4	3'-0"	7'-0"	2 1/4"	HM	PT	2	HM	PT			90 MIN	87	NON-LATCHING HARDWARE
1628E	A	D4	3'-0"	7'-0"	2 1/4"	HM	PT	2	HM	PT			90 MIN	87	NON-LATCHING HARDWARE
1629A	A	D4	3'-0"	7'-0"	2 1/4"	WD	PT	1	HM	PT				88	NON-LATCHING HARDWARE
1630A	A	D2	3'-0"	7'-0"	2 1/4"	WD	STAIN	2	HM	PT				90	
1630B	A	D4	3'-0"	7'-0"	2 1/4"	WD	PT	1	HM	PT				89	NON-LATCHING HARDWARE
1631A	A	D4	3'-0"	7'-0"	2 1/4"	WD	PT	1	HM	PT				89	
1631B	A	D2	3'-0"	7'-0"	2 1/4"	HM	PT	2	HM	PT				91	
1631C	A	D2	3'-0"	7'-0"	2 1/4"	WD	STAIN	2	HM	PT				90	
1633A	A	D2	3'-0"	7'-0"	2 1/4"	WD	STAIN	2	HM	PT				90	
1633B	A	D2	3'-0"	7'-0"	2 1/4"	WD	STAIN	1	HM	PT				89	NON-LATCHING HARDWARE
1637A	A1	D2	6'-0"	7'-11"	2 1/4"	WD	STAIN	1	HM	PT				69	MAGNETIC HOLD OPENS, LOCKING LADDER PULL
1637B	A1	D4	6'-0"	7'-11"	2 1/4"	WD	STAIN	1	HM	PT				70	NON-LATCHING HARDWARE, LADDER PULL
1640	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	2	HM	PT				13	
1644A	A1	D2	6'-0"	7'-11"	2 1/4"	WD	STAIN	1	HM	PT				69	MAGNETIC HOLD OPENS, LOCKING LADDER PULL
1644B	A1	D4	6'-0"	7'-11"	2 1/4"	WD	STAIN	1	HM	PT				70	NON-LATCHING HARDWARE, LADDER PULL
LEVEL 2															
1304A	F1		7'-0"	8'-6"	1 3/4"	ALUM/GL	--	--	ALUM	--				58	
1502	A1		6'-0"	7'-0"	1 3/4"	WD	STAIN	2	HM	PT				92	
2609B	A	D4	3'-0"	7'-0"	2 1/4"	WD	STAIN	2	HM	PT				89	NON-LATCHING HARDWARE
2610	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	2	HM	PT				59	
2611	A	D2	3'-0"	7'-0"	2 1/4"	WD	STAIN	2	HM	PT				90	
2612A	A	D2	3'-0"	7'-0"	2 1/4"	WD	STAIN	2	HM	PT				93	
2612B	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	1	HM	PT				94	
2613	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	2	HM	PT				59	
2613A	A1		6'-0"	7'-0"	1 3/4"	WD	STAIN	2	HM	PT				31	
2613B	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	2	HM	PT				95	
2614A	A	D2	3'-0"	7'-0"	2 1/4"	WD	STAIN	2	HM	PT				90	
2615	G		3'-0"	7'-0"	1 3/4"	WD	STAIN	2	HM	PT				9	
2616	G		3'-0"	7'-0"	1 3/4"	WD	STAIN	2	HM	PT				9	
2617	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	2	HM	PT				10	
2618B	A	D4	3'-0"	7'-0"	2 1/4"	WD	STAIN	2	HM	PT				89	NON-LATCHING HARDWARE
2807A	C		6'-0"	7'-0"	1 3/4"										
STUDIO THEATER MEZZANINE															
2601A	A	D4	3'-0"	7'-0"	2 1/4"	HM	PT	1	HM	PT				88	NON-LATCHING HARDWARE
2601B	A	D2	3'-0"	7'-0"	2 1/4"	WD	PT	2	HM	PT				97	
2602A	A	D2	3'-0"	7'-0"	2 1/4"	WD	PT	2	HM	PT				96	
2602B	A	D4	3'-0"	7'-0"	2 1/4"	WD	PT	2	HM	PT				88	NON-LATCHING HARDWARE
2603	A		3'-0"	7'-0"	1 3/4"	HM	PT	2	HM	PT				27	PANIC HARDWARE
2604	A	D2	3'-0"	7'-0"	2 1/4"	HM	PT	2	HM	PT				98	
2605	A1		6'-0"	7'-0"	1 3/4"	HM	PT	2	HM	PT				99	
2606	A1		6'-0"	7'-0"	1 3/4"	HM	PT	2	HM	PT				100	
2607	A1		6'-0"	7'-0"	1 3/4"	HM	PT	2	HM	PT				101	
2608	A1		6'-0"	7'-0"	1 3/4"	HM	PT	2	HM	PT				40	
LEVEL 3															
3375	A1		6'-0"	7'-0"	1 3/4"	WD	STAIN		HM	PT				102	
3600	A		3'-0"	7'-0"	1 3/4"	WD	PT	2	HM	PT				104	NON-LATCHING HARDWARE
3601	A		3'-0"	7'-0"	1 3/4"	WD	PT	2	HM	PT				104	NON-LATCHING HARDWARE
3602A	A1	D2	6'-0"	7'-0"	2 1/4"	WD	STAIN	1	HM	PT				69	MAGNETIC HOLD OPENS, LOCKING LADDER PULL
3602B	A1	D4	6'-0"	7'-0"	2 1/4"	WD	STAIN	1	HM	PT				70	NON-LATCHING HARDWARE, LADDER PULL
3607A	A1	D2	6'-0"	7'-0"	2 1/4"	WD	STAIN	1	HM	PT				69	MAGNETIC HOLD OPENS, LOCKING LADDER PULL
3607B	A1	D4	6'-0"	7'-0"	2 1/4"	WD	STAIN	1	HM	PT				70	NON-LATCHING HARDWARE, LADDER PULL
3705	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	2	HM	PT				105	
3709	A		3'-0"	7'-0"	1 3/4"	WD	STAIN	2	HM	PT				105	
AUDITORIUM CATWALK															
4601	A		3'-0"	7'-0"	1 3/4"	HM	PT	2	HM	PT				103	NON-LATCHING HARDWARE
4602	A		3'-0"	7'-0"	1 3/4"	HM	PT	2	HM	PT				103	NON-LATCHING HARDWARE



1 DOOR TYPE LEGEND - PHASE C

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

GENERAL NOTES

1. FIELD VERIFY ALL EXISTING DOOR FRAME OPENINGS TO RECEIVE NEW DOORS.
2. REFER TO THE PROJECT MANUAL FOR DOOR HARDWARE SPECIFICATIONS AND HARDWARE LISTS PER DOOR NUMBER.
3. UNLESS NOTED OTHERWISE, PROVIDE 1/4" TEMPERED SAFETY GLAZING AT NON- FIRE RATED DOORS, FIRE RATED SAFETY GLAZING AT FIRE RATED DOORS, AND 1" INSULATED GLAZING AT EXTERIOR DOORS.
4. ALL NEW EXTERIOR HOLLOW METAL DOORS AND FRAMES TO BE GALVANIZED. REFER TO SPECIFICATIONS.
5. CONTRACTOR TO PATCH STRIKE PLATE OPENINGS IN DOOR FRAMES AT REMOVED HARDWARE, INCLUDING DEADBOLTS AND LOCKSETS.
6. REFER TO THE FLOOR PLANS FOR EXISTING STORAGE CABINETS TO RECIEVE NEW LOCK CYLINDERS MASTER-KEYED TO THE NEW SYSTEM. THESE CABINETS ARE DESIGNATED BY THE ASSOCIATED FLOOR PLAN KEY NOTE ON THE SHEET.

DOOR SYMBOL REMARKS

1. NEW DOOR AND HARDWARE IN EXISTING HOLLOW METAL FRAME. VERIFY EXISTING OPENING SIZE. CONTRACTOR TO VERIFY THE JAMB HING AND JAMB STRIKE LOCATIONS OON THE EXISTING FRAMES AND COORDINATE WITH THE HARDWARE LOCATIONS ON THE NEW DOORS.
2. REPLACE CYLINDRICAL KNOB LOCKSET WITH CYLINDRICAL LEVER ARM LOCKSET.
3. EXISTING DOOR AND LOCKSET TO REMAIN. PROVIDE NEW CYLINDER WITH KEY SECTION MASTER-KEYED TO NEW KEY SYSTEM.
4. DOORS ARE WITHIN A WINDOW FRAME SYSTEM. SEE ELEVATIONS AND DETAILS FOR FURTHER INFORMATION.
5. SOUND CONTROL DOOR ASSEMBLY PER SPECIFICATION SECTION 08346. AT NEW OPENINGS, OVERSIZE OPENING 1/2" FOR FUTURE INSTALLATION.
6. HEAVY DUTY DOOR(S): 16 GAUGE HOLLOW METAL DOOR(S) WITH POLYURETHANCE CORE AT NON-RATED DOORS, POLYSTYRENE CORE AT RATED DOORS.
7. RELOCATED DOOR AND HARDWARE IN NEW FRAME FOR TEMPORARY USE.
8. REMOVE DOOR CLOSER AND PATCH ANCHOR HOLES IN HOLLOW METAL FRAME FOR PAINT.
9. NEW HARDWARE FOR EXISTING WOOD DOOR INCLUDING LOCKSET REPLACEMENT. SEE SPECIFICATIONS.
10. NEW HARDWARE FOR EXISTING HOLLOW METAL DOOR INCLUDING LOCKSET REPLACEMENT. SEE SPECIFICATIONS.
11. REMOVE FRAME MOUNTED ELECTROMAGNETIC HOLD OPEN DEVICE AND SAVE FOR REINSTALLATION ON NEW DOOR. REINSTALLELECTROMAGNETIC HOLDOPEN DEVICE ARM ON NEW DOOR. PATCH DOOR FRAME AT REMOVED DEADBOLT STRIKE OPENING.
12. PROVIDE NEW AT EXISTING LOCATION (AT NEW DOORS) OR REPLACE (AT EXISTING DOORS) DEADBOLT WITH THUMB-RETRACT ONLY DEADBOLT. SEE HARDWARE SCHEDULE.
13. PATCH DOOR FRAME AT REMOVED DEADBOLT STRIKE OPENING.
14. DOOR(S) TO HAVE ELECTRONIC ACCESS CONTROLS.
15. REMOVE FRAME MOUNTED ELECTROMAGNETIC HOLD OPEN DEVICE AND SALVAGE TO OWNER. PROVIDE NEW ELECTROMAGNETIC HOLDOPEN DEVICE ARM ON NEW DOOR. PATCH DOOR FRAME AT REMOVED DEADBOLT STRIKE OPENING.
16. PROVIDE ONE INCH (1") BETWEEN THE FLOOR AND UNDERSIDE OF DOOR FOR VENTILATION.
17. OVERHEAD COILING/SECTIONAL DOOR SYSTEM, SEE SPECIFICATIONS.
18. OVERHEAD COILING GRILLE SYSTEM. PROVIDE LOCK CYLINDER MATER KEYED TO NEW KEY SYSTEM. SEE SPECIFICATIONS
19. PROVIDE GALVANIZED DOOR FOR WET LOCATION
20. RELOCATED DOORS IN NEW ALUMINUM FRAME SYSTEM. FRAME SYSTEM TO ACCEPT EXISTING DOORS WITH NEW HARDWARE. SEE DOOR HARDWARE SPECIFICATIONS.
21. NEW DOOR AND FRAME IN EXISTING OPENING. FIELD VERIFY SIZE OF EXISTING OPENING FOR NEW DOOR AND FRAME.

ACOUSTICAL DESIGNATION DESCRIPTIONS

1. ALL GASKETED DOORS TO BE SOLID CORE WOOD OR MINERAL FIBER FILLED 16 GAUGE HOLLOW METAL DOOR. FRAMES FULLY GROUT FILLED AT MASONRY WALLS AND STUFFED WITH GLASS FIBER AT STUD WALLS.
2. **D1 DESIGNATION: BASIC GASKETED DOOR**
   A. 1-3/4" THICK DOOR, (2) SETS OF SELF ADHESIVE BUBBLE TYPE GASKETS AT JAMBS AND HEAD. DOOR BOTTOM BUBBLE GASKET AND RAISED THRESHOLD. ADJUSTABLE ASTRAGAL GASKET FOR DOUBLE DOORS.
3. **D2 DESIGNATION: HEAVILY GASKETED DOOR**
   A. 2-1/4" THICK DOOR. FRAME APPLIED ADJUSTABLE GASKETS AT HEAD AND JAMBS. NEOPRENE SURFACE MOUNTED SWEEP SEAL AT DOOR BOTTOM WITH MINERAL WOOL. OVERLAPPING ASTRAGAL GASKET FOR DOUBLE DOORS.
4. **D3 DESIGNATION: GASKETED DOOR, NO RAISED THRESHOLD**
   A. 2-1/4" THICK DOOR, 1 SET OF SELF ADHESIVE BUBBLE GASKETS AT JAMBS AND HEAD. KERF FRAME FILLED WITH FELT STRIPS. NEOPRENE SURFACE MOUNTED SWEEP SEAL AT DOOR BOTTOM. FILL RECESS AT DOOR BOTTOM WITH MINERAL WOOL. CAM-LIFT HINGES. ADJUSTABLE ASTRAGAL GASKET.
5. **D4 DESIGNATION: NON-LATCHING**
   A. 2-1/4" THICK DOOR. 1 SET OF SELF ADHESIVE BUBBLE GASKETS AT JAMBS AND HEAD. KERF FRAME FILLED WITH FELT STRIPS. ROUTED "SOUND TRAP" DETAIL (INSERT STRIP OF 1"X1" GLASS FIBER, COVER WITH PERF METAL) AT DOOR BOTTOM AND ASTRAGAL.

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
34	ISSUED FOR 75% CONSTRUCTION DOCUMENTS - PHASE C	10.14.2019
	ISSUED FOR DESIGN DEVELOPMENT	07.12.2019

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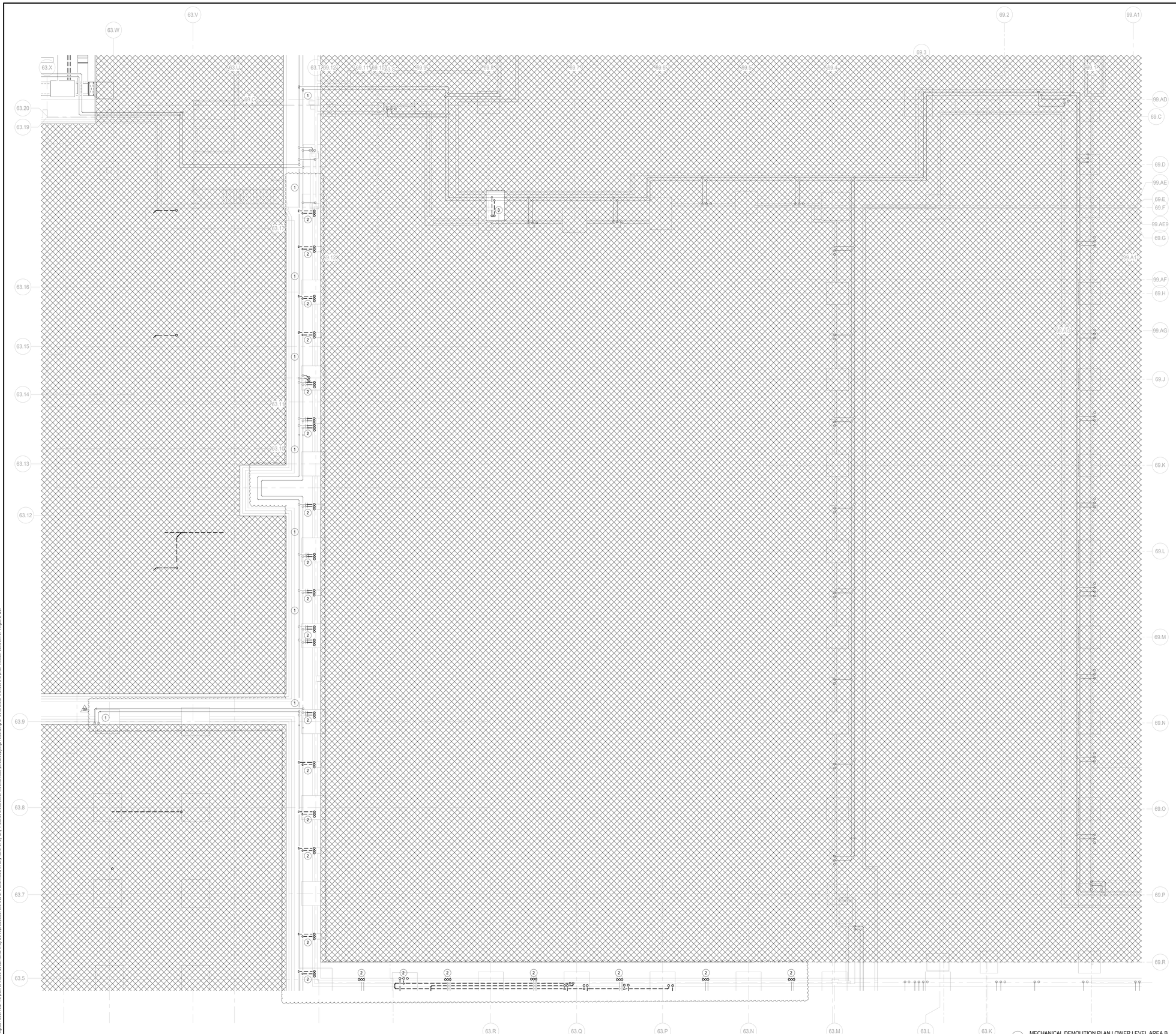
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

DOOR & WINDOW SCHEDULES & DETAILS - PHASE C

Project Number: 5274-42
Drawn By: Author
Sheet:

**A8.



#	KEYNOTES
1	EXISTING DUAL TEMP PIPING TO REMAIN.
2	DEMO EXISTING DUAL TEMP S/R AND CONDENSATE PIPING RISER AND CAP BACK AT VALVE.
3	DEMO EXISTING DUAL TEMP S/R PIPING SHOWN DAHSED.

1 MECHANICAL DEMOLITION PLAN LOWER LEVEL AREA B
SCALE: 1/8" = 1'-0"

DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

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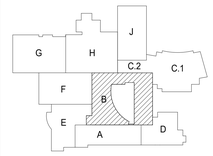

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REV		DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUE	

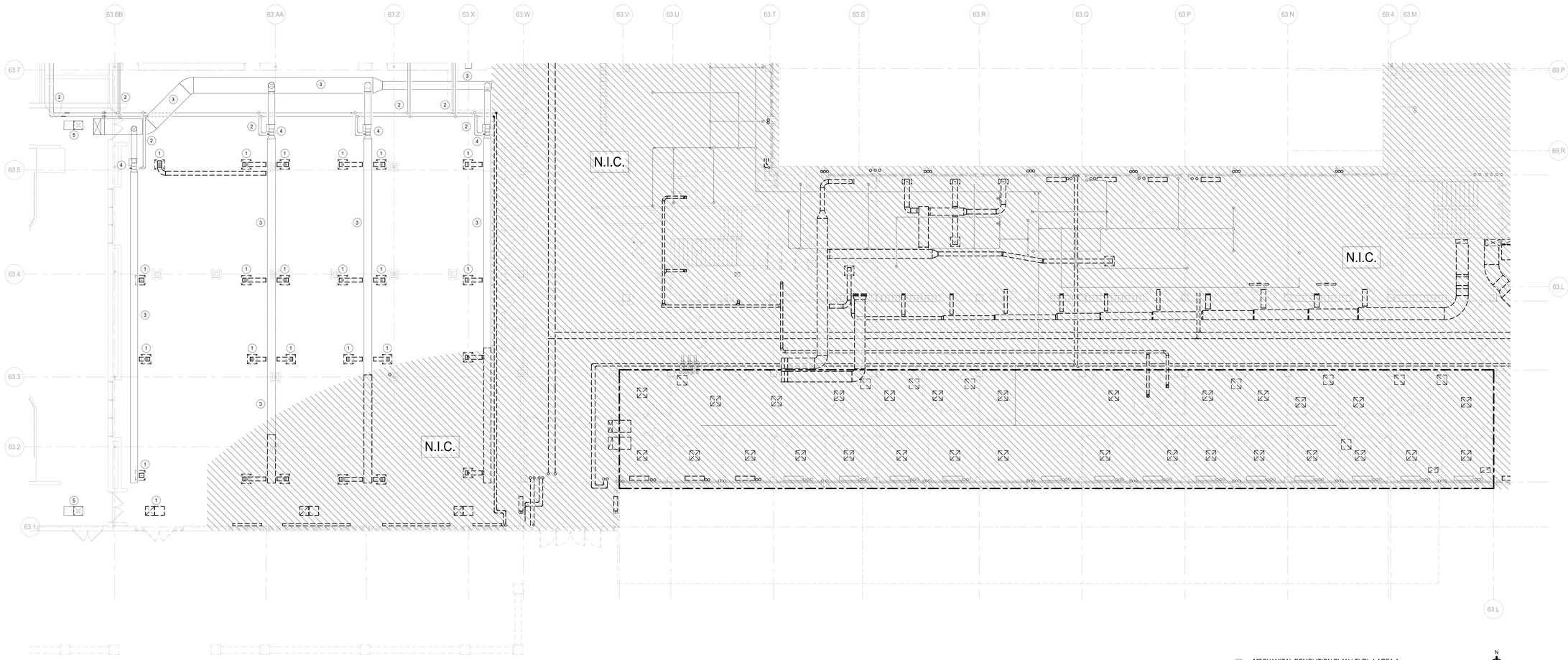
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

MECHANICAL DEMOLITION PLAN LOWER LEVEL AREA B

Project Number:
5274-42
Drawn By:
Author
Sheet:
MD2.00B.c

#	KEY NOTES
1	EXISTING SUPPLY/RETURN GRILLES TO BE DEMOLISHED. DEMOLISH ASSOCIATED DUCTWORK AND ACCESORIES.
2	EXISTING DUAL TEMPERATURE PIPING TO REMAIN.
3	EXISTING DUCTWORK TO REMAIN.
4	EXISTING VAV BOX TO REMAIN.
5	EXISTING GRILLE AND ASSOCIATED DUCTWORK TO REMAIN.



1 MECHANICAL DEMOLITION PLAN LEVEL 1 AREA A
SCALE: 1/8" = 1'-0"

DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

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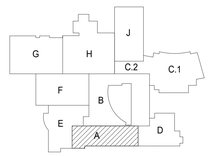

NORTH

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REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019

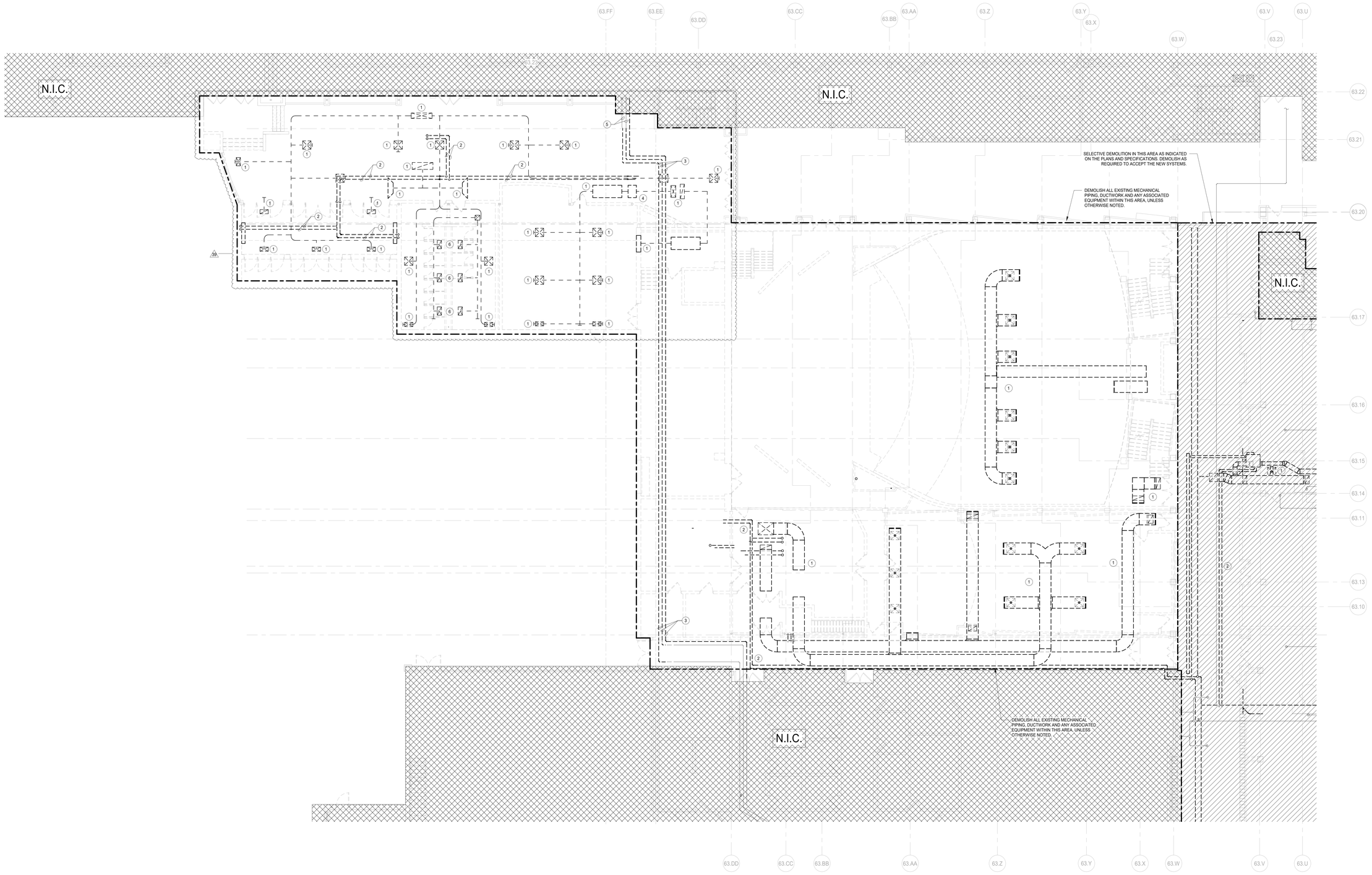
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

MECHANICAL DEMOLITION PLAN LEVEL 1 AREA C

Project Number: 5274-42
Drawn By: Author
Sheet: MD2.01A.c

#	KEY NOTES
1	DEMOLISH EXISTING DUCTWORK, ASSOCIATED DIFFUSERS, EQUIPMENT AND ACCESSORIES.
2	DEMOLISH EXISTING PIPING, ASSOCIATED EQUIPMENT AND ACCESSORIES.
3	DEMOLISH EXISTING DTWS/R PIPING AND NATURAL GAS PIPING, SHOWN AS DASHED. CAP DTWS/R PIPING AT POINT INDICATED AND PREPARE NATURAL GAS PIPING FOR NEW CONNECTION. SEE NEW WORK PLANS.
4	DEMOLISH EXISTING HEATING COIL AND ASSOCIATED PIPING.
5	EXISTING DUAL TEMPERATURE PIPING TO REMAIN. PREPARE FOR NEW CONNECTION.
6	DEMOLISH EXISTING EXHAUST DUCTWORK, ASSOCIATED GRILLES, EQUIPMENT AND ACCESSORIES.



1 MECHANICAL DEMOLITION PLAN LEVEL 1 AREA F
SCALE: 1/8" = 1'-0"

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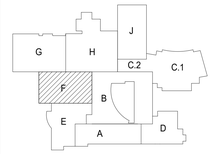


NORTH

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019
	ISSUED FOR 100% DD	07.12.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

MECHANICAL DEMOLITION PLAN LEVEL 2 AREA F

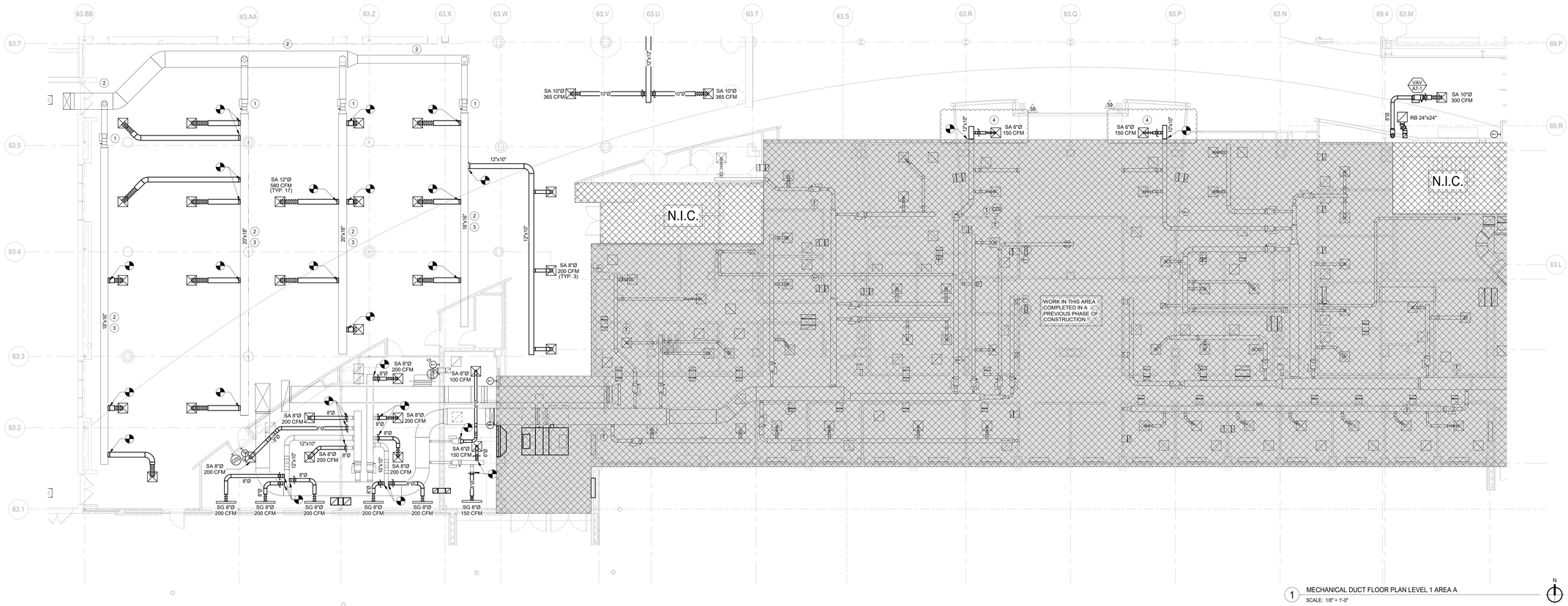
Project Number:
5274-42
Drawn By:
Author
Sheet:

MD2.01F.c

GENERAL NOTES:

1. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITION AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
2. MEPFP INSTALLING CONTRACTOR(S) SHALL SUBMIT EXISTING ELEVATED FLOOR PLANS INDICATING ALL MEPFP FLOOR PENETRATION SIZES AND LOCATIONS FOR EOR APPROVAL. EOR APPROVAL IS REQUIRED PRIOR TO THE START OF CORING ACTIVITIES. COORDINATE THE TIMING OF THE SUBMITTAL ACCORDINGLY. LOCATE AND AVOID DAMAGE TO REINFORCEMENT.

#	KEY NOTES
1	EXISTING VAV TO REMAIN. REBALANCE EXISTING VAV AS PER THE CFM SHOWN ON THE PLANS.
2	EXISTING DUCTWORK TO REMAIN.
3	EXISTING DUCTWORK SIZE SHOWN FOR INFO PURPOSES ONLY. VERIFY SIZE PRIOR TO WORK.
4	REBALANCE THE VAV BOX.



1 MECHANICAL DUCT FLOOR PLAN LEVEL 1 AREA A
SCALE: 1/8" = 1'-0"

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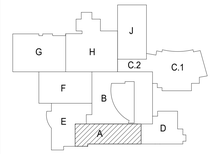

NORTH

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REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

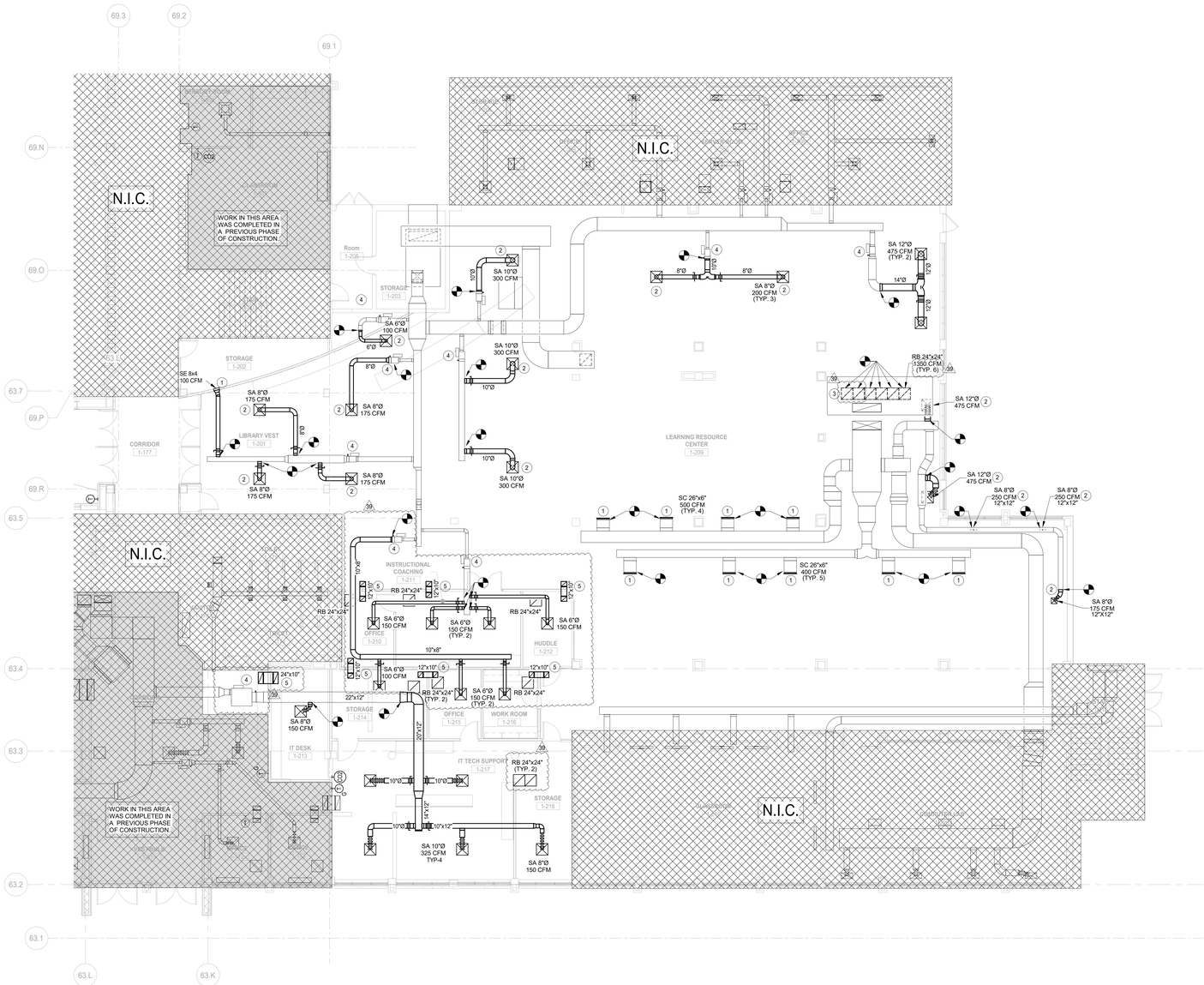
MECHANICAL DUCT FLOOR PLAN LEVEL 1 AREA A

Project Number:
5274-42
Drawn By:
Author
Sheet:
M2.01A.c

GENERAL NOTES:

1. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITION AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
2. MEPFP INSTALLING CONTRACTOR(S) SHALL SUBMIT EXISTING ELEVATED FLOOR PLANS INDICATING ALL MEPFP FLOOR PENETRATION SIZES AND LOCATIONS FOR EOR APPROVAL. EOR APPROVAL IS REQUIRED PRIOR TO THE START OF CORING ACTIVITIES. COORDINATE THE TIMING OF THE SUBMITTAL ACCORDINGLY. LOCATE AND AVOID DAMAGE TO REINFORCEMENT.

#	KEY NOTES
1	PROVIDE NEW SUPPLY AIR WALL DIFFUSER. CONNECT TO EXISITNG DUCTWORK.
2	PROVIDE NEW SUPPLY AIR DIFFUSER. CONNECT TO EXISITNG DUCTWORK.
3	PROVIDE NEW RETURN AIR DIFFUSER. CONNECT TO EXISITNG PLENUM BOX.
4	BALANCE EXISTING FPB/VAV BOX TO CFM INDICATED ON PLANS.
5	TRANSFER DUCT TO BE LOCATED ABOVE ADJACENT CEILINGS. LINE DUCT W/ 1" ACOUSTICAL LINER.



1 MECHANICAL DUCT FLOOR PLAN LEVEL 1 AREA D
SCALE: 1/8" = 1'-0"

N

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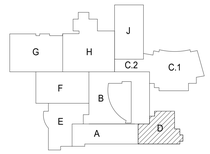

NORTH

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REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019
	ISSUED FOR 100% DD	07.12.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

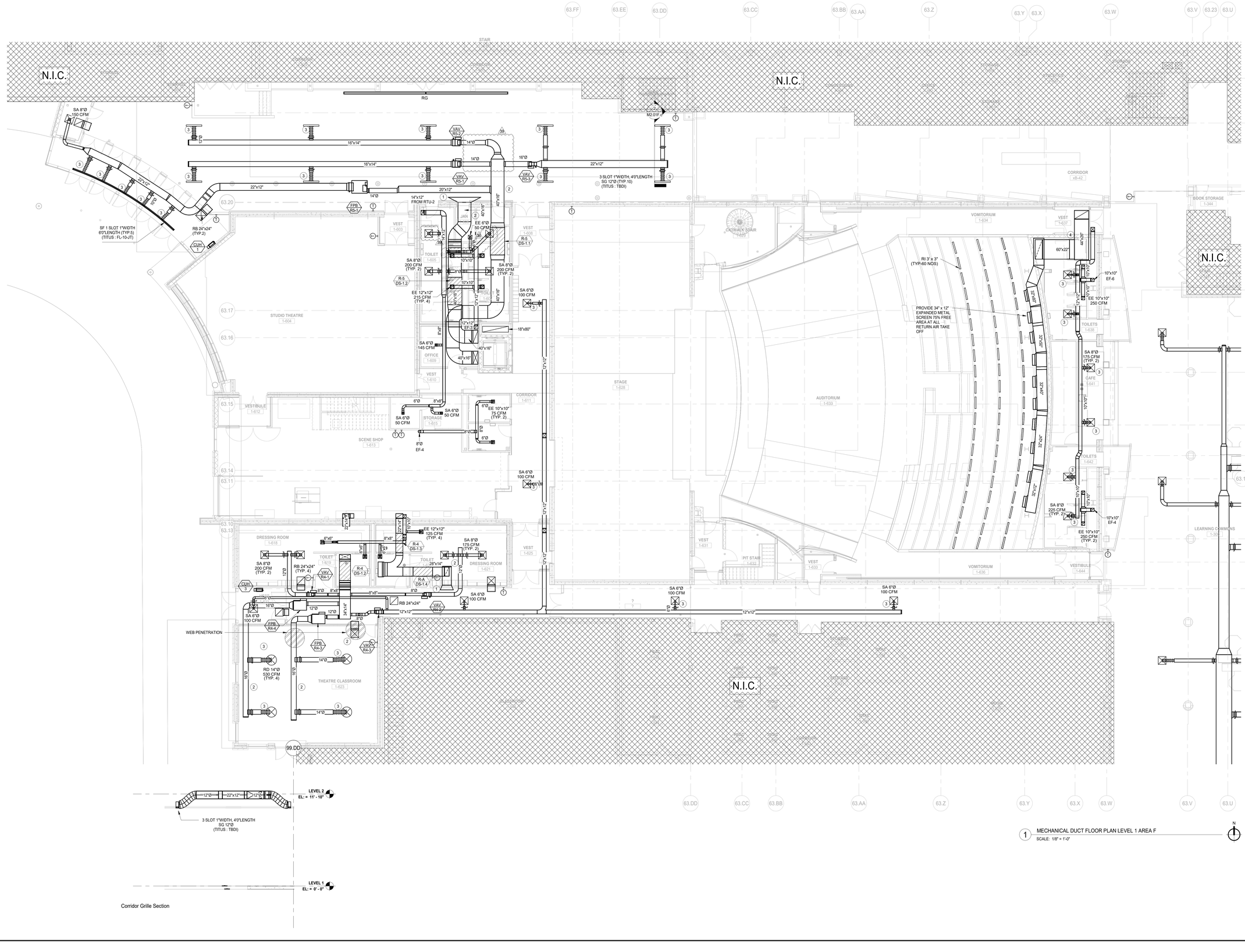
MECHANICAL DUCT FLOOR PLAN LEVEL 1 AREA D

Project Number:
5274-42
Drawn By:
Author
Sheet:
M2.01D.c

GENERAL NOTES:

1. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITION AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
2. REFER TO SPECIFICATION SECTION 079200 FOR ACOUSTICAL SEALANT REQUIREMENTS OR PENETRATIONS OF ACOUSTICALLY SENSITIVE AND ACOUSTICALLY CRITICAL WALLS AND PARTITIONS.
3. REFER TO SPECIFICATION SECTION 233355 FOR DUCT & PIPE LAGGING REQUIREMENTS FOR MECHANICAL SCOPE.
4. MEPFP INSTALLING CONTRACTOR(S) SHALL SUBMIT EXISTING ELEVATED FLOOR PLANS INDICATING ALL MEPFP FLOOR PENETRATION SIZES AND LOCATIONS FOR EOR APPROVAL. EOR APPROVAL IS REQUIRED PRIOR TO THE START OF CORING ACTIVITIES. COORDINATE THE TIMING OF THE SUBMITTAL ACCORDINGLY. LOCATE AND AVOID DAMAGE TO REINFORCEMENT.

#	KEY NOTES
1	PROVIDE EXPANDED METAL SCREEN 75% FREE AREA SIZED AT 600FPM MAX.
2	PROVIDE ACOUSTIC DUCT LINER IN ALL SUPPLY DUCT AND TRANSFER RETURN DUCTS
3	PROVIDE 5 FEET FLEXIBLE DUCT.
4	PROVIDE TURNING VANES IN 90° ELBOW



Corridor Grille Section

1 MECHANICAL DUCT FLOOR PLAN LEVEL 1 AREA F
SCALE: 1/8" = 1'-0"

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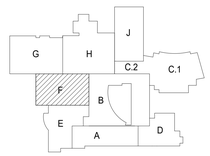


NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019
	ISSUED FOR 100% DD	07.12.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

MECHANICAL DUCT FLOOR PLAN LEVEL 1 AREA F

Project Number:
5274-42
Drawn By:
Author
Sheet:

M2.01F.c

GENERAL NOTES:

1. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITION AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
2. MEPFP INSTALLING CONTRACTOR(S) SHALL SUBMIT EXISTING ELEVATED FLOOR PLANS INDICATING ALL MEPFP FLOOR PENETRATION SIZES AND LOCATIONS FOR EOR APPROVAL. EOR APPROVAL IS REQUIRED PRIOR TO THE START OF CORING ACTIVITIES. COORDINATE THE TIMING OF THE SUBMITTAL ACCORDINGLY. LOCATE AND AVOID DAMAGE TO REINFORCEMENT.

#	KEY NOTES
1	PROVIDE 5 FEET FLEXIBLE DUCT.

N.I.C.

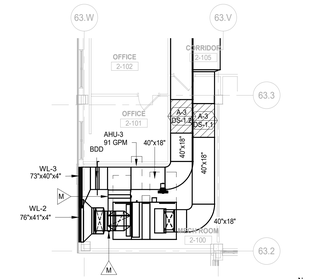
N.I.C.

N.I.C.

N.I.C.

WORK IN THIS AREA WAS COMPLETED IN A PREVIOUS PHASE OF CONSTRUCTION.

1 MECHANICAL DUCT FLOOR PLAN LEVEL 2 AREA B
SCALE: 1/8" = 1'-0"



2 MECHANICAL ROOM PLAN LEVEL 2
SCALE: 1/8" = 1'-0"

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019
	ISSUED FOR 100% DD	07.12.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

MECHANICAL DUCT FLOOR PLAN LEVEL 2 AREA B

Project Number:
5274-42
Drawn By:
Author
Sheet:
M2.02B.c

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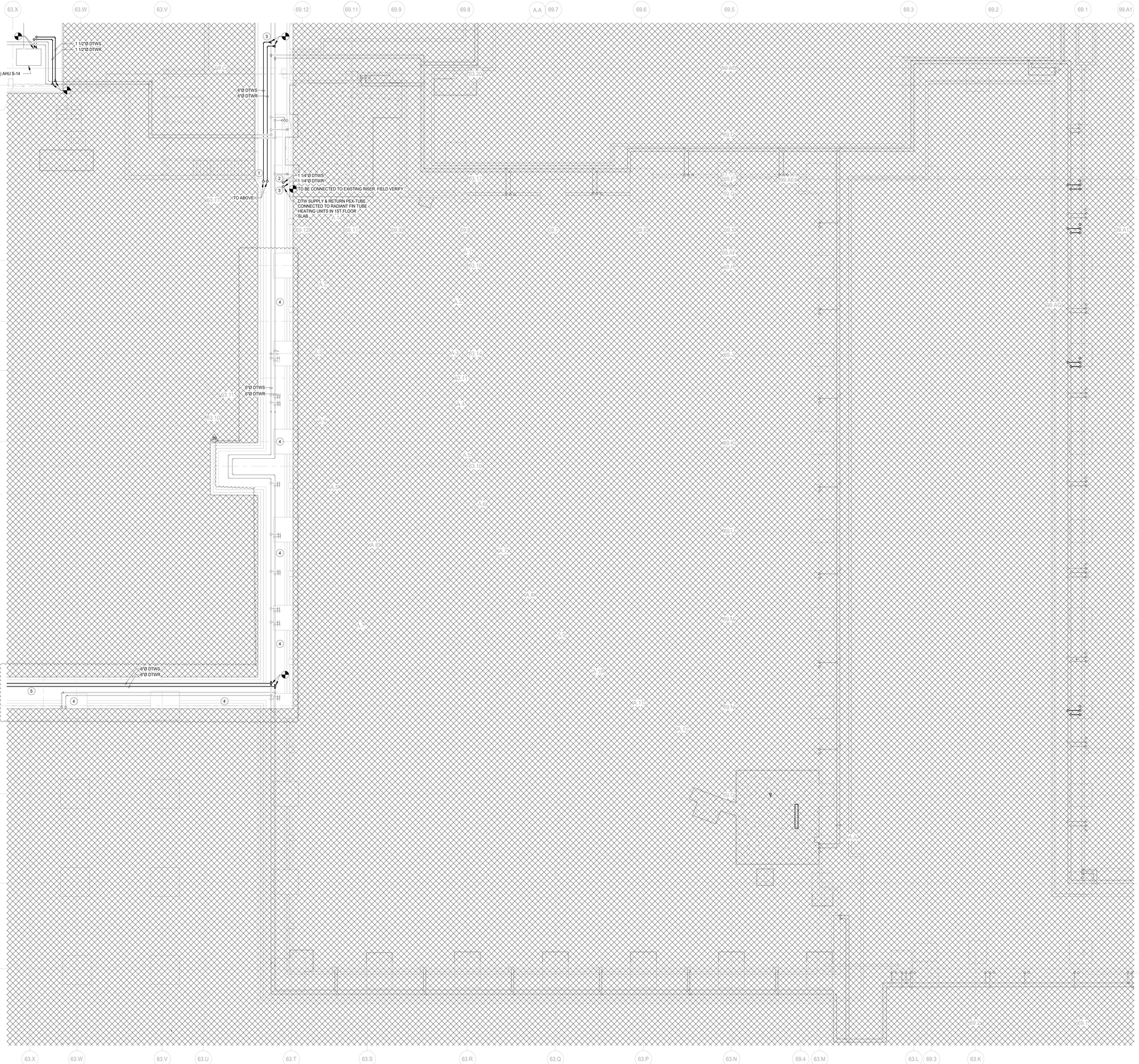
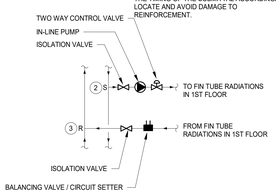


1 MECHANICAL PIPE FLOOR PLAN LOWER LEVEL AREA B
SCALE: 1/8" = 1'-0"

#	KEY NOTES
1	DTWS/R RISERS TO 2ND & 3RD FLOORS ABOVE.
2	TO FIN TUBE RADIATIONS IN 1ST FLOOR. PROVIDE ISOLATION VALVE, IN-LINE PUMP & 2-WAY CONTROL VALVE IN PIPE RISER.
3	FROM FIN TUBE RADIATIONS IN 1ST FLOOR. PROVIDE ISOLATION VALVE & BALANCING VALVE/CIRCUIT SETTER IN PIPE RISER.
4	EXISTING DUAL TEMP PIPING TO REMAIN.
5	6" DUAL TEMP PIPING TO BE INSTALLED TO TEMPORARILY SERVE THE UNITS LOCATED IN THE CAFETERIA AREA. PIPING TO BE DEMOLISHED AND REMOVED ONCE FINAL PIPE ROUTING IS COMPLETE. REFER TO LEVEL 1 PLANS FOR FINAL ROUTING.

GENERAL NOTES:

1. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITION AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
2. MEPFP INSTALLING CONTRACTOR(S) SHALL SUBMIT EXISTING ELEVATED FLOOR PLANS INDICATING ALL MEPFP FLOOR PENETRATION SIZES AND LOCATIONS FOR EOR APPROVAL. EOR APPROVAL IS REQUIRED PRIOR TO THE START OF CORING ACTIVITIES. COORDINATE THE TIMING OF THE SUBMITTAL ACCORDINGLY. LOCATE AND AVOID DAMAGE TO REINFORCEMENT.



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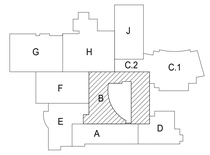

NORTH

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
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MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

MECHANICAL PIPE FLOOR PLAN LOWER LEVEL AREA B

Project Number:
5274-42
Drawn By:
Author
Sheet:
M3.00B.c

GENERAL NOTES:

1. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITION AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
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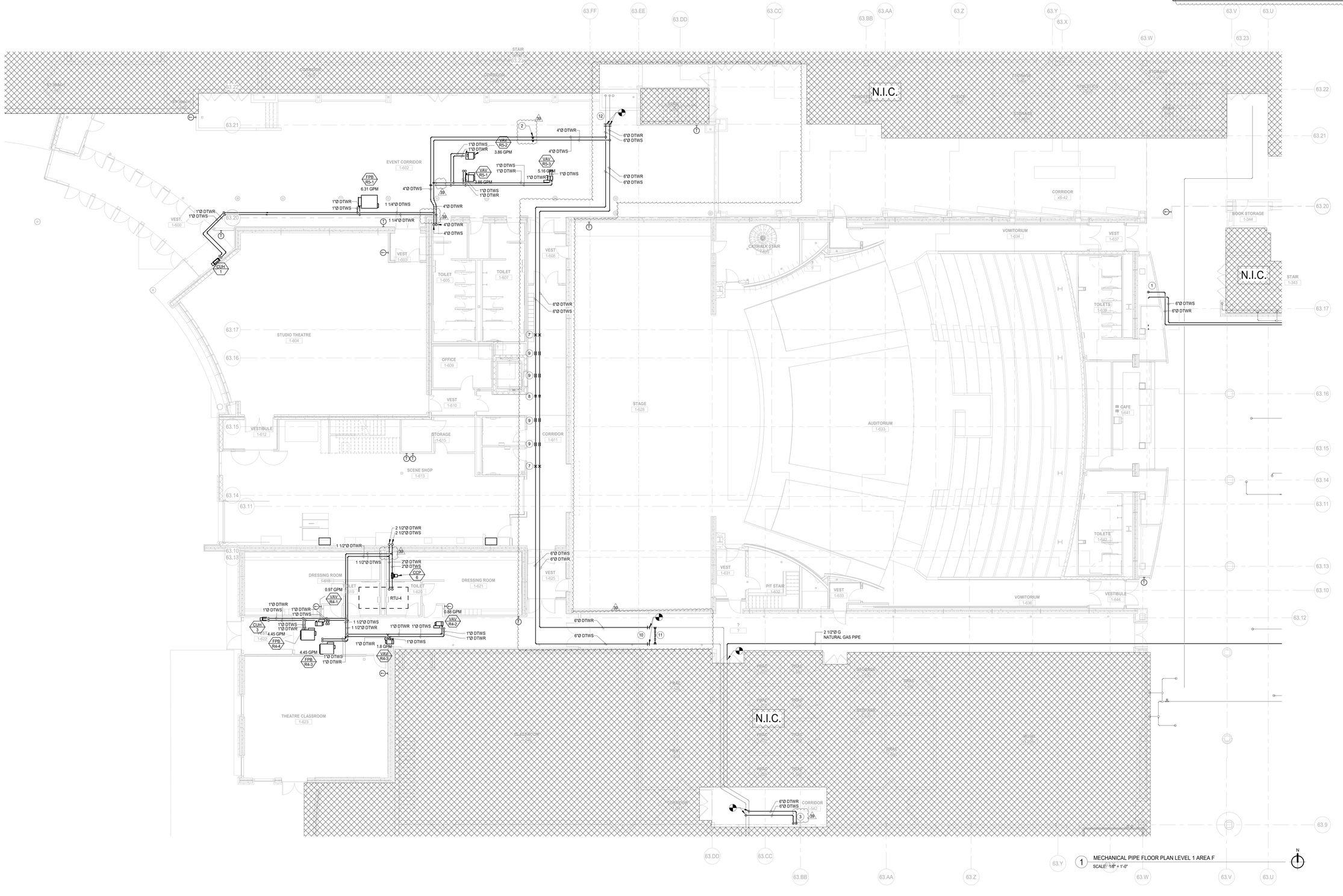
#	KEY NOTES
1	COORDINATE DTP SUPPLY & RETURN IN SHAFT WITH OTHER TRADES
2	PROVIDE 2-WAY CONTROL VALVE FOR WINTER/SUMMER CHANGEOVER.
3	6" DUAL TEMP PIPING TO BE INSTALLED TO TEMPORARILY SERVE THE UNITS LOCATED IN THE CAFETERIA AREA. PIPING TO BE DEMOLISHED AND REMOVED ~~ONCE FINAL PIPE ROUTING IS COMPLETE~~.
7	PIPE ANCHORS. PLACEMENT/SELEECTION OF ANCHORS IS TO BE A DELEGATED DESIGN. PROVIDE CALCULATION DURING SHOP DRAWINGS PHASE.
8	EXPANSION BELLOWS. SIZING OF BELLOWS IS TO BE A DELEGATED DESIGN. PROVIDE CALCULATION DURING SHOP DRAWINGS PHASE.
9	PIPE GUIDES. PLACEMENT/SELEECTION OF GUIDES IS TO BE A DELEGATED DESIGN. PROVIDE CALCULATION DURING SHOP DRAWINGS PHASE.
10	MAKE NEW CONNECTION TO THE DUAL TEMPERATURE SUPPLY AND RETURN. THIS IS TO BE THE FINAL ROUTING. DEMOLISH TEMPORARY ROUTING AFTER INSTALLATION.
11	INSTALL BY-PASS WITH MANUAL BALANCING VALVE AND SHUT-OFF VALVES. BY-PASS TO BE USED DURING THE TEMPORARY PIPING PHASE. CLOSE SHUT-OFF VALVES WHEN FINAL ROUTING FOR THE DUAL TEMPERATURE PIPING IS IN PLACE.
12	EXISTING DUAL TEMP PIPING TO REMAIN. CONNECT TO NEW PIPING AS SHOWN.



1 MECHANICAL PIPE FLOOR PLAN LEVEL 1 AREA F
SCALE: 1/8" = 1'-0"

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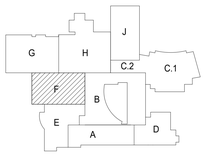

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REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
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MFP IMPLEMENTATION - SOUTH

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MECHANICAL PIPE FLOOR PLAN LEVEL 1 AREA F

Project Number:
5274-42
Drawn By:
Author
Sheet:
M3.01F.c

KEY NOTES

#	
1	CONNECT CONDENSATE DRAIN TO PLUMBING SYSTEM
2	PROVIDE ISOLATION VALVE.
3	2-WAY CONTROL VALVE FOR VAV REHEAT TO BE PROVIDED MY TC CONTRACTOR. VALVE TO BE USED FOR SUMMER/WINTER SWITCHOVER. VALVE TO BE CLOSED DURING SUMMER WHEN DUAL TEMP PIPING IS BEING UTILIZED FOR CHILLED WATER
39, 4	PROVIDE 3-WAY VALVE.
5	PIPE ANCHORS. PLACEMENT/SELEECTION OF ANCHORS IS TO BE A DELEGATED DESIGN. PROVIDE CALCULATION DURING SHOP DRAWINGS PHASE.
6	PIPE GUIDES. PLACEMENT/SELEECTION OF GUIDES IS IS TO BE A DELEGATED DESIGN. PROVIDE CALCULATION DURING SHOP DRAWINGS PHASE.
7	EXPANSION BELLOWS. SIZING OF BELLOWS IS TO BE A DELEGATED DESIGN. PROVIDE CALCULATION DURING SHOP DRAWINGS PHASE.
8	2-WAY CONTROL VALVE FOR SUMMER/WINTER SWITCHOVER.

GENERAL NOTES:

1. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITION AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
2. MEPPP INSTALLING CONTRACTOR(S) SHALL SUBMIT EXISTING ELEVATED FLOOR PLANS INDICATING ALL MEPFP FLOOR PENETRATION SIZES AND LOCATIONS FOR EOR APPROVAL. EOR APPROVAL IS REQUIRED PRIOR TO THE START OF CORING ACTIVITIES. COORDINATE THE TIMING OF THE SUBMITTAL ACCORDINGLY. LOCATE AND AVOID DAMAGE TO REINFORCEMENT.

N.I.C.

N.I.C.

N.I.C.

CONDENSATE DRAIN TO BE CONNECTED TO PLUMBING SYSTEM. REFER TO THE PLUMBING DRAWING FOR COORDINATION.

2 MECHANICAL DUCT FLOOR PLAN LEVEL 2 AREA B
SCALE: 1/8" = 1'-0"

1 MECHANICAL PIPE FLOOR PLAN LEVEL 2 AREA B
SCALE: 1/8" = 1'-0"

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	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019
	ISSUED FOR 100% DD	07.12.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

MECHANICAL PIPE FLOOR PLAN LEVEL 2 AREA B

Project Number:
5274-42
Drawn By:
Author
Sheet:
M3.02B.c

GENERAL NOTES:

1. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITION AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
2. MEPFP INSTALLING CONTRACTOR(S) SHALL SUBMIT EXISTING ELEVATED FLOOR PLANS INDICATING ALL MEPFP FLOOR PENETRATION SIZES AND LOCATIONS FOR EOR APPROVAL. EOR APPROVAL IS REQUIRED PRIOR TO THE START OF CORING ACTIVITIES. COORDINATE THE TIMING OF THE SUBMITTAL ACCORDINGLY. LOCATE AND AVOID DAMAGE TO REINFORCEMENT.

#	KEY NOTES
1	COORDINATE THE LOCATION OF HOSE REEL & WALL PORT WITH ARCH AND RUN THE PIPE TO CEILING
2	CONDENSATE DRAIN TO BE CONNECTED TO NEAREST JANITOR'S CLOSET.
3	PROVIDE AIR VENT AT HIGHEST POINT OF LOOP.
4	PROVIDE 2-WAY CONTROL VALVE FOR WINTER/SUMMER CHANGEOVER.
5	PROVIDE 3"Ø DTWS/R PIPE HEADER & 2"Ø BRANCH PIPES TO SERVE RTU-3A & 3B.
6	PIPE GUIDES: PLACEMENT/SELEECTION OF GUIDES IS TO BE A DELEGATED DESIGN. PROVIDE CALCULATION DURING SHOP DRAWINGS PHASE.
7	EXPANSION BELLOWS: SIZING OF BELLOWS IS TO BE A DELEGATED DESIGN. PROVIDE CALCULATION DURING SHOP DRAWINGS PHASE.
8	PIPE ANCHORS. PLACEMENT/SELEECTION OF ANCHORS IS TO BE A DELEGATED DESIGN. PROVIDE CALCULATION DURING SHOP DRAWINGS PHASE.
9	2-WAY CONTROL VALVE FOR VAV REHEAT TO BE PROVIDED MY TC CONTRACTOR. VALVE TO BE USED FOR SUMMER/WINTER SWITCHOVER. VALVE TO BE CLOSED DURING SUMMER WHEN DUAL TEMP PIPING IS BEING UTILIZED FOR CHILLED WATER.

1 MECHANICAL PIPE FLOOR PLAN LEVEL 2 AREA F
SCALE: 1/8" = 1'-0"

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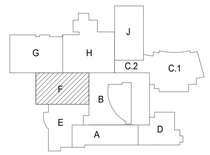


NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019
	ISSUED FOR 100% DD	07.12.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

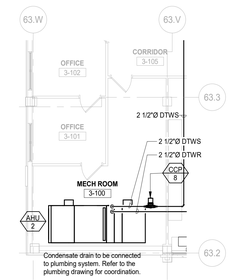
MECHANICAL PIPE FLOOR PLAN LEVEL 2 AREA F

Project Number:
5274-42
Drawn By:
Author
Sheet:
M3.02F.c

GENERAL NOTES:

1. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITION AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS. MEP/FP INSTALLING CONTRACTOR(S) SHALL SUBMIT EXISTING ELEVATED FLOOR PLANS INDICATING ALL MEP/FP FLOOR PENETRATION SIZES AND LOCATIONS FOR EOR APPROVAL. EOR APPROVAL IS REQUIRED PRIOR TO THE START OF CORING ACTIVITIES. COORDINATE THE TIMING OF THE SUBMITTAL ACCORDINGLY. LOCATE AND AVOID DAMAGE TO REINFORCEMENT.

#	KEY NOTES
1	EXISTING DUCT HEATING COIL.
2	PROVIDE 2-WAY CONTROL VALVE FOR WINTER/SUMMER CHANGEOVER.
3	PROVIDE AIR VENT AT HIGHEST POINT OF LOOP.
4	PROVIDE 3-WAY VALVE.
5	PIPE ANCHORS. PLACEMENT/SELEECTION OF ANCHORS IS TO BE A DELEGATED DESIGN. PROVIDE CALCULATION DURING SHOP DRAWINGS PHASE.
6	PIPE GUIDES. PLACEMENT/SELEECTION OF GUIDES IS TO BE A DELEGATED DESIGN. PROVIDE CALCULATION DURING SHOP DRAWINGS PHASE.
7	EXPANSION BELLOWS. SIZING OF BELLOWS IS TO BE A DELEGATED DESIGN. PROVIDE CALCULATION DURING SHOP DRAWINGS PHASE.
8	2-WAY CONTROL VALVE FOR VAV REHEAT TO BE PROVIDED MY TC CONTRACTOR. VALVE TO BE USED FOR SUMMER/WINTER SWITCHOVER. VALVE TO BE CLOSED DURING SUMMER WHEN DUAL TEMP PIPING IS BEING UTILIZED FOR CHILLED WATER.



2 MECHANICAL ROOM PLAN LEVEL 3
SCALE: 1/8" = 1'-0"

1 MECHANICAL PIPE FLOOR PLAN LEVEL 3 AREA B
SCALE: 1/8" = 1'-0"

DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

Wight

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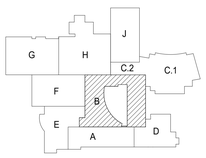

NORTH

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
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	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019
	ISSUED FOR 100% DD	07.12.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

MECHANICAL PIPE FLOOR PLAN LEVEL 3 AREA B

Project Number:
5274-42
Drawn By:
Author
Sheet:

M3.03B.c

COIL CIRCULATING PUMP SCHEDULE

EQUIPMENT TAG	SERVICE	SERVED AREA	MANUFACTURER	MODEL	TYPE	GPM	HEAD (FT)	IMP. DIA. (IN)	RPM	MOTOR		NOTES
										HP	V / PH / HZ	
CCP-1	AHU-1, HOT WATER COIL	LEARNING COMMONS	B&G	E-90 ECM 1.25 AAB	IN-LINE	63	15	5	1750	1/2	120 / 1 / 60	1
CCP-2	RTU-1, HOT WATER COIL	STAGE	B&G	E-90 ECM 1.25 AAB	IN-LINE	36	15	5	1366	1/3	120 / 1 / 60	1
CCP-3	RTU-3A, HOT WATER COIL	AUDITORIUM	B&G	E-90 ECM 1.25 AAB	IN-LINE	48	15	5	1519	1/3	120 / 1 / 60	1
CCP-4	RTU-3B, HOT WATER COIL	AUDITORIUM	B&G	E-90 ECM 1.25 AAB	IN-LINE	48	15	5	1519	1/3	120 / 1 / 60	1
CCP-5	RTU-2, HOT WATER COIL	STUDIO THEATRE	B&G	E-90 ECM 1.25 AAB	IN-LINE	45	15	5	1481	1/3	120 / 1 / 60	1
CCP-6	RTU-4, HOT WATER COIL	SCENE SHOP/THEATRE CLASS ROOMS	B&G	E-90 ECM 1.25 AAB	IN-LINE	33	15	5	1335	1/3	120 / 1 / 60	1
CCP-7	RTU-5, HOT WATER COIL	EVENT LOBBY	B&G	E-90 ECM 1.25 AAB	IN-LINE	33	15	5	1335	1/3	120 / 1 / 60	1
CCP-8	AHU-2, HOT WATER COIL	3RD FLOOR -CLASS ROOMS	B&G	E-90 ECM 1.25 AAB	IN-LINE	38	15	5	1366	1/3	120 / 1 / 60	1
CCP-9	AHU-3, HOT WATER COIL	2ND FLOOR -CHEM LABS	B&G	E-90 ECM 1.25 AAB	IN-LINE	63	15	5	1750	1/2	120 / 1 / 60	1
CCP-10	AHU-4, HOT WATER COIL	2ND FLOOR -BIO LABS	B&G	E-90 ECM 1.25 AAB	IN-LINE	46	15	5	1494	1/4	120 / 1 / 60	1
CCP-11	AHU-5, HOT WATER COIL	CORRIDOR -LEARNING COMMONS	B&G	E-90 ECM 1.25 AAB	IN-LINE	43	15	5	1454	1/4	120 / 1 / 60	1
CCP-12	AHU-6, HOT WATER COIL	NORTH STUDY LOFTS/OFFICES	B&G	E-90 ECM 1.25 AAB	IN-LINE	23	15	5	1254	1/8	120 / 1 / 60	1
CCP-13	AHU-7, HOT WATER COIL	SOUTH STUDY LOFTS & COMMONS SMALL GROUP ROOMS	B&G	E-90 ECM 1.25 AAB	IN-LINE	15	15	5	1210	1/8	120 / 1 / 60	1
CCP-14	FAN ASSISTED RADIANT HEATING @ TUNNEL	LEARNING COMMONS- CURTAIN WALL	B&G	PL - 30	IN-LINE	15	15	-	2650	1/12	120 / 1 / 60	1

NOTES:

1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. PROVIDE VIBRATION ISOLATION HANGERS.

AIR HANDLING UNIT SCHEDULE

EQUIPMENT TAG	AREA SERVED	CFM	OA CFM	AIR FLOW CONFIGURATION	DUAL TEMPERATURE COIL/2 -PIPE CHANGEOVER COIL														ESP (IN)	TSP (IN)	SUPPLY FAN					EXHAUST FAN					ELECTRICAL				DIMENSIONS (IN.) LxWxH	WEIGHT (LBS)	MANUFACTURER	MODEL #	NOTES
				SUPPLY & RETURN	COOLING								HEATING								RPM	BHP	QTY.	MCA	MOCP	RPM	BHP	QTY.	MCA	MOCP	FLA	MCA	MOP	V / PH / HZ				
					COIL ROWS	EWT (°F)	LWT (°F)	EAT (°F) DB / WB	LAT (° F) DB / WB	GPM	MAX. PD. (FT.)	CAP (MBH)	SENS (MBH)	EWT (° F)	LWT (° F)	EAT (° F)	LAT (° F)	GPM	MAX. PD. (FT.)	CAP (MBH)																		
AHU-2/ERV	3RD FLOOR CLASS RMS	6000	3119	VERTICAL.-Indoor AHU w/ERV	6	45	55	78/66	55/54	38.46	4.08	193	153	110	90	45	96	33	2.81	330	2.27	4.09	2315	6.5	1	13.75	20	1474	1.756	1	6	15	-	-	-	480 / 3 / 60	174x67x84	3357	TRANE	CSAA018	1-12
AHU-3	2ND FLOOR CHEM LABS	5750	5750	VERTICAL.-Indoor AHU	6	45	55	95/74	55/54	75	5.9	373	255	110	90	-10	96	80	6.25	800	2	4.9	2164	6.43	1	9.24	15	-	-	-	-	-	7.39	9.24	15	480 / 3 / 60	114X67X45	1750	TRANE	CSAA012	1-12
AHU-4	2ND FLOOR BIO LABS	3500	3500	VERTICAL	6	45	55	95/74	55/54	46	9.7	229	156	110	94	-10	99	46	9.3	376	1.5	3.4	2502	5 HP	1	-	-	-	-	-	-	8.42	10.47	15	480 / 3 / 60	138X51X42	2000	TRANE	UCCA08	1-12
AHU-5	CORRIDOR LEARNING COMMONS	8200	2250	VERTICAL	6	45	55	80/66	55/54	58	6.49	290	226	110	90	48	96	42.8	3.42	427	1.9	4.4	2452	8.85	2	-	-	2009	3.8	2	-	-	29.2	31.03	35	480 / 3 / 60	220X72X56	4400	TRANE	CSAA017	1-12
AHU-7	SOUTH STUDY LOFTS	2200	650	VERTICAL	6	45	55	80/66	55/54	14.5	1.31	72.5	59	110	90	46	97.5	14.5	1.22	123	1.2	2.4	2294	2	1	-	-	1330	0.481	1	-	-	78.6	6.97	15	480 / 3 / 60	179X47X37	2150	TRANE	UCCA06	1-12

NOTES:

1. ALL UNITS SHALL BE COMPLETE WITH MERV 13 FILTERS.
2. PROVIDE DISCONNECT SWITCH AND STARTER AND VIBRATION ISOLATORS FOR EQUIPMENT.
3. ALL UNITS SHALL HAVE A MIXING BOX AND POLYMER DRAIN PAN.
4. ALL UNITS ARE TO BE FURNISHED WITH FRESH AIR INTAKE DAMPER AND RETURN AIR DAMPER WITH MODULATING MOTOR CONTROL.
5. PROVIDE FREEZESTAT AT COIL INTERLOCKED WITH OUTSIDE AIR DAMPER AND FAN MOTOR.
6. PROVIDE UNITS WITH DISCHARGE AIR SENSOR. PROVIDE MIN OF 18" PIPE CABINET.
7. PROVIDE UNIT WITH 16 GA POWEDERED COATED CABINET WITH TAMPERPORRF FASTNERS AND DOUBLE WALL INSULATION.
8. PROVIDE VIBRO-ACOUSTIC ROOF CURBDUCT CURB AND VIBRATION ISOLATORS . SUPPLY DUCT SHALL BE CONNECTED TO UNIT VIA FLEXIBLE CONNECTOR.
9. ALL UNITS SHALL BE WITH CONTROLS FACTORY INSTALLED AND DDC READY.
10. PROVIDE ECM MOTORS AND SINGLE POINT ELECTRICAL FEEDER FOR THE UNIT. LIGHTS AND GFI ON 115/1/60.
11. PROVIDE WALL MOUNTED THERMOSTAT AND H.G.R.H ON HIGH OAI.
12. CONTROL SEQUENCE TO LIMIT DISCHARGE AIR TEMP FROM UNIT TO 100 F.
13. 3 -WAY VALVE FOR HOT WATER COIL SHALL BE BYPASSED TO MEET EWT 110 F.

DUST COLLECTOR SCHEDULE

EQUIPMENT TAG	SERVED AREA	CFM	SP (IN WG)	INLET DIA.	FOOT PRINT	BLOWER			MAKE & MODEL	TYPE	DRUM CAPACITY	NOTES
						HP	VOLT	PH				
DC-1	SCENE SHOP	1,200	6.5	7"	30" L x 30" W x 89" HEIGHT	3	208	1	CAR-MON, CMC 160A	VERTICAL MOUNTED-CYCLONE COLLECTOR	30 GAL	1-6

NOTES:
1. BLOWER SHALL BE AMCA CERTIFIED
2. ALL THE COMPONENTS SHALL LBE PROVIDED OF CAR-MON MADE, LIKE DAMPERS, CLAMPS, HOSE AND FLOOR SWEEP WITH BALDOR MOTOR, CEM3559T.
3. STANDARD FINISH: TWO PART OF EPOXY PRIMED & FINISHED WITH MILL WHITE EPOXY.
4. PROVIDE, FINAL FILTERS AND REMOTE CONTROL.
5. DUCTWORK SHALL BE CLASS 2 TRASNFER DUCI, 2 NOS OF CAR-MON FLOOR SWEEP AND HOSE CONNECTION,(3NOS OF 3" DIA, 5FT. LONG, 2 NOS OF 4" DIA 5 FT. LONG, 1 NOS OF 5" DIA 5 FT. LONG) WITH S.STEEL CLAMPS
6. 2 YEAR WARRANTY.
7. PROVIDE, VIBRATION ISOLATORS FOR EQUIPMENT, ACCESSORIES AND AS PER MANUFACTURER RECOMMENDED INSTALLATION INSTRUCTIONS.

AIR COMPRESSOR SCHEDULE

EQUIPMENT TAG	LOCATION	SERVICE	MANUFACTURER	STAGE	WEIGHT	TYPE	OUTLET	MODEL	SIZE	TANK	COMPRESSOR			NOTES
											CFM	HP	V / PH / Hz	
AC-1	AIR-COMPRESSOR ROOM @ SCENE SHOP MEZZANINE FLOOR	STUDIO THEATRE, STAGE & SCENE SHOP	BELAIRE COMPRESSORS	2	830 LBS	HORIZONTAL-BELT DRIVE	3/4"	6312H4	73" L X 24" D X 49" H	120 GALLON ASME CERTIFIED W/STAINLESS STEEL VALVES	35 CFM @ 90 PSI	10	480 / 3 / 60	1-3

NOTES:

1. OTHER ACCEPTABLE MANUFACTURERS:SEE SPECIFICATIONS.
2. PROVIDE 1# HOSE REEL IN STUDIO THEATER AND 2# HOSE REEL IN SCENE SHOP AND 1# WALL PORT WITH DUAL NOZZLE; 2# WALL PORT WITH DUAL NOZZLE.
3. PROVIDE, 2-STAGE DOUBLE ACTING RECIPROCATING AIR -COMPRESSOR.
4. PROVIDE, PER MANUFACTURER RECOMMENDED INSTALLATION INSTRUCTIONS AND ACCESSORIES.
5.PROVIDE, VIBRATION ISOLATORS FOR EQUIPMENT.

ELECTRIC BASE BOARD SCHEDULE

EQUIPMENT TAG	LOCATION	SERVED AREA	MANUFACTURER	MODEL	DIMENSIONS (IN)			ELECTRICAL				NOTES
					LENGTH	HEIGHT	WIDTH	CAP. (KW)	AMPS	PHASE	VOLT	
EBB-1	ELEVATOR PIT	LEARNING COMMONS	QMARK	CBD-1500	70	9"	3"	1.5	12.5	1	120	1-5

NOTES:

1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS. _____, _____, _____.
2. PROVIDE WALL MOUNTED THERMOSTAT.
3. PROVIDE DISCONNECT.
4. INSTALL PER MANUFACTURER'S RECOMMENDNATIONS.
5. COORDINATE WITH ELECTRICAL AND INSTALL BASE BOARD MIN 12" ABOVE BOTTOM OF PIT.

CABINET UNIT HEATER SCHEDULE

EQUIPMENT TAG	LOCATION	MANUFACTURER	MODEL	TYPE	FAN		HOT WATER COIL					MOTOR				CABINET	CABINET DIMENSIONS (IN.)			FILTER		BUILT-IN DISCONN.	NOTES
					CFM	RPM	MBH	GPM	PRESS. DROP	EWT (F°)	EAT (F°)	HP	VOLT	MOCP	PHASE	MOUNTING	LENGTH	HEIGHT	DEPTH	TYPE	SIZE (IN)		
CUH-1	EVENT LOBBY	TRANE	FFBB 080	WALL	627	1101	43.9	4.4	8.72	140	60	0.22	208	15	1	VERTICAL	57	26	10	THROWAWAY	1	YES	1-4
CUH-2	COMMONS - VESTIBULE	TRANE	FFBB 030	WALL	277	601	32.53	2.55	7.3	140	60	0.13	208	15	1	VERTICAL	34	26	10	THROWAWAY	1	YES	1-4
CUH-3	THEATRE CLASS RM-VESTIBULE	TRANE	FFBB 030	WALL	277	601	32.53	2.55	7.3	140	60	0.13	208	15	1	VERTICAL	34	26	10	THROWAWAY	1	YES	1-4

NOTES:

1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. COLOR AS SELECTED BY ARCHITECT.
3. PROVIDE BUILT-IN RETURN AIR THERMOSTAT.
4. TOP DISCHARGE AND BOTTOM RETURN CONFIGURATION.
5. FOLLOW MANUFACTURER INSTALLATION RECOMMENDATIS

DIFFUSER, GRILLE AND REGISTER SCHEDULE

EQUIPMENT TAG	MANUFACTURER	MODEL	TYPE	NOMINAL FACE SIZE	MATERIAL	MAX. N.C.	NOTES
A	TITUS	OMNI	SQUARE PLAQUE DIFFUSER	24"x24"	STEEL	24	1-4
B	TITUS	50F	EGGCRATE RETURN	24"X24"	ALUMINUM	24	1-4
C	TITUS	DL	DRUM LOUVER WITH 30° DEFLECTION	VARIES	PRIMED	24	1-4
D	TITUS	TMRA-AA	ROUND DIFFUSER W/ ADJUSTABLE DISCHARGE PATTERN	VARIES	ALUMINUM	24	1-4
E	TITUS	350FL	HORIZONTAL FRONT LOUVERS, 3/4" BLADE SPACE 35° DEFLECTION	VARIES	ALUMINUM	24	1-2
F	TITUS	FL-10-JT	INSULATED PLENUM, SLOT DIFFUSER	VARIES	ALUMINUM	24	1-2
G	TITUS	TBDI	INSULATED PLENUM, SLOT DIFFUSER	VARIES	ALUMINUM	24	1-2
H	TITUS	FL-15-JT	INSULATED PLENUM, SLOT DIFFUSER	VARIES	ALUMINUM	24	1-2
I	TITUS	CT-480	3" FLANGLESS RETURN BAR GRILLES	VARIES	ALUMINUM	24	1-2
39 J	TITUS	ML-39	3 - 1" SLOTS	24" LENGTH	ALUMINUM	24	1-2

NOTES:

1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. COLOR & FINISH TO BE SELECTED BY ARCHITECT.
3. PROVIDE OPPOSED BLADE DAMPER WHERE REQUIRED.
4. PROVIDE DAMPER IN DIFFUSER NECK OVER INACCESSIBLE CEILING.

DUCT FREE SPLIT SYSTEM SCHEDULE

EQUIPMENT TAG	LOCATION	AREA SERVED	MANUFACTURER	CAPACITY (MBH)		INDOOR UNIT																OUTSIDE UNIT										NOTES
				TOTAL	EER	MODEL	TYPE	AIRFLOW			DIMENSIONS (INCH)			ELECTRICAL DATA								MODEL	COMPRESSOR			EAT (°F)	ELECTRICAL DATA			H	W	D	
								CFM	EAT. D.B.	EAT. W.B.	H	W	D	HP	MCA	MOCP	PHASE	VOLTS					SIZE (TONS)	WEIGHT	REF TYPE	EAT (°F)	MCA	MOCP	PHASE	VOLTS				
DFSS-1	ROOF	DIMMER ROOM	MITSUBISHI	36	10.8	PKA-A36KA7	WALL	920	80	67	15	47	12	1	1		1	208/230				PUY-A36NKA7	3	211	R 410A	95	25	31	1	208/230	57	43	14	1-2
DFSS-2	ROOF	DUPLICATING ROOM	MITSUBISHI	18	14.4	PLA-A18EA7	CASSETTE	600	80	67	34	34	11	1	1	15	1	208/230				PUZ-A18NKA7	1.5	100	R 410A	95	11	28	1	208/230	25	39	12	1-3

NOTES:

1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. FIELD INSTALLED ACCESSORIES TO INCLUDE THERMOSTAT AND SUB-BASE/RAILS, CRANKCASE HEATER, FILTERS, WINTER START CONTROL, LOW AMBIENT CONTROLS, ANTI-CYCLE TIMER, LIQUID LINE SOLENOID VALVE, WALL MOUNT KIT AND VIBRATION ISOLATORS.
3. HEAT PUMP WITH ISOLATION HANGERS

EXHAUST FAN SCHEDULE

EQUIPMENT TAG	LOCATION	AREA SERVED	MANUFACTURER	MODEL	TYPE	DRIVE	CFM	ESP (IN.)	FAN RPM	MOTOR			CONTROL	NOTES
										HP	RPM	V / PH / HZ		
EF-1	ROOF	SCENE SHOP	TWIN CITY	DCRD -120BE	DOWN BLAST	DIRECT	1000	0.5	1402	1/2	1750	115/1/60	OCCUPANCY SENSOR	1-5
EF-2	ROOF	DRESS & TOILETS-THEATRE CLASS ROOMS	TWIN CITY	DCRD -095BE	DOWN BLAST	DIRECT	450	0.5	1373	1/4	1750	115/1/60	OCCUPANCY SENSOR	1-5
EF-3	ROOF	TOILETS -STUDIO THEATRE	TWIN CITY	DCRD -120BE	DOWN BLAST	DIRECT	900	0.5	1346	1/2	1750	115/1/60	BMS	1-5
EF-4	ROOF	TOILETS -SCENE SHOP CORRIDOR	TWIN CITY	DCRD -070BE	DOWN BLAST	DIRECT	150	0.5	1296	1/6	1750	115/1/61	OCCUPANCY SENSOR	1-5
EF-5	ROOF	WOMEN' S TOILET -1st & 3rd FLOOR - AUDITORIUM	TWIN CITY	DCRD -120BE	DOWN BLAST	DIRECT	900	0.5	1346	1/2	1750	115/1/60	BMS	1-5
EF-6	ROOF	MEN' S TOILET -1st & 3rd FLOOR - AUDITORIUM	TWIN CITY	DCRD -120BE	DOWN BLAST	DIRECT	900	0.5	1346	1/2	1750	115/1/60	BMS	1-5
EF-7	ROOF	DUPLICATING ROOM -2nd FLOOR	TWIN CITY	DCRD -085B	DOWN BLAST	DIRECT	125	0.5	1385	1/8	1350	115/1/60	OCCUPANCY SENSOR	1-5

NOTES:

1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. MOTORIZED DAMPER AND BIRDSCREEN
3. DISCONNECT SWITCH
4. SOLID STATE SPEED CONTROLLER
5. ROOF CURB AND VIBRATION ISOLATORS.

ELECTRIC DUCT COIL SCHEDULE

EQUIP. TAG	LOCATION	EQUIPMENT SERVED	MANUFACTURER	MODEL	TYPE	SIZE WxH	CFM	SP (IN.)	KW	PHASE	VOLT	NOTES
EDH-1	LEVEL-1	COMMONS CORRIDOR - RADIO/SMALL GROUP RM	NAILOR	DHRS	SLIP -IN	14" X 10"	600	0.1	6	3	460	1-3
EDH-2	LEVEL-2	AUDITORIUM OFFICES /2-312	NAILOR	DHRS	SLIP -IN	12" X 8"	250	0.1	4	1	277	1-3
EDH-3	LEVEL-2	AUDITORIUM OFFICES /2-609	NAILOR	DHRS	SLIP -IN	12" X 8"	250	0.1	2	1	277	1-3
EDH-4	LEVEL-2	AUDITORIUM -CONTROL ROOMS	NAILOR	DHRS	SLIP -IN	16" X 12"	1050	0.1	10	3	460	1-3

NOTES:

1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. FURNISH COMPLETE WITH DISCONNECT SWITCH, CONTROL TRANSFORMER, MAGNETIC CONTACTORS, AIR FLOW SWITCH AND THERMAL CUTOUTS AND WALL THERMOSTAT.
3. COORDINATE WITH BMS.

DUCT SILENCER SCHEDULE

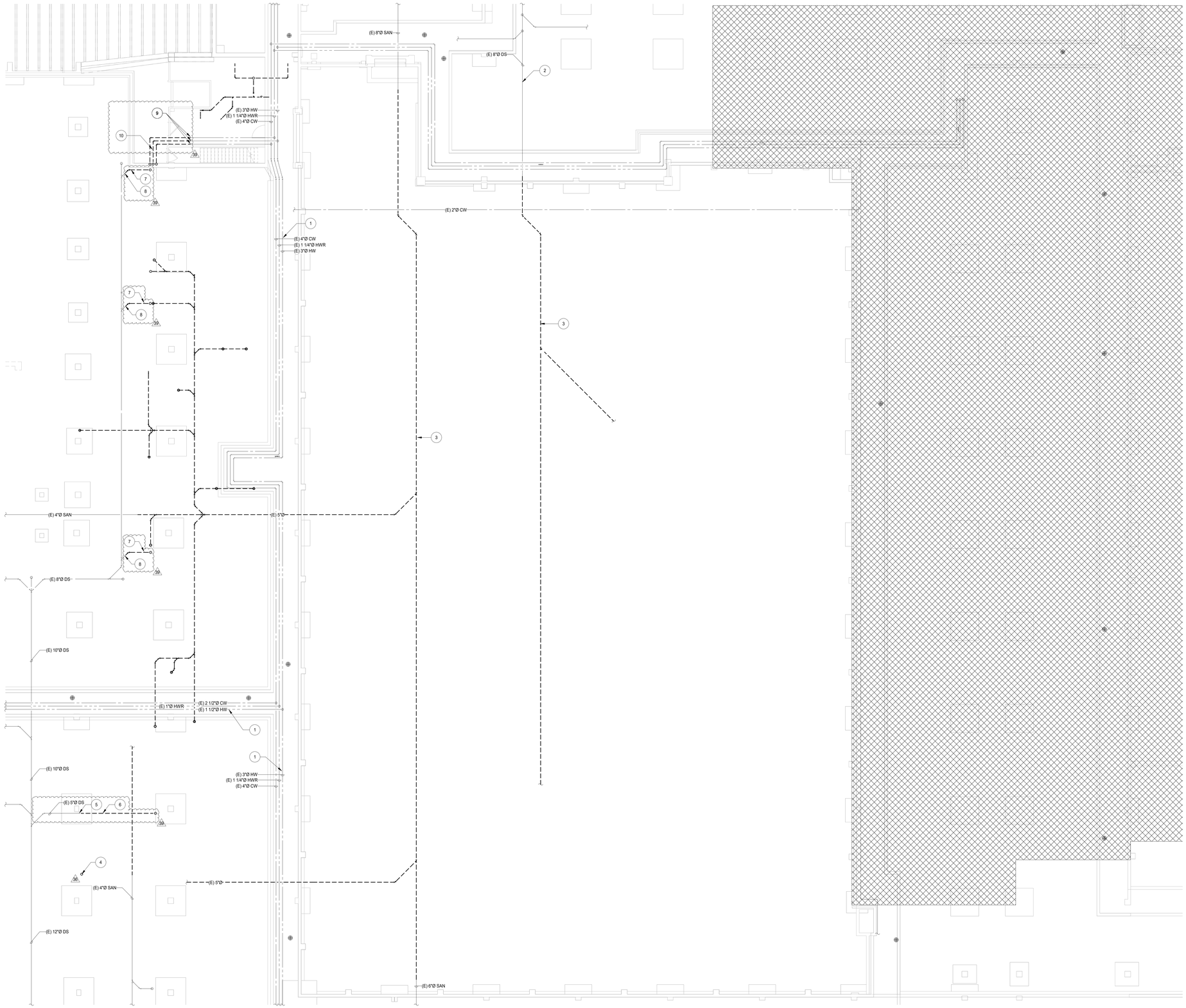
EQUIPMENT TAG	LOCATION	SERVICE	SERVED AREA	MANUFACTURER	MODEL	CFM	SIZE		SOUND BAND DATA/ GENERATED NOISE								MAX. AIR P.D. (IN. H2O)	NOTES
							W (IN.)	H (IN.)	L (IN.)	63	125	250	500	1K	2K	4K	8k	
A-1/DS-1.1	SUPPLY DUCT	AHU-1	LEARNING COMMONS	VIBRO-ACOUSTICS	RD-HV-F9-L24547	10300	64	16	60	4	5	11	22	38	29	19	13	0.13	1,2
A-1/DS-1.2	SUPPLY DUCT	AHU-1	LEARNING COMMONS	VIBRO-ACOUSTICS	RD-HV-F9-L24547	7300	42	16	60	4	5	11	22	38	29	19	13	0.15	1,2
A-1/DS-2	RETURN DUCT	AHU-1	LEARNING COMMONS	VIBRO-ACOUSTICS	RD-HV-F9-L24547	17600	96	18	60	4	5	13	25	40	28	16	10	0.13	1,2
R-1/DS-1.1	SUPPLY DUCT	RTU-1	STAGE	VIBRO-ACOUSTICS	RD-MHV-F7-L24547	7000	50	20	84	8	11	25	45	44	39	26	17	0.15	1,2
R-1/DS-1.2	RETURN DUCT	RTU-1	STAGE	VIBRO-ACOUSTICS	RD-MHV-F6-L24547	7000	50	20	84	9	13	28	48	45	37	24	15	0.15	1,2
R-3A/DS-1.1	SUPPLY DUCT	RTU-3A	AUDITORIUM	VIBRO-ACOUSTICS	RD-HV-FA-L24547	17500	62	32	84	9	12	17	28	28	29	23	19	0.16	1,2, 90 DEG ELBOW
R-3A/DS-1.2	SUPPLY DUCT	RTU-3A	AUDITORIUM	VIBRO-ACOUSTICS	CD-LV-F2-L24547	8750	44 DIA	-	60	5	9	21	32	36	30	19	10	0.06	CIRCULAR
R-3A/DS-1.3	SUPPLY DUCT	RTU-3A	AUDITORIUM	VIBRO-ACOUSTICS	CD-LV-F2-L24547	8750	44 DIA	-	60	5	9	21	32	36	30	19	10	0.06	CIRCULAR
R-3A/DS-1.2	RETURN DUCT	RTU-3A	AUDITORIUM	VIBRO-ACOUSTICS	RED-HV-FA-L24547	17500	62	32	84	9	12	18	30	28	29	21	19	0.16	1,2, 90 DEG ELBOW
R-3B/DS-1.1	SUPPLY DUCT	RTU-3B	AUDITORIUM	VIBRO-ACOUSTICS	RED-HV-FH-L24547	17500	46	40	84	9	11	13	21	24	27	22	17	0.14	1,2, 90 DEG ELBOW
R-3B/DS-1.2	SUPPLY DUCT	RTU-3B	AUDITORIUM	VIBRO-ACOUSTICS	CD-LV-F2-L24547	7000	44 DIA	-	84	7	13	27	41	42	35	22	15	0.04	CIRCULAR
R-3B/DS-1.3	SUPPLY DUCT	RTU-3B	AUDITORIUM	VIBRO-ACOUSTICS	CD-LV-F2-L24547	7000	44 DIA	-	84	7	13	27	41	42	35	22	15	0.04	CIRCULAR
R-3B/DS-1.2	RETURN DUCT	RTU-3B	AUDITORIUM	VIBRO-ACOUSTICS	RED-HV-FH-L24547	17500	46	40	84	9	13	14	23	22	25	19	16	0.14	1,2, 90 DEG ELBOW
R-2/DS-1.1	SUPPLY DUCT	RTU-2	STUDIO THEATRE	VIBRO-ACOUSTICS	RD-HV-F8-L24547	9250	48	26	108	8	10	25	46	55	42	27	21	0.13	1,2
R-2/DS-1.2	RETURN DUCT	RTU-2	STUDIO THEATRE	VIBRO-ACOUSTICS	RD-HV-F7-L24547	14000	52	32	84	7	12	25	43	43	32	21	13	0.13	1,2
R-4/DS-1.1	SUPPLY DUCT	RTU-4	SCENE SHOP/THEATRE CLASS RM	VIBRO-ACOUSTICS	RD-MHV-F9-L24547	2500	22	14	60	3	6	14	28	44	35	23	15	0.15	1,2
R-4/DS-1.2	SUPPLY DUCT	RTU-4	SCENE SHOP/THEATRE CLASS RM	VIBRO-ACOUSTICS	RD-MHV-F9-L24547	3500	34	14	60	3	6	14	28	44	35	23	15	0.13	1,2
R-4/DS-1.3	RETURN DUCT	RTU-4	SCENE SHOP/THEATRE CLASS RM	VIBRO-ACOUSTICS	RD-MHV-F9-L24547	2500	22	14	60	4	7	16	30	45	35	21	13	0.15	1,2
R-4/DS-1.3	RETURN DUCT	RTU-4	SCENE SHOP/THEATRE CLASS RM	VIBRO-ACOUSTICS	RD-MHV-F9-L24547	3500	34	14	60	4	7	16	30	45	35	21	13	0.13	1,2
R-5/DS-1.1	SUPPLY DUCT	RTU-5	EVENT LOBBY	VIBRO-ACOUSTICS	RD-HV-F8-L24547	6400	44	18	84	6	8	19	36	44	33	22	18	0.12	1,2
R-5/DS-1.2	RETURN DUCT	RTU-5	EVENT LOBBY	VIBRO-ACOUSTICS	RD-HV-F8-L24547	6400	44	16	84	7	9	22	38	46	31	21	17	0.15	1,2
A-2/DS-1.1	SUPPLY DUCT	AHU-2	3RD FLOOR CLASS RMS	VIBRO-ACOUSTICS	RD-UHV-F9-L24547	8500	58	16	84	5	4	10	24	38	33	21	17	0.11	1,2
A-2/DS-1.2	RETURN DUCT	AHU-2	3RD FLOOR CLASS RMS	VIBRO-ACOUSTICS	RD-UHV-F9-L24547	8500	58	16	84	5	4	12	25	38	33	21	16	0.11	1,2
A-3/DS-1.1	SUPPLY DUCT	AHU-3	2ND FLOOR CHEM LABS	VIBRO-ACOUSTICS	RD-UHV-F9-L24547	7000	40	18	84	5	4	13	31	51	38	22	15	0.08	1,2
A-3/DS-1.2	RETURN DUCT	AHU-3	2ND FLOOR CHEM LABS	VIBRO-ACOUSTICS	RD-UHV-F9-L24547	7000	40	18	84	6	5	15	33	52	37	20	14	0.08	1,2
A-4/DS-1.1	SUPPLY DUCT	AHU-4	2ND FLOOR BIO LABS	VIBRO-ACOUSTICS	RD-HV-F7-L24547	3500	34	12	84	6	9	22	39	43	35	22	15	0.14	1,2
A-4/DS-1.2	RETURN DUCT	AHU-4	2ND FLOOR BIO LABS	VIBRO-ACOUSTICS	RD-HV-F7-L24547	3500	34	12	84	7	12	25	43	43	32	21	13	0.14	1,2
A-5/DS-1.1	SUPPLY DUCT	AHU-5	CORRIDOR LC	VIBRO-ACOUSTICS	RD-HV-F8-L24547	8200	34	28	60	4	6	13	25	32	24	18	15	0.13	1,2
A-5/DS-1.2	RETURN DUCT	AHU-5	CORRIDOR LC	VIBRO-ACOUSTICS	RD-HV-F8-L24547	8200	34	28	60	5	7	15	27	33	24	18	15	0.15	1,2
A-6/DS-1.1	SUPPLY DUCT	AHU-6	NORTH STUDY LOFT/OFFICES	VIBRO-ACOUSTICS	RED-UHV-F9-L24547	4280	24	18	60	5	7	12	18	31	37	23	21	0.17	1,2 90 DEG ELBOW
A-6/DS-1.2	RETURN DUCT	AHU-6	NORTH STUDY LOFT/OFFICES	VIBRO-ACOUSTICS	RD-MHV-F9-L24547	4280	24	18	36	4	5	10	19	29	22	13	9	0.14	1,2
A-7/DS-1.1	SUPPLY DUCT	AHU-7	SOUTH STUDY LOFTS	VIBRO-ACOUSTICS	RD-MHV-F7-L24547	2200	18	14	60	3	6	17	31	34	27	18	13	0.16	1,2
A-7/DS-1.2	RETURN DUCT	AHU-7	SOUTH STUDY LOFTS	VIBRO-ACOUSTICS	RD-MHV-F7-L24547	2200	18	14	60	3	8	19	33	34	26	16	11	0.16	1,2

NOTES:

1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. GALVANIZED, CL 2 (18 GA), 22 GA PERFORATED LINER, FIBREGLASS, 2" SLIP CONNECTION ON INLET & OUTLET, COMPLY TO ASTM E477.

EXISTING AIR HANDLING UNIT W/ERV SCHEDULE (AAON) FOR BALANCING

EQUIPMENT TAG	AREA SERVED	CFM	OA CFM	AIR FLOW CONFIGURATION	COOLING		HEATING		ELECTRICAL				DIMENSIONS (IN.) LxWxH	WEIGHT (LBS)	MANUFACTURER	SERIAL #	MODEL #	NOTES
				SUPPLY & RETURN.	GPM	MAX. PD. (FT.)	GPM	MAX. PD. (FT.)	FLA	MCA	MOP	V / PH / HZ						
AHU-1	LEARNING COMMONS	17600	2600	VERTICAL	120	7.66	73	3.46	77	84	110	480 / 3 / 60	204X 100 X 68	6650	AAON	201160-BNWW02103	RN050	1-12
AHU-6	NORTH STUDY LOFTS/OFFICES	4280	650	VERTICA



#	KEY NOTES
1	ALL EXISTING UNDERGROUND WATER DISTRIBUTION PIPING TO REMAIN. SHOWN FOR REFERENCE.
2	EXISTING 8"Ø DS UNDERGROUND PIPING TO REMAIN.
3	UNDERGROUND SANITARY AND STORM PIPING SHOWN IS TO BE DEMOLISHED, BY CIVIL CONTRACTOR. SEE CIVIL DRAWINGS.
4	4"Ø SAN RISER TO BE REMOVED.
5	CAP/PLUG EXISTING 5"Ø UNDERGROUND STORM DRAINAGE PIPING AND PREPARE FOR NEW CONNECTION.
6	EXISTING 5"Ø UNDERGROUND STORM DRAINAGE PIPING AND ASSOCIATED ACCESSORIES TO BE REMOVED.
7	EXISTING 4"Ø UNDERGROUND STORM DRAINAGE PIPING AND ASSOCIATED ACCESSORIES TO BE REMOVED.
8	CAP PIPING AT LOCATION SHOWN. REMOVE UNDERGROUND PIPING SHOWN DASHED BEYOND THIS POINT.
9	NEW CONNECTION TO BE MADE AT THIS LOCATION. REMOVE ALL PIPING, VALVING, HANGERS, INSULATION, ETC. SHOWN DASHED.
10	REMOVE ALL PIPING, VALVING, HANGERS, INSULATION, ETC. SHOWN DASHED.

1 PLUMBING DEMOLITION - LOWER LEVEL AREA B (PHASE C)
SCALE: 1/8" = 1'-0"

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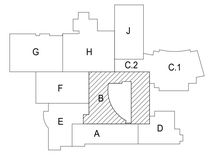

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REV	ISSUE	DATE
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36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019
	ISSUED FOR 100% DD	07.12.2019

MFP IMPLEMENTATION - SOUTH

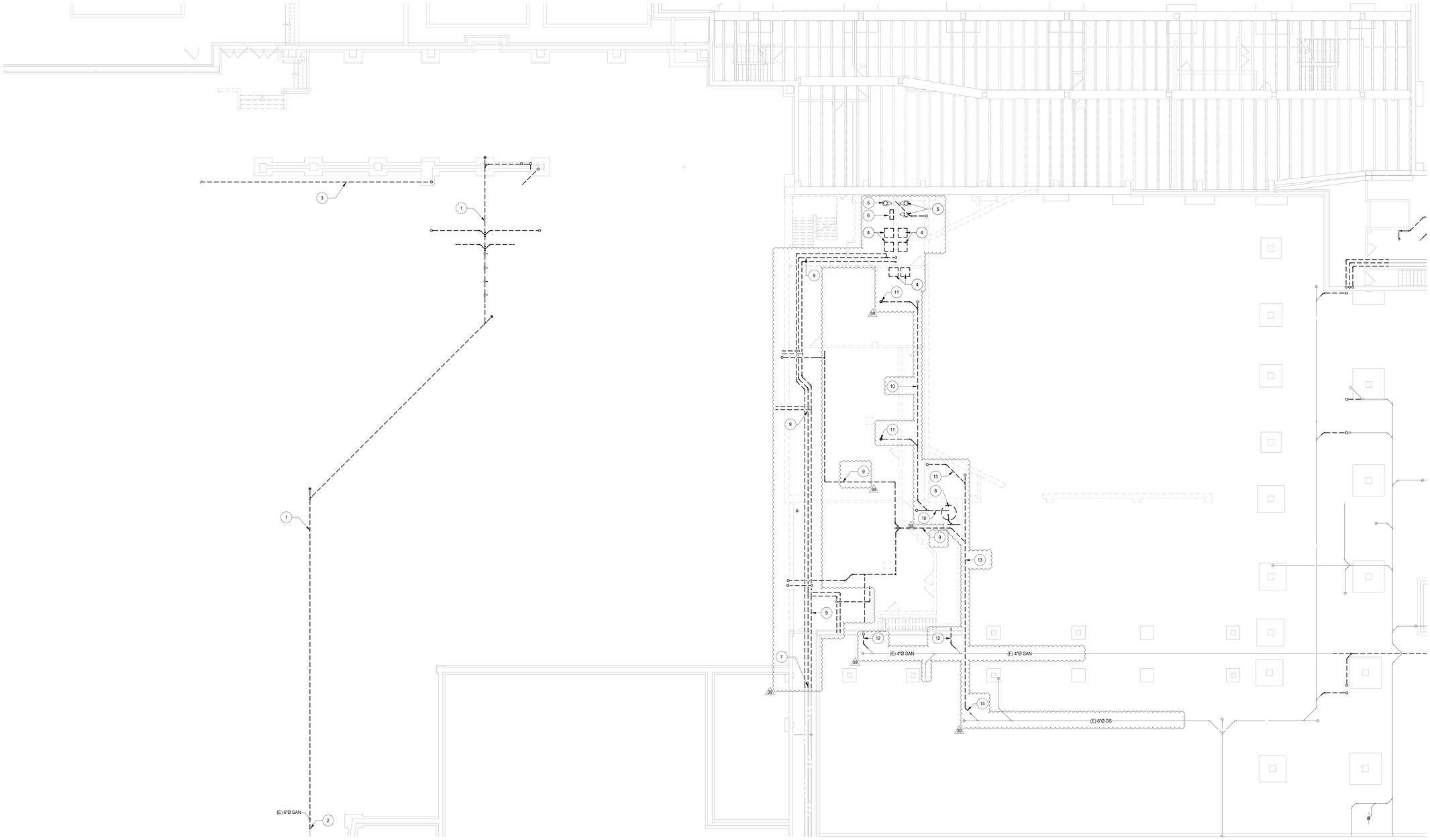
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

PLUMBING DEMOLITION - LOWER LEVEL AREA B (PHASE C)

Project Number:
5274-42
Drawn By:
E. AGUILAR
Sheet:

PD1.10B.c

#	KEY NOTES
1	EXISTING 4"Ø UNDERGROUND SANITARY PIPING AND ASSOCIATED ACCESSORIES TO BE REMOVED.
2	CAP/PLUG EXISTING 4"Ø UNDERGROUND SANITARY PIPING AND PREPARE FOR NEW CONNECTION.
3	EXISTING 8"Ø UNDERGROUND STORM PIPING AND ASSOCIATED ACCESSORIES TO BE REMOVED.
4	REMOVE EXISTING LAVATORY, FAUCET, CARRIER, AND ASSOCIATED CW/HW/SANV PIPING.
5	REMOVE EXISTING WATER CLOSET, FLUSH VALVE, CARRIER, AND ASSOCIATED CW/SANV PIPING.
6	REMOVE EXISTING URINAL, FLUSH VALVE, CARRIER, AND ASSOCIATED CW/SANV PIPING.
7	CAP CW/HW/HWR PIPING IN PIPE TUNNEL BACK TO LAST ACTIVE FIXTURE. REMOVE ALL PIPING, VALVING, HANGERS, INSULATION. VERIFY LOCATION IN FIELD.
8	REMOVE EXISTING SEWAGE EJECTOR, BASIN, CONTROLS, AND ASSOCIATED PIPING. REMOVE PUMP DISCHARGE BACK TO MAIN.
9	REMOVE EXISTING SUSPENDED PIPING, VALVING, HANGERS, INSULATION, ETC. SHOWN DASHED.
10	REMOVE EXISTING BELOW SLAB PIPING SHOWN DASHED.
11	EXISTING FLOOR DRAINS, FLOOR CLEANOUTS, AND HUB DRAINS ARE TO BE REMOVED.
12	EXISTING 3"Ø UNDERGROUND SANITARY PIPING AND ASSOCIATED ACCESSORIES TO BE REMOVED.
13	EXISTING 5"Ø UNDERGROUND STORM DRAINAGE PIPING AND ASSOCIATED ACCESSORIES TO BE REMOVED.
14	CAP PIPING AT LOCATION SHOWN. REMOVE UNDERGROUND PIPING SHOWN DASHED BEYOND THIS POINT.
15	EXISTING 4"Ø UNDERGROUND STORM DRAINAGE PIPING AND ASSOCIATED ACCESSORIES TO BE REMOVED.



1 PLUMBING DEMOLITION - LOWER LEVEL AREA F
SCALE: 1/8" = 1'-0"

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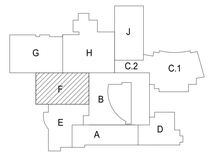

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	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019
	ISSUED FOR 100% DD	07.12.2019

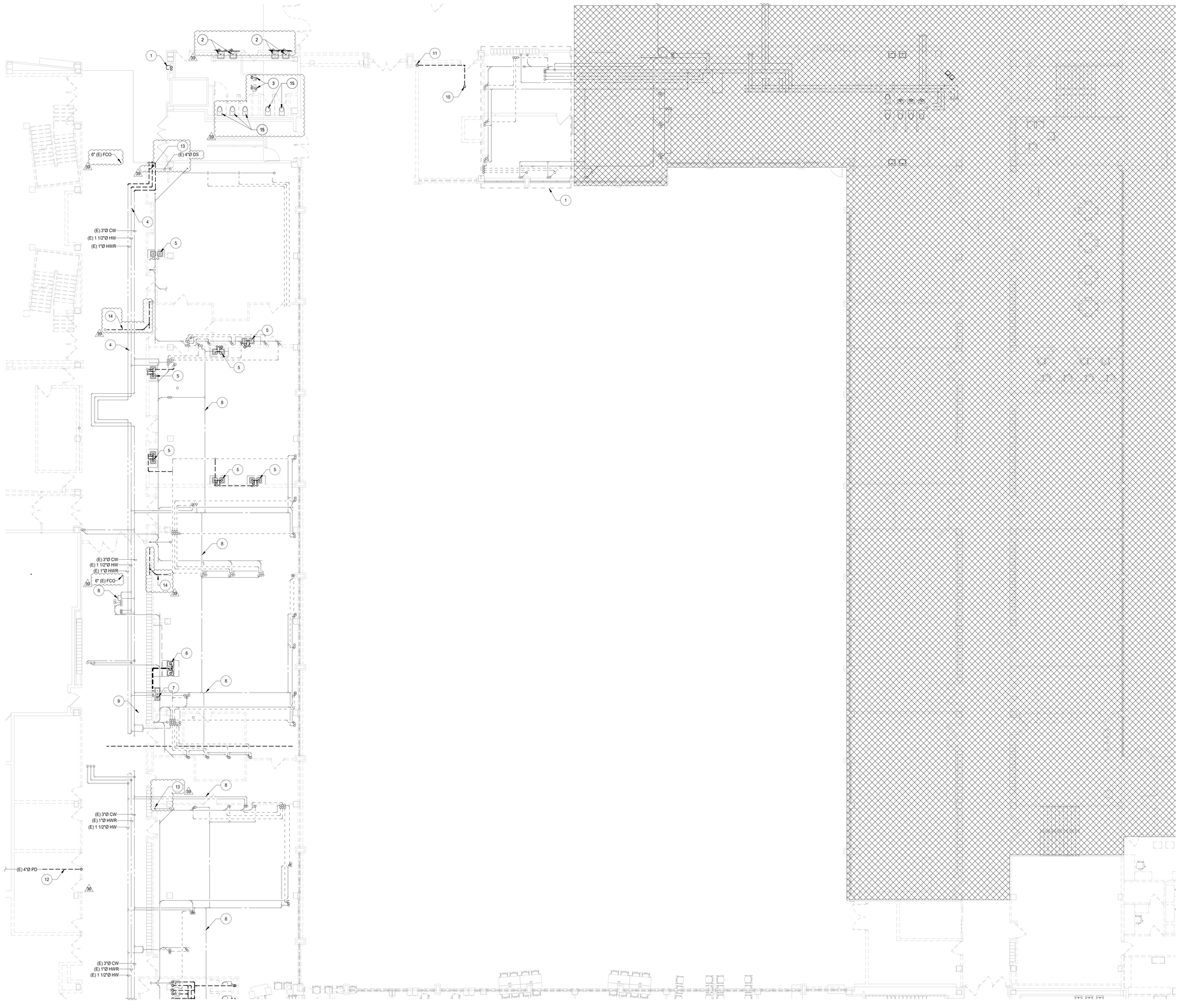
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

PLUMBING DEMOLITION - LOWER LEVEL AREA F

Project Number:
5274-42
Drawn By:
E. AGUILAR
Sheet:

PD1.10F



1 PLUMBING DEMOLITION - LEVEL 1 AREA B (PHASE C)
SCALE: 1/8" = 1'-0"

N

KEY NOTES

#	
1	EXISTING PLUMBING PIPING, FIXTURES, EQUIPMENT, ETC. TO REMAIN.
2	EXISTING LAVATORIES AND ASSOCIATED PIPING IN CHASE TO BE REMOVED.
3	EXISTING URINALS AND ASSOCIATED PIPING IN CHASE TO BE REMOVED.
4	PREPARE WATER DISTRIBUTION PIPING FOR NEW CONNECTIONS.
5	EXISTING DOUBLE BOWL SINKS AND ASSOCIATED PIPING TO BE REMOVED.
6	EXISTING SINGLE BOWL SINKS AND ASSOCIATED PIPING TO BE REMOVED.
7	EXISTING SERVICE SINK, SOLIDS INTERCEPTOR AND ASSOCIATED PIPING TO BE REMOVED.
8	ALL EXISTING PIPING IN CEILING TO REMAIN. SHOWN FOR REFERENCE.
9	EXISTING 1/2"Ø CW, 1/2"Ø HW TO BE CAPPED AT MAIN.
10	REMOVE EXISTING ROOF DRAIN AND ASSOCIATED DS PIPING SHOWN DASHED.
11	REMOVE EXISTING DS PIPING DOWN TO CRAWL TUNNEL AND CAP, AND ABANDON.
36 12	REMOVE EXISTING PLUMBING PIPING, VALVING, INSULATION, HANGERS, ETC. SHOWN DASHED.
13	REMOVE EXISTING STORM PIPING RISER AND ASSOCIATED ACCESSORIES. PREPARE STORM PIPING IN THE CEILING FOR NEW CONNECTION.
14	EXISTING STORM PIPING IN CEILING AND ASSOCIATED ACCESSORIES TO BE REMOVED.
39 15	REMOVE EXISTING WATER CLOSET, FLUSH VALVE, CARRIER, AND ASSOCIATED CW/SANV PIPING.

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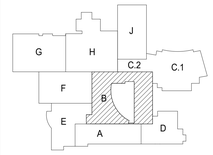

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	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019
	ISSUED FOR 100% DD	07.12.2019

MFP IMPLEMENTATION - SOUTH

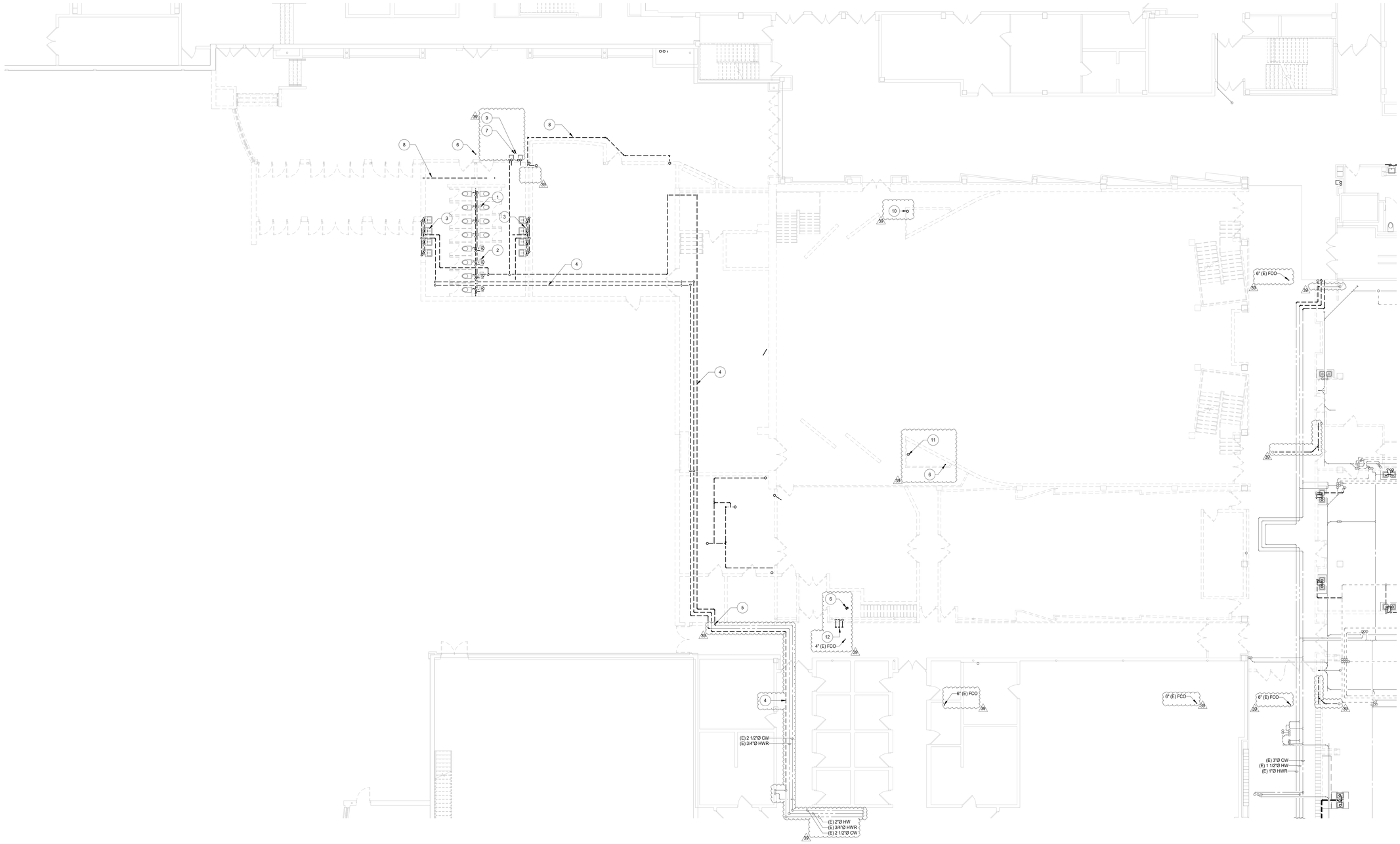
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

PLUMBING DEMOLITION - LEVEL 1 AREA B (PHASE C)

Project Number:
5274-42
Drawn By:
E. AGUILAR
Sheet:

PD1.11B.c

#	KEY NOTES
1	EXISTING WATER CLOSETS AND ASSOCIATED PIPING IN CHASE TO BE REMOVED.
2	EXISTING URINALS AND ASSOCIATED PIPING IN CHASE TO BE REMOVED.
3	EXISTING LAVATORIES AND ASSOCIATED PIPING IN CHASE TO BE REMOVED.
4	EXISTING WATER DISTRIBUTION PIPING TO BE REMOVED.
5	EXISTING 2 1/2"Ø CW, 3/4"Ø HW, & 3/4"Ø HWR TO BE CAPPED. PREPARE FOR NEW CONNECTION AT BEND.
6	EXISTING FLOOR DRAINS, FLOOR CLEANOUTS, AND HUB DRAINS ARE TO BE REMOVED.
7	EXISTING PLUMBING PIPING, FIXTURES, EQUIPMENT, ETC. TO REMAIN.
8	EXISTING STORM PIPING IN CEILING AND ASSOCIATED ACCESSORIES TO BE REMOVED.
9	CAREFULLY REMOVE EXISTING ELECTRIC WATER COOLER WITH BOTTLE FILLER AND RETURN TO OWNER.
10	EXISTING 4"Ø VENT PIPING AND ASSOCIATED ACCESSORIES TO BE REMOVED.
11	EXISTING 4"Ø DS PIPING AND ASSOCIATED ACCESSORIES TO BE REMOVED.
12	EXISTING PIPING SHOWN CAPPED AND ASSOCIATED ACCESSORIES TO BE REMOVED.



1 PLUMBING DEMOLITION - LEVEL 1 AREA F
SCALE: 1/8" = 1'-0"

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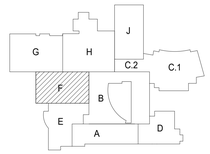

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NOT FOR CONSTRUCTION

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	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019
	ISSUED FOR 100% DD	07.12.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

PLUMBING DEMOLITION - LEVEL 1 AREA F

Project Number:
5274-42
Drawn By:
E. AGUILAR
Sheet:

PD1.11F

#	KEY NOTES
1	EXISTING PLUMBING PIPING, FIXTURES, EQUIPMENT, ETC. TO REMAIN.
2	REMOVE EXISTING DRINKING FOUNTAIN AND ASSOCIATED CW/SAN/V PIPING.
3	CAREFULLY REMOVE ELECTRIC WATER COOLER WITH BOTTLE FILLER. EWC TO BE REINSTALLED IN NEARBY LOCATION. REMOVE BRANCH CW/SAN/V PIPING AND PREPARE FOR NEW CONNECTION.

39

1 PLUMBING DEMOLITION - LEVEL 2 AREA B
SCALE: 1/8" = 1'-0"

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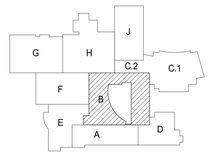

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MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

PLUMBING DEMOLITION - LEVEL 2 AREA B

Project Number:
5274-42
Drawn By:
E. AGUILAR
Sheet:

PD1.12B

#	KEY NOTES
1	EXISTING ROOF DRAIN AND ASSOCIATED PIPING TO BE REMOVED.
2	EXISTING STORM PIPING IN CEILING AND ASSOCIATED ACCESSORIES TO BE REMOVED.
3	REMOVE EXISTING PLUMBING PIPING, VALVING, INSULATION, HANGERS, ETC. SHOWN DASHED.
4	EXISTING FLOOR DRAINS, FLOOR CLEANOUTS, AND HUB DRAINS ARE TO BE REMOVED.
5	EXISTING VENT THROUGH ROOF AND ASSOCIATED ACCESSORIES TO BE REMOVED.

1 PLUMBING DEMOLITION - LEVEL 2 AREA F
SCALE: 1/8" = 1'-0"

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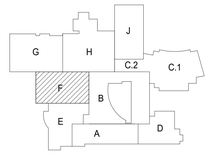

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	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019
	ISSUED FOR 100% DD	07.12.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

PLUMBING DEMOLITION - LEVEL 2 AREA F

Project Number:
5274-42
Drawn By:
E. AGUILAR
Sheet:

PD1.12F

#	KEY NOTES
1	8"Ø DS UP TO ABOVE SLAB.
2	6"Ø DS UP TO ABOVE SLAB.
3	6"Ø DS UP TO YCO.
4	6"Ø SAN UP TO FCO.
5	NEW 12"Ø DS TO BE DIRECTIONAL BORED TO EXISTING MANHOLE STRUCTURE. CATCH BASIN AND STORM PIPING FURNISHED AND INSTALLED BY SITE UTILITY CONTRACTOR. SEE CIVIL DRAWINGS FOR FURTHER INFORMATION.
6	
7	6"Ø DS UP TO AD-1.
8	4"Ø DS UP TO YCO.
9	4"Ø SAN UP TO FCO.
10	4"Ø SAN UP TO ABOVE SLAB.
11	6"Ø SAN UP TO ABOVE SLAB.
12	4"Ø DS UP TO ABOVE SLAB.

12"Ø DS
(E) 8"Ø SAN
8"Ø SAN
8"Ø DS
6"Ø DS
COURTYARD
EPP-1
(E) 4"Ø SAN
(E) 8"Ø DS
(E) 10"Ø DS
4"Ø SAN
(E) 5"Ø DS
6"Ø SAN
(E) 4"Ø SAN
(E) 12"Ø DS
(E) 6"Ø SAN

1 SANITARY & DRAINAGE FLOOR PLAN - UNDERGROUND AREA B (PHASE C)
SCALE: 1/8" = 1'-0"

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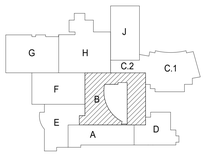

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REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
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	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
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	ISSUED FOR 100% DD	07.12.2019

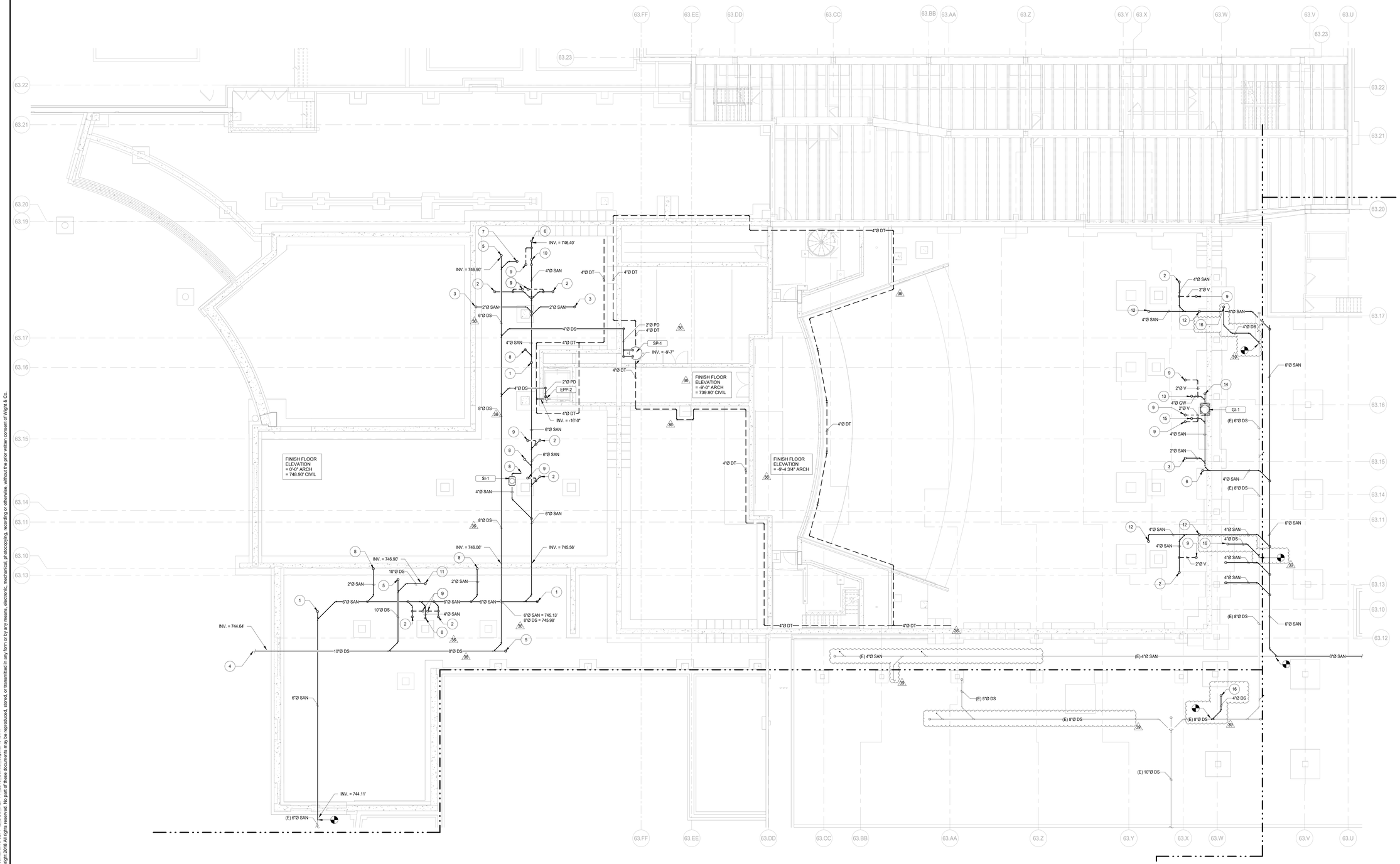
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

SANITARY & DRAINAGE FLOOR PLAN - UNDERGROUND AREA B (PHASE C)

Project Number:
5274-42
Drawn By:
E. AGUILAR
Sheet:
P1.10B.c

#	KEY NOTES
1	6"Ø SAN UP TO FCO.
2	4"Ø SAN UP TO FD-1.
3	2"Ø SAN UP TO SERVE FIXTURE(S).
4	FOR CONTINUATION, SEE CIVIL DRAWINGS. APPROXIMATE INVERT AT '-' BELOW GRADE.
5	6"Ø DS UP TO FCO.
6	4"Ø SAN UP TO FCO.
7	6"Ø DS UP TO ABOVE SLAB.
8	4"Ø SAN UP TO ABOVE SLAB.
9	2"Ø V UP TO ABOVE SLAB.
10	4"Ø UP TO JS-1.
11	10"Ø DS UP TO ABOVE SLAB.
12	4"Ø SAN UP TO ABOVE SLAB, TO SERVE FIXTURE(S).
13	4"Ø GW UP TO FS-1.
14	4"Ø GW UP TO FCO.
15	4"Ø SAN UP TO FS-1.
16	4"Ø DS UP TO ABOVE SLAB.



1 SANITARY & DRAINAGE FLOOR PLAN - UNDERGROUND AREA F
SCALE: 1/8" = 1'-0"

N

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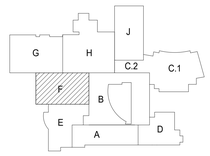

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MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

SANITARY & DRAINAGE FLOOR PLAN - UNDERGROUND AREA F

Project Number:
5274-42
Drawn By:
E. AGUILAR
Sheet:

P1.10F

KEY NOTES

#	
1	ALL EXISTING PIPING IN CEILING TO REMAIN. SHOWN FOR REFERENCE.
2	8"Ø ODS DN TO DOWNSPOUT NOZZLE WITH BIRD SCREEN.
3	6"Ø ODS DN TO DOWNSPOUT NOZZLE WITH BIRD SCREEN.
4	6"Ø DS DN TO BELOW SLAB.
5	8"Ø DS DN TO BELOW SLAB.
6	2"Ø PD (PUMP DISCHARGE) THROUGH FOUNDATION WALL OVER TO 4" AD-1. DISCHARGE SHALL TERMINATE MINIMUM 4" ABOVE DRAIN.
7	4"Ø SAN DN.
8	4"Ø SAN & 4"Ø PD DN IN WALL, COMBINED AT FLOOR LEVEL WITH 6" Ø WYE AND PROVIDE WCO AT BASE OF STACK.
9	(E) 4"Ø DS UP TO FLOOR ABOVE.
10	4"Ø DS DN TO BELOW SLAB.

GENERAL NOTES

1	REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS, WALLS, AND DETAILS OF PENETRATIONS THROUGH THESE WALLS.
2	REFER TO SPECIFICATION SECTION 079200 FOR ACOUSTICAL SEALANT REQUIREMENTS FOR PENETRATIONS OF ACOUSTICALLY SENSITIVE AND ACOUSTICALLY CRITICAL WALLS AND PARTITIONS.
3	REFER TO SPECIFICATION SECTION 220719 FOR PIPE LAGGING REQUIREMENTS FOR PLUMBING PIPING.

1 SANITARY & DRAINAGE FLOOR PLAN - LEVEL 1 AREA B (PHASE C)
SCALE: 1/8" = 1'-0"

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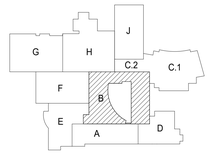

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	ISSUED FOR 100% DD	07.12.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

SANITARY & DRAINAGE FLOOR PLAN - LEVEL 1 AREA B (PHASE C)

Project Number:
5274-42
Drawn By:
E. AGUILAR
Sheet:

P1.11B.c

#	KEY NOTES
1	6"Ø ODS DN TO DOWNSPOUT NOZZLE WITH BIRD SCREEN.
2	8"Ø ODS DN TO DOWNSPOUT NOZZLE WITH BIRD SCREEN.
3	4"Ø ODS UP TO ORD-1.
4	4"Ø DS UP TO RD-1.
5	3"Ø ODS UP TO ORD-1.
6	3"Ø DS UP TO RD-1.
7	ALL EXISTING PIPING IN CEILING TO REMAIN. SHOWN FOR REFERENCE.
8	6"Ø DS DN IN CHASE. FURNISH AND INSTALL WALL CLEANOUT AT BASE OF STACK.
9	4"Ø V UP.
10	8"Ø DS DN IN CHASE, 10"Ø DS DN TO BELOW SLAB. FURNISH AND INSTALL WALL CLEANOUT AT BASE OF STACK.
11	4"Ø DS DN.
12	4"Ø SAN UP/DN.
13	4"Ø SAN DN.
14	4"Ø SAN UP TO FLOOR ABOVE.
15	4"Ø V UP TO FLOOR ABOVE.
16	8"Ø ODS UP TO FLOOR ABOVE.
17	3"Ø V UP TO FLOOR ABOVE.
18	6"Ø DS UP.
19	4"Ø DS DN TO BELOW SLAB.
20	(E) 4"Ø DS UP TO FLOOR ABOVE.

GENERAL NOTES	
1	REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS, WALLS, AND DETAILS OF PENETRATIONS THROUGH THESE WALLS.
2	REFER TO SPECIFICATION SECTION 079200 FOR ACOUSTICAL SEALANT REQUIREMENTS FOR PENETRATIONS OF ACOUSTICALLY SENSITIVE AND ACOUSTICALLY CRITICAL WALLS AND PARTITIONS.
3	REFER TO SPECIFICATION SECTION 220719 FOR PIPE LAGGING REQUIREMENTS FOR PLUMBING PIPING.

1 SANITARY & DRAINAGE FLOOR PLAN - LEVEL 1 AREA F
SCALE: 1/8" = 1'-0"

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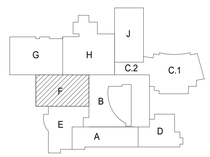

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MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

SANITARY & DRAINAGE FLOOR PLAN - LEVEL 1 AREA F

Project Number:
5274-42
Drawn By:
E. AGUILAR
Sheet:

P1.11F

KEY NOTES

#	
1	8"Ø ODS UP/DN.
2	6"Ø ODS UP/DN.
3	6"Ø DS UP/DN
4	8"Ø DS UP/DN
5	ALL EXISTING PIPING IN CEILING TO REMAIN. SHOWN FOR REFERENCE.
6	EXISTING PLUMBING PIPING, FIXTURES, EQUIPMENT, ETC. TO REMAIN.
7	REINSTALLED EWC. CONNECT CW/SANV PIPING IN CHASE.

GENERAL NOTES

1. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS, WALLS, AND DETAILS OF PENETRATIONS THROUGH THESE WALLS.
2. REFER TO SPECIFICATION SECTION 079200 FOR ACOUSTICAL SEALANT REQUIREMENTS FOR PENETRATIONS OF ACOUSTICALLY SENSITIVE AND ACOUSTICALLY CRITICAL WALLS AND PARTITIONS.
3. REFER TO SPECIFICATION SECTION 220719 FOR PIPE LAGGING REQUIREMENTS FOR PLUMBING PIPING.

1 SANITARY & DRAINAGE FLOOR PLAN - LEVEL 2 AREA B
SCALE: 1/8" = 1'-0"

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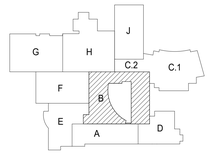

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MFP IMPLEMENTATION - SOUTH

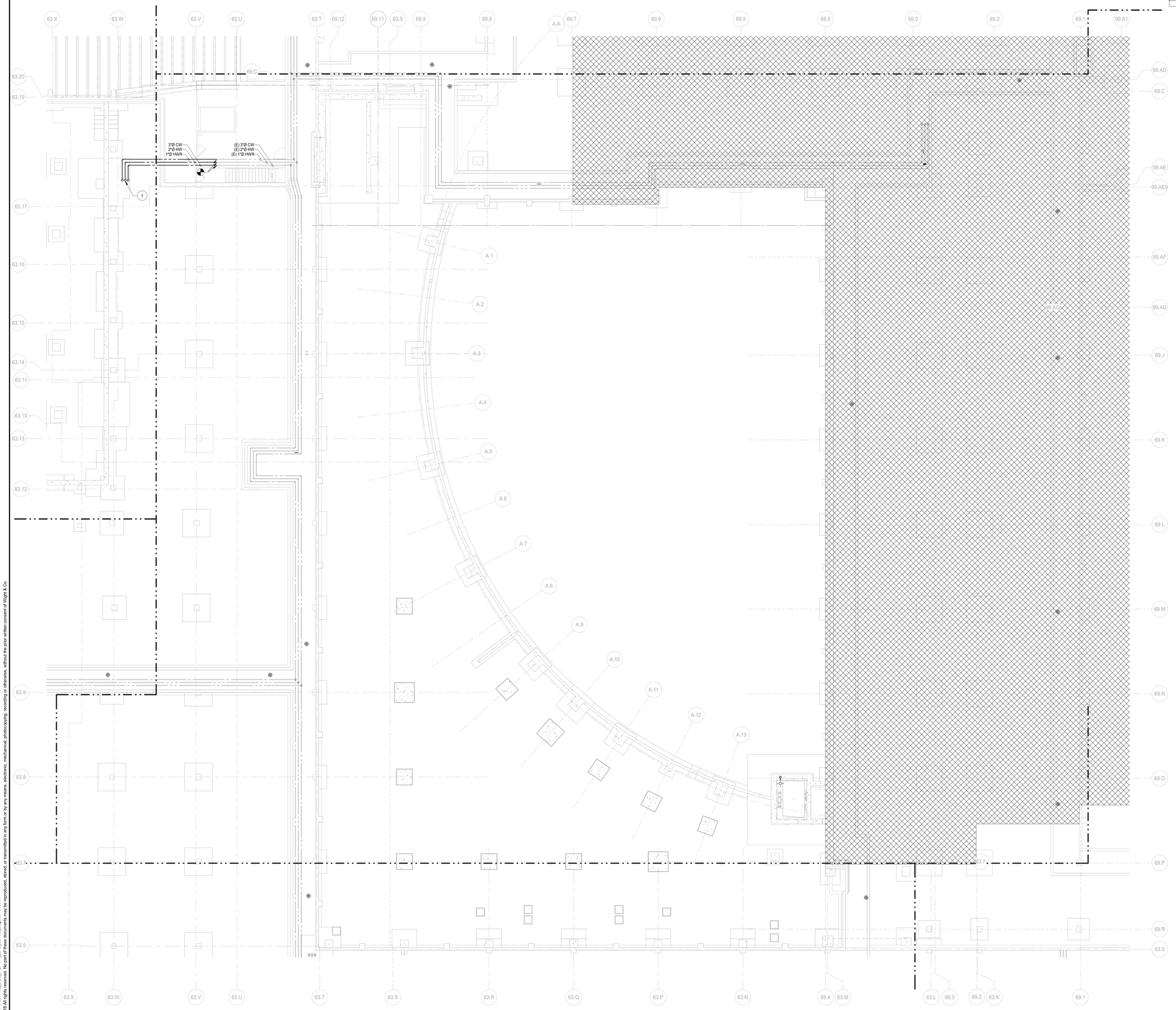
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

SANITARY & DRAINAGE FLOOR PLAN - LEVEL 2 AREA B

Project Number:
5274-42
Drawn By:
E. AGUILAR
Sheet:

P1.12B

#	KEY NOTES
1	3"Ø CW, 2"Ø HW, AND 1"Ø HWR UP TO ABOVE SLAB.



1 WATER DISTRIBUTION FLOOR PLAN - UNDERGROUND AREA B (PHASE C)
SCALE: 1/8" = 1'-0"

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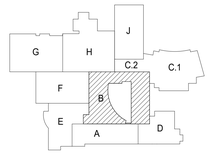

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39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

WATER DISTRIBUTION FLOOR PLAN - UNDERGROUND AREA B (PHASE C)

Project Number:
5274-42
Drawn By:
E. AGUILAR
Sheet:
P2.10B.c

#	KEY NOTES
1	ALL EXISTING PIPING IN CEILING TO REMAIN. SHOWN FOR REFERENCE.
2	1/2"Ø CW AND 1/2"Ø HW DN IN WALL/CHASE TO SERVE FIXTURE(S).
3	2-1/2"Ø CW DN IN CHASE TO SERVE FIXTURE(S).
4	2"Ø CW DN IN CHASE TO SERVE FIXTURE(S).
5	1/2"Ø HWR DN IN WALL/CHASE TO SERVE FIXTURE(S).
6	3/4"Ø CW AND 3/4"Ø HW DN IN WALL TO SERVE FIXTURE(S).
7	PIPES DN IN CHASE, TOP TO BOTTOM: 1/2"Ø HWR, 3/4"Ø HW, 1-1/2"Ø CW.
8	3"Ø CW, 2"Ø HW, AND 1"Ø HWR DN IN CHASE TO BELOW SLAB.
9	2-1/2"Ø CW, 3/4"Ø HW, AND 3/4"Ø HWR ROUTED UP/DN IN CHASE.

	GENERAL NOTES
1	REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS, WALLS, AND DETAILS OF PENETRATIONS THROUGH THESE WALLS.
2	REFER TO SPECIFICATION SECTION 079200 FOR ACOUSTICAL SEALANT REQUIREMENTS FOR PENETRATIONS OF ACOUSTICALLY SENSITIVE AND ACOUSTICALLY CRITICAL WALLS AND PARTITIONS.
3	REFER TO SPECIFICATION SECTION 220719 FOR PIPE LAGGING REQUIREMENTS FOR PLUMBING PIPING.

1 WATER DISTRIBUTION FLOOR PLAN - LEVEL 1 AREA F
SCALE: 1/8" = 1'-0"

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MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

WATER DISTRIBUTION FLOOR PLAN - LEVEL 1 AREA F

Project Number:
5274-42
Drawn By:
E. AGUILAR
Sheet:

P2.11F

KEY NOTES

1	EXISTING PLUMBING PIPING, FIXTURES, EQUIPMENT, ETC. TO REMAIN.
2	REINSTALLED EWC. CONNECT CW/SAN/V PIPING IN CHASE.
3	2-1/2"Ø CW, 3/4"Ø HW, AND 3/4"Ø HWR ROUTED UP/DN IN CHASE.

GENERAL NOTES

1	REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS, WALLS, AND DETAILS OF PENETRATIONS THROUGH THESE WALLS.
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1 WATER DISTRIBUTION FLOOR PLAN - LEVEL 2 AREA B
SCALE: 1/8" = 1'-0"

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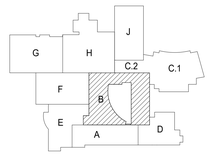

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MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

WATER DISTRIBUTION FLOOR PLAN - LEVEL 2 AREA B

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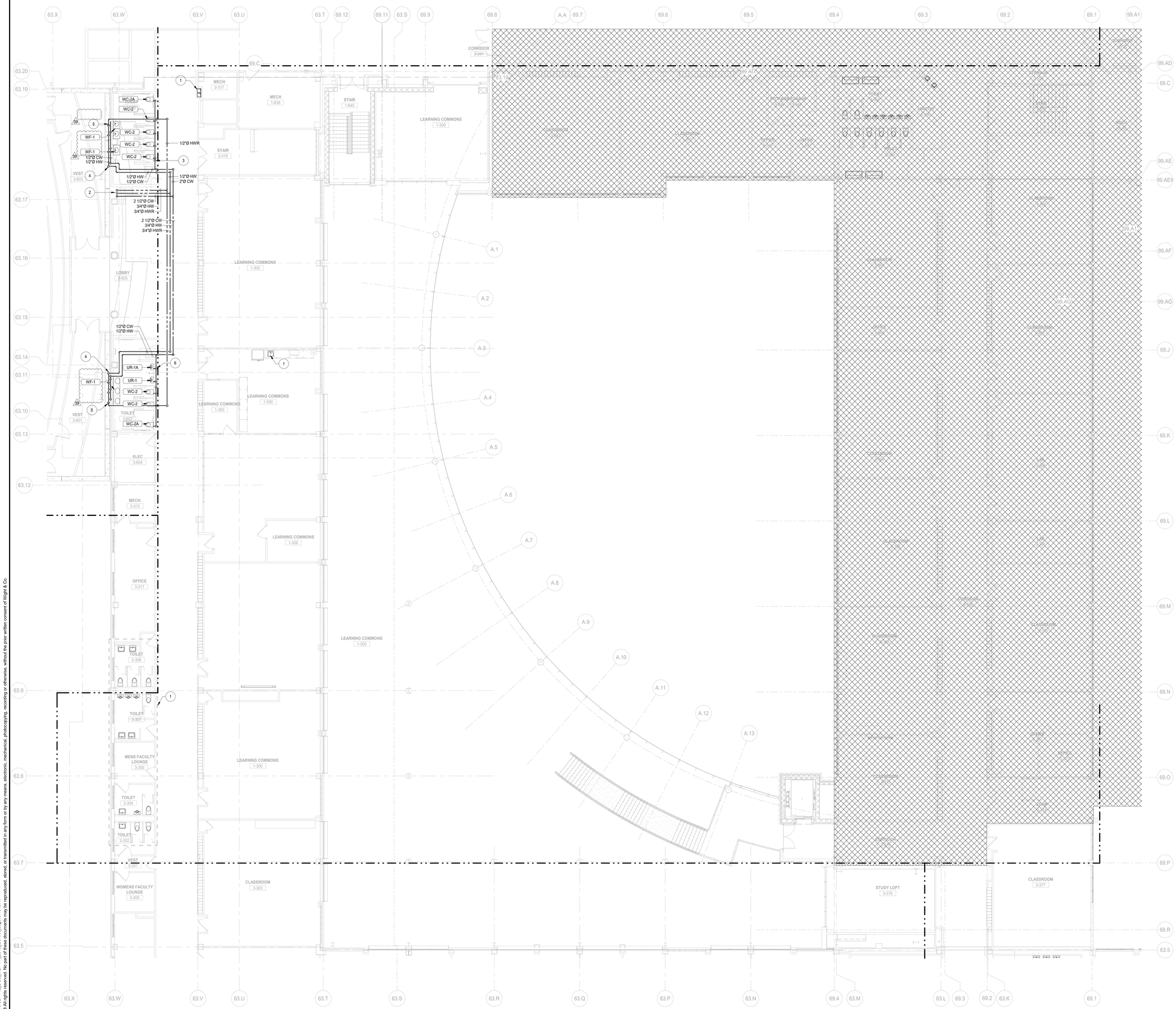

1 WATER DISTRIBUTION FLOOR PLAN - LEVEL 3 AREA B
SCALE: 1/8" = 1'-0"

KEY NOTES

#	
1	EXISTING PLUMBING PIPING, FIXTURES, EQUIPMENT, ETC. TO REMAIN.
2	2-1/2"Ø CW, 3/4"Ø HW, AND 3/4"Ø HWR DN IN CHASE TO FLOOR BELOW.
3	2-1/2"Ø CW DN IN CHASE TO SERVE FIXTURE(S).
4	1/2"Ø CW AND 1/2"Ø HW DN IN CHASE TO SERVE FIXTURE(S).
5	1/2"Ø HWR DN IN CHASE TO SERVE FIXTURE(S).
6	2"Ø CW DN IN CHASE TO SERVE FIXTURE(S).

GENERAL NOTES

1. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS, WALLS, AND DETAILS OF PENETRATIONS THROUGH THESE WALLS.
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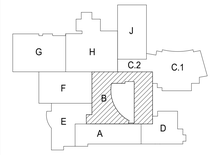

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MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

WATER DISTRIBUTION FLOOR PLAN - LEVEL 3 AREA B

Project Number:
5274-42
Drawn By:
E. AGUILAR
Sheet:

P2.13B

TYPE	FIXTURE DESCRIPTION	MOUNTING	MANUFACTURER	CATALOG NUMBER	LIGHT PROPERTIES	WATTS / SOURCE	VOLT.	CONTROL	LOCATION / REMARKS
S1	INDUSTRIAL 'JELLY JAR' FIXTURE WITH IMPACT RESISTANT GUARD, LOW-GLARE FROSTED GLASS GLOBE, GRAY FINISH, AND INTEGRAL ELECTRONIC DRIVER	SURFACE WALL OR CATWALK HANGER	CANLET RAB EATON	68-02-20WLED-WF-OG-18 VXBRLED-26-N-DG VT1730	SOURCE: WHITE LED INTEGRAL OUTPUT: ~1,400 LUMENS DELIVERED CCT: 3500K OR 4000K (STATIC) CRI: 80+	20 26 18	120	INTEGRAL NON-DIM	AUDITORIUM & BLACK BOX CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING HARDWARE. COORDINATE WITH CATWALK STRUCTURE.
S2	INDUSTRIAL 'JELLY JAR' FIXTURE WITH IMPACT RESISTANT GUARD, BLUE GLASS GLOBE, MATTE BLACK FINISH, AND INTEGRAL ELECTRONIC DRIVER	SURFACE WALL	CANLET SPECTRUM	68-03-15WLED-WF-OG-MOD WJ1GV-15L-40K-DS10X-BLJ1(MOD)-CP104-MB MOD = BLUE GLASS GLOBE WITH INSIDE FROST	SOURCE: WHITE LED INTEGRAL OUTPUT: ~1,400 LUMENS SOURCE CCT: 3500K OR 4000K (STATIC) CRI: 80+	15 11	120	INTEGRAL 0-10V 100% - 10%	AUDITORIUM & BLACK BOX CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING HARDWARE.
S3	NOT USED								
S4	CYLINDER DOWNLIGHT WITH NOMINAL 2 IN. APERTURE, 3 IN. DIA X 5.5 IN. TALL HOUSING, 50X20-DEG BEAM DISTRIBUTION, CLEAR SEMI-SPECULAR ALZAK REFLECTOR WITH SELF-FLANGE, BLACK HOUSING FINISH, AND INTEGRAL ELECTRONIC DIMMING DRIVER	SUSPENDED CEILING	GOTHAM	ICO-CYL-30/15-2AR-LSS-5020D-MVOLT-UGZ-CMSG-DBL	SOURCE: WHITE LED INTEGRAL OUTPUT: 1,500 LUMENS DELIVERED CCT: 3000K CRI: 80+	22	120	INTEGRAL 0-10V 100% - 1%	AUDITORIUM - PINRAIL GALLERY PENDANT CABLE LENGTH AS REQUIRED PER DRAWINGS. DRIVER SHALL BE ACCESSIBLE AND SERVICEABLE WITHOUT REMOVING THE MOUNTINGS OR ADJACENT CONSTRUCTION. CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING HARDWARE.
S5-1	LINEAR FIXTURE WITH NOMINAL 3 IN. X 3 IN. SQUARE ?PROFILE. TWO-SIDED FROSTED ACRYLIC LENS, WHITE HOUSING FINISH, AND INTEGRAL ELECTRONIC DRIVER	SURFACE WALL	LUMENWERX BARTCO	CUBS-HLO-LED-90-700-30-xxFT-UNV-MIKDR-1-DRM-W BSS750-x-930(MOD)-DM-L-SM-xx-WH	SOURCE: WHITE LED INTEGRAL OUTPUT: 700 LUMENS PER FT DELIVERED CCT: 3000K CRI: 90+	5.5 5.6 W / FT	PER E.E.	INTEGRAL 0-10V 100% - 1%	DRESSING ROOM MIRRORS - UPPER CONTRACTOR SHALL PROVIDE ALL NECESSARY POWER SUPPLIES, FITTINGS, ACCESSORIES, ETC AS NEEDED FOR A COMPLETE, FUNCTIONAL SYSTEM. FIXTURES SHALL BE MOUNTED TIGHTLY END-TO-END ALONG ENTIRE LENGTH OF MIRROR. CONTRACTOR SHALL COORDINATE REQUIRED RUN LENGTHS. CONTRACTOR SHALL PROVIDE SHOP DRAWING SHOWING DIMENSIONED FIXTURE CONFIGURATIONS FOR EACH CONDITION.
S5-2	LINEAR FIXTURE WITH NOMINAL 1 IN. ROUNDED PROFILE, FROSTED ACRYLIC LENS, MATTE WHITE HOUSING FINISH, AND REMOTE ELECTRONIC DRIVER	SURFACE WALL	PURE EDGE LUMINI	THD.T1-4SQ-xx-30K-WH CLQ-xx-30K-HO-C-WH-x-xx	SOURCE: WHITE LED INTEGRAL OUTPUT: 350 LUMENS PER FT DELIVERED CCT: 3000K CRI: 90+	5 6.5 W / FT	24 VDC	REMOTE 0-10V 100% - 1%	DRESSING ROOM MIRRORS - LOWER SAME REMARKS AS TYPE S5-1.
	A REMOTE POWER SUPPLY	REMOTE			N/A	N/A	PER E.E.	SEE ABOVE	POWER SUPPLIES SHALL FEED MULTIPLE FIXTURES. POWER SUPPLIES SHALL BE PROVIDED BY FIXTURE MANUFACTURER. CONFIRM SIZE AND QUANTITY WITH FIXTURE MANUFACTURER. POWER SUPPLIES SHALL BE LOCATED IN ACCESSIBLE AND VENTILATED LOCATIONS. CONFIRM LOCATIONS WITH ARCHITECT. PROVIDE ENCLOSURES WITH PLENUM RATING WHERE REQUIRED.
S6	STAGE EDGE SAFETY LIGHT STRIP WITH AMBER LEDS ON 12 IN. CENTERS ON PERPENDICULAR ANGLE AND RED LED AT CENTER	RECESSED FLOOR	LUMENESCE TIVOLI FUTURELIGHT	4W-12-xx-xx-WM-D STEG-12-xxx-12 + STEG-12-xxx-x-x-12 EL-F-X-12-A-G	SOURCE: AMBER LED INTEGRAL OUTPUT: N/A CCT: N/A CRI: N/A	2 W / FT	24 VDC	REMOTE NON-DIM	AUDITORIUM - STAGE EDGE COORDINATE MOUNTING WITH STAGE FLOORING INSTALLER.
	A REMOTE POWER SUPPLY	REMOTE			N/A	N/A	PER E.E.	SEE ABOVE	POWER SUPPLIES SHALL FEED MULTIPLE FIXTURES. POWER SUPPLIES SHALL BE PROVIDED BY FIXTURE MANUFACTURER. CONFIRM SIZE AND QUANTITY WITH FIXTURE MANUFACTURER. POWER SUPPLIES SHALL BE LOCATED IN ACCESSIBLE AND VENTILATED LOCATIONS. CONFIRM LOCATIONS WITH ARCHITECT. PROVIDE ENCLOSURES WITH PLENUM RATING WHERE REQUIRED.
S7	STEPLIGHT WITH LOUVERED FACEPLATE, BLACK FINISH, FROSTED ACRYLIC LENS, AND INTEGRAL ELECTRONIC DRIVER	RECESSED WALL	BEGA FC LIGHTING	33018-K3-BLK-ACD-TPSS FCSL105-UNV-30K-190-CRI85-BK-LD-PCL	SOURCE: WHITE LED INTEGRAL OUTPUT: xxx LUMENS DELIVERED CCT: 3000K CRI: 80+	5 11	120	INTEGRAL 0-10V 100% - 10%	AUDITORIUM STEPS, RAMPS, AISLES FIXTURES SHALL BE MOUNTED 18 IN. AFF UNLESS OTHERWISE NOTED ON DRAWINGS. CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTINGS, FITTINGS, ACCESSORIES, ETC. AS NEEDED FOR A COMPLETE, FUNCTIONAL INSTALLATION.
	A 1/2 IN. EXTENDED TRIM RING	INTEGRAL			N/A	N/A	N/A	N/A	
	B MOUNTING BRACKETS	INTEGRAL			N/A	N/A	N/A	N/A	PROVIDE AS NECESSARY SUCH THAT REAR OF FACEPLATE IS INSTALLED FLUSH TO FINISHED SURFACE.
S8	STEPLIGHT WITH NOMINAL 2.5IN. X 4.5 IN. STAINLESS STEEL LOUVERED FACEPLATE AND INTEGRAL, ELECTRONIC DRIVER	SURFACE CATWALK HANGER	COLE	SL150H	SOURCE: WHITE LED INTEGRAL OUTPUT: 450 LUMENS SOURCE CCT: 3000K CRI: 80+	3	120	INTEGRAL NON-DIM	AUDITORIUM - CATWALKS REFER TO DRAWINGS FOR MOUNTING DETAILS.
S9	SINGLE CIRCUIT TRACK WITH BLACK FINISH	SURFACE CEILING	JUNO INTENSE	**TRAC-MASTER T-SERIES** **SINGLE CIRCUIT TRACK SERIES ISx**	N/A	N/A	120		AUDITORIUM - CONTROL BOOTH PROVIDE ALL NECESSARY MOUNTINGS, FITTINGS, ACCESSORIES, ETC. AS NEEDED FOR A COMPLETE, FUNCTIONAL TRACK SYSTEM. PROVIDE LENGTHS OF TRACK AS SHOWN ON THE DRAWINGS.
	A SINGLE CHANNEL DMX-RDM CONTROLLED PHASE-ADAPATIVE DIMMER	REMOTE	ELECTRONIC THEATRE CONTROLS	UFD	N/A	600	120	REMOTE DMX-RDM 100% - 0%	PROVIDE ONE (1) PER ROOM. DEVICES SHALL BE LOCATED IN ACCESSIBLE AND VENTILATED LOCATIONS. CONFIRM LOCATIONS WITH ARCHITECT. PROVIDE ENCLOSURES WITH PLENUM RATING WHERE REQUIRED.
S10	TRACKHEAD WITH NOMINAL NARROW FLOOD OPTIC, POSITIVE LOCKING IN BOTH TILT AND ROTATION, A MINIMUM OF 360° ROTATION AND 180° TILT, BLACK BAFFLE, BLACK FINISH, AND INTEGRAL, ELECTRONIC DRIVER	SURFACE TRACK	JUNO INTENSE	T381L-30K-80CRI-PDIM-NFL-BL IQ-L1-30-DIM-B-NF-xx	SOURCE: WHITE LED INTEGRAL OUTPUT: 1,000 LUMENS DELIVERED CCT: 3000K CRI: 80+	13 16	120	INTEGRAL PHASE DIM 100% - 5%	AUDITORIUM - CONTROL BOOTH CONFIRM COMPATIBILITY WITH CONTROL SYSTEM FOR QUIET, FLICKER FREE DIMMING.
	A SNOOT WITH BLACK FINISH	INTEGRAL	JUNO INTENSE	SNOOTBL-200	N/A	N/A	N/A	N/A	PROVIDE ONE (1) PER TRACKHEAD.
S11	NOT USED								
S12	RIGGING INDEX LIGHT	PER SPECIFICATION SECTION 11 61 33							AUDITORIUM - RIGGING WALL PROVIDED AND INSTALLED BY DIVISION 11 WITH ELECTRICAL CONNECTIONS BY DIVISION 26.
S13	HIGH BAY WITH NOMINAL 16 IN. DIA. PRISMATIC FROSTED ACRYLIC REFLECTOR, FLAT PRISMATIC BOTTOM LENS, 16% UPLIGHT, INTEGRAL DRIVER, SEALED OPTICAL CHAMBER, AND IP65 RATING	SUSPENDED CEILING	LITHONIA	ICBL-35000LM-ACFR-ACRFGL-MVOLT-GZ10-30K-90CRI-PM-5WHXD	SOURCE: WHITE LED INTEGRAL OUTPUT: 26,500 LUMENS DELIVERED CCT: 3000K CRI: 80+	249	PER E.E.	INTEGRAL 0-10V 100% - 10%	SCENE SHOP CONFIRM PENDANT LENGTH WITH PROJECT DRAWINGS. CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING HARDWARE.
S14	LINEAR HIGH BAY WITH NOMINAL 12 IN. WIDE BY 48 IN. LONG BY 3 IN. HIGH HOUSING, NARROW DISTRIBILTION, FROSTED ACRYLIC LENS, NATURAL ALUMINIUM FINISH, AND INTEGRAL DRIVER	SURFACE CEILING	LITHONIA	IBG-18000LM-HEF-AFL-ND-MVOLT-GZ10-30K-80CRI-HA-DNA	SOURCE: WHITE LED INTEGRAL OUTPUT: 15,000 LUMENS DELIVERED CCT: 3000K CRI: 80+	104	120	INTEGRAL 0-10V 100% - 10%	AUDITORIUM - BOTTOM OF PINRAIL GALLERY CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING HARDWARE.
S15-1	2X2 VOLUMETRIC TROFFER WITH CURVED PRISMATIC ACRYLIC REFRACTORS AND WHITE HOUSING FINISH	RECESSED CEILING	LITHONIA	2RTL2-33L-MVOLT-EZ1-LP830	SOURCE: WHITE LED INTEGRAL OUTPUT: 3,300 LUMENS DELIVERED CCT: 3000K CRI: 80+	36	PER E.E.	INTEGRAL 0-10V 100% - 1%	DRESSING ROOMS DRIVER SHALL BE ACCESSIBLE AND SERVICEABLE FROM BELOW AND WITHOUT REMOVING THE MOUNTINGS OR ADJACENT CONSTRUCTION. CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING HARDWARE.
S15-2	SAME AS TYPE S15-1 (EXCEPT FOR NOMINAL 2X4 SIZE AND LUMEN OUTPUT)	RECESSED CEILING	LITHONIA	2RTL4-48L-MVOLT-EZ1-LP830	SOURCE: WHITE LED INTEGRAL OUTPUT: 4,500 LUMENS DELIVERED CCT: 3000K CRI: 80+	47	120	INTEGRAL 0-10V 100% - 1%	CROSSOVER CORRIDOR SAME REMARKS AS TYPE S15-1.
S16	LINEAR INDUSTRIAL STRIP WITH NOMINAL 4 FT. LONG HOUSING, MAX. 4 IN. DEEP HOUSING, IMPACT RESISTANT FROSTED ACRYLIC LENS, AND INTEGRA,, ELECTRONIC DRIVER	SURFACE WALL	LITHONIA	WL4-30L-EZ1-LP830	SOURCE: WHITE LED INTEGRAL OUTPUT: 3,000 LUMENS DELIVERED CCT: 3000K CRI: 80+	28	120	INTEGRAL 0-10V 100% - 1%	AUDITORIUM - TECHNICAL GALLERIES CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING HARDWARE.
S17	LINEAR INDUSTRIAL STRIP WITH NOMINAL 4 FT. LONG HOUSING, MAX. 4 IN. DEEP HOUSING, IMPACT RESISTANT FROSTED ACRYLIC LENS, AND INTEGRA,, ELECTRONIC DRIVER	SURFACE CEILING	LITHONIA	WL4-40L-EZ1-LP830	SOURCE: WHITE LED INTEGRAL OUTPUT: 4,000 LUMENS DELIVERED CCT: 3000K CRI: 80+	40	120	INTEGRAL 0-10V 100% - 1%	AUDITORIUM - GRID IRON CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING HARDWARE.
S18	NOT USED								
S19	LINEAR FIXTURE WITH NOMINAL 3 IN. X 3 IN. SQUARE ?PROFILE, NOMINAL 4 FT., LENGTH, TWO-SIDED FROSTED ACRYLIC LENS, MATTE WHITE HOUSING FINISH, AND INTEGRAL ELECTRONIC DRIVER	SURFACE WALL	LUMENWERX BARTCO	CUBS-HLO-LED-80-900-30-4-UNV-MIKDR-1-DRM-W BSS750-4-30-DM-R-SM-SN-WH	SOURCE: WHITE LED INTEGRAL OUTPUT: 3,600 LUMENS DELIVERED CCT: 3000K CRI: 80+	28 36	120	INTEGRAL 0-10V 100% - 1%	AUDITORIUM - ORCHESTRA PIT & CORRIDORS DRIVER SHALL BE ACCESSIBLE AND SERVICEABLE FROM BELOW AND WITHOUT REMOVING THE MOUNTINGS OR ADJACENT CONSTRUCTION. CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING HARDWARE.
S20-1	DOWNLIGHT WITH NOMINAL 4 IN. APERTURE. MEDIUM-WIDE DISTRIBUTION, CLEAR SEMI-SPECULAR ALZAK REFLECTOR WITH SELF-FLANGE, AND INTEGRAL ELECTRONIC DIMMING DRIVER	RECESSED CEILING	GOTHAM	EVO-30/20-4AR-MWD-LSS-MVOLT-EDXB	SOURCE: WHITE LED INTEGRAL OUTPUT: 2,000 LUMENS DELIVERED CCT: 3000K CRI: 80+	24	120	INTEGRAL DMX-RDM 100% - 0.1%	AUDITORIUM - PARTERRE & VESTIBULES DRIVER SHALL BE ACCESSIBLE AND SERVICEABLE FROM BELOW AND WITHOUT REMOVING THE MOUNTINGS OR ADJACENT CONSTRUCTION. CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING HARDWARE.
S20-2	SAME AS TYPE S20-1 (EXCEPT FOR OUTPUT)	SUSPENDED CEILING	GOTHAM	EVO-30/25-4AR-MWD-LSS-MVOLT-EDXB	SOURCE: WHITE LED INTEGRAL OUTPUT: 2,500 LUMENS DELIVERED CCT: 3000K CRI: 80+	29	120	INTEGRAL DMX-RDM 100% - 0.1%	AUDITORIUM - PARTERRE SAME REMARKS AS TYPE S20-1.
S21-1	CYLINDER DOWNLIGHT WITH NOMINAL 6 IN. APERTURE, 10 IN. DIA X 16 IN. TALL HOUSING, 40-DEG. BEAM DISTRIBUTION, CLEAR SEMI-SPECULAR ALZAK REFLECTOR WITH SELF-FLANGE, AIRCRAFT CABLE SUSPENSION, AND INTEGRA,, ELECTRONIC DIMMING DRIVER	SUSPENDED CEILING	GOTHAM	ICO-CYL-30/65-6AR-LSS-40D-MVOLT-EDXB-ACC180-xxx	SOURCE: WHITE LED INTEGRAL OUTPUT: 6,500 LUMENS DELIVERED CCT: 3000K CRI: 80+	82	120	INTEGRAL DMX-RDM 100% - 0.1%	AUDITORIUM FINISH PER ARCHITECT. PENDANT CABLE LENGTH AS REQUIRED PER DRAWINGS. DRIVER SHALL BE ACCESSIBLE AND SERVICEABLE WITHOUT REMOVING THE MOUNTINGS OR ADJACENT CONSTRUCTION. CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING HARDWARE.
S21-2	SAME AS TYPE S21-1 (EXCEPT FOR 45-DEG. BEAM DISTRIBILTION)	SUSPENDED CEILING	GOTHAM	ICO-CYL-30/65-6AR-LSS-45D-MVOLT-EDXB-ACC180-xxx	SOURCE: WHITE LED INTEGRAL OUTPUT: 6,500 LUMENS DELIVERED CCT: 3000K CRI: 80+	82	120	INTEGRAL DMX-RDM 100% - 0.1%	AUDITORIUM SAME REMARKS AS TYPE S21-1.
S21-3	SAME AS TYPE S21-1 (EXCEPT FOR OUTPUT AND 55-DEG. BEAM DISTRIBUTION)	SUSPENDED CEILING	GOTHAM	ICO-CYL-30/75-6AR-LSS-55D-MVOLT-EDXB-ACC180-xxx	SOURCE: WHITE LED INTEGRAL OUTPUT: 7,500 LUMENS DELIVERED CCT: 3000K CRI: 80+	96	120	INTEGRAL DMX-RDM 100% - 0.1%	AUDITORIUM SAME REMARKS AS TYPE S21-1.
S21-4	SAME AS TYPE S21-1 (EXCEPT FOR OUTPUT AND 60-DEG. BEAM DISTRIBUTION)	SUSPENDED CEILING	GOTHAM	ICO-CYL-30/75-6AR-LSS-60D-MVOLT-EDXB-ACC180-xxx	SOURCE: WHITE LED INTEGRAL OUTPUT: 7,500 LUMENS DELIVERED CCT: 3000K CRI: 80+	96	120	INTEGRAL DMX-RDM 100% - 0.1%	AUDITORIUM SAME REMARKS AS TYPE S21-1.

TYPE	FIXTURE DESCRIPTION	MOUNTING	MANUFACTURER	CATALOG NUMBER	LIGHT PROPERTIES	WATTS / SOURCE	VOLT.	CONTROL	LOCATION / REMARKS
S21-5	SAME AS TYPE S21-1 (EXCEPT FOR 55-DEG. BEAM DISTRIBUTION)	SUSPENDED CEILING	GOTHAM	ICO-CYL-30/65-6AR-LSS-55D-MVOLT-EDXB-ACC180-xxx	SOURCE: WHITE LED INTEGRAL OUTPUT: 6,500 LUMENS DELIVERED CCT: 3000K CRI: 80+	82	120	INTEGRAL DMX-RDM 100% - 0.1%	AUDITORIUM SAME REMARKS AS TYPE S21-1.
S22-1	CYLINDER DOWNLIGHT WITH NOMINAL 6 IN. APERTURE, 10 IN. DIA. BY 19.5 IN. TALL HOUSING, 60-DEG. BEAM DISTRIBUTION, CLEAR SEMI-SPECULAR ALZAK REFLECTOR WITH SELF-FLANGE, BLACK HOUSING FINISH, AND INTEGRAL ELECTRONIC DIMMING DRIVER	SURFACE CEILING	GOTHAM	ICO-CYL-30/65-6AR-LSS-60D-MVOLT-EDXB-FCM-DBL	SOURCE: WHITE LED INTEGRAL OUTPUT: 6,500 LUMENS DELIVERED CCT: 3000K CRI: 80+	83	120	INTEGRAL DMX-RDM 100% - 0.1%	BLACK BOX THEATRE DRIVER SHALL BE ACCESSIBLE AND SERVICEABLE FROM BELOW AND WITHOUT REMOVING THE MOUNTINGS OR ADJACENT CONSTRUCTION. CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING HARDWARE.
S22-2	SAME AS TYPE S22-1 (EXCEPT FOR OUTPUT AND 70-DEG. BEAM DISTRIBUTION)	SURFACE CEILING	GOTHAM	ICO-CYL-30/55-6AR-LSS-70D-MVOLT-EDXB-FCM-DBL	SOURCE: WHITE LED INTEGRAL OUTPUT: 5,500 LUMENS DELIVERED CCT: 3000K CRI: 80+	65	120	INTEGRAL DMX-RDM 100% - 0.1%	BLACK BOX THEATRE SAME REMARKS AS TYPE S22-1.
S23	CYLINDER DOWNLIGHT WITH NOMINAL 6 IN. APERTURE, 8 IN. DIA X 13 IN. TALL HOUSING, MEDIUM-WIDE DISTRIBUTION, CLEAR SEMI-SPECULAR ALZAK REFLECTOR WITH SELF-FLANGE, BLACK HOUSING FINISH, AND INTEGRAL ELECTRONIC DIMMING DRIVER	SURFACE CEILING	GOTHAM	EVO-CYL-30/20-6AR-MWD-LSS-MVOLT-EDXB-FCM-DBL	SOURCE: WHITE LED INTEGRAL OUTPUT: 2,000 LUMENS DELIVERED CCT: 3000K CRI: 80+	23	120	INTEGRAL DMX-RDM 100% - 0.1%	AUDITORIUM - VESTIBULES DRIVER SHALL BE ACCESSIBLE AND SERVICEABLE FROM BELOW AND WITHOUT REMOVING THE MOUNTINGS OR ADJACENT CONSTRUCTION. CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING HARDWARE.
S24	INDICATOR LIGHT WITH ROUND RED DIFFUSER AND INTEGRAL ELECTRONIC DRIVER	RECESSED WALL	COLE ELCAST LIGHTING	L150G-N-RED FE-1-1WLED-RED-120-MW	SOURCE: LED INTEGRAL OUTPUT: N/A CCT: N/A CRI: N/A	3 1	PER E.E.	INTEGRAL NON-DIM	OUTSIDE DRESSING ROOMS PROVIDE PILOT LIGHT FOR DRESSING ROOM COUNTER RECEPTACLES AND MIRROR LIGHTS PER NEC 520.73.
S25	INDUSTRIAL 'JELLY JAR' FIXTURE WITH IMPACT RESISTANT GUARD, RED GLASS GLOBE, MATTE BLACK FINISH, AND INTEGRAL ELECTRONIC DRIVER	SURFACE WALL	CANLET SPECTRUM	68-03-15WLED-WF-OG-14(MOD) WJ1GV-15L-40K-DS10X-RDJ1(MOD)-CP104-MB MOD = RED GLASS GLOBE WITH INSIDE FROST	SOURCE: WHITE LED INTEGRAL OUTPUT: ~1,400 LUMENS SOURCE CCT: 3500K OR 4000K (STATIC) CRI: 80+	15 11	120	INTEGRAL 0-10V 100% - 10%	AUDITORIUM - RIGGING WALL CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING HARDWARE.
S26	LENSED WALLWASH FIXTURE WITH NOMINAL 4 IN. DIA. APERTURE, SEMI-SPECULAR CLEAR REFLECTOR WITH SELF FLANGE, AND INTEGRAL ELECTRONIC DRIVER	RECESSED CEILING	GOTHAM	EVO-LW-30/20-4AR-LSS-MVOLT-EDXB	SOURCE: WHITE LED INTEGRAL OUTPUT: 1,300 LUMENS DELIVERED CCT: 3000K CRI: 80+	22	120	INTEGRAL DMX-RDM 100% - 0.1%	AUDITORIUM - PARTERRE DRIVER SHALL BE ACCESSIBLE AND SERVICEABLE FROM BELOW AND WITHOUT REMOVING THE MOUNTINGS OR ADJACENT CONSTRUCTION. CONTRACTOR SHALL PROVIDE SHOP DRAWING SHOWING DIMENSIONED FIXTURE CONFIGURATIONS FOR EACH CONDITION.
S27	LINEAR DIRECT-VIEW ACCENT FIXTURE WITH NOMINAL 0.5 IN. APERTURE. FROSTED WHITE DIFFUSING LENS, AND REMOTE DIMMABLE DRIVER	RECESSED CHANNEL	LIGHT TECHNOLOGIES DELTA LIGHT	T-24-Q30(MOD)-S-xx-NC-xx 6-425-03-00-00-B MOD = 3000K CCT	SOURCE: WHITE LED INTEGRAL OUTPUT: xxx LUMENS PER FT DELIVERED CCT: 3000K CRI: 80+	3 W / FT	24 VDC	REMOTE DMX-RDM 100% - 0.1%	AUDITORIUM - CHEEK WALLS CONTRACTOR SHALL PROVIDE ALL NECESSARY POWER SUPPLIES, FITTINGS, ACCESSORIES, ETC AS NEEDED FOR A COMPLETE, FUNCTIONAL SYSTEM. REFER TO ARCHITECTURAL ELEVATIONS FOR OVERALL RUN LENGTHS. CONTRACTOR SHALL PROVIDE SHOP DRAWING SHOWING DIMENSIONED FIXTURE CONFIGURATIONS FOR EACH CONDITION.
	A MUD-IN MOUNTING CHANNEL	RECESSED WALL	LIGHT TECHNOLOGIES DELTA LIGHT	35-EXT01-001-00-MOD 6-425-01-00-00-B-MOD MOD = PLASTER FLANGES FACTORY BENT TO FOLLOW WALL CURVATURE	N/A	N/A	N/A	N/A	
	B REMOTE POWER SUPPLY	REMOTE			N/A	N/A	120	SEE ABOVE	POWER SUPPLIES SHALL FEED MULTIPLE FIXTURES. POWER SUPPLIES SHALL BE PROVIDED BY FIXTURE MANUFACTURER. CONFIRM SIZE AND QUANTITY WITH FIXTURE MANUFACTURER. POWER SUPPLIES SHALL BE LOCATED IN ACCESSIBLE AND VENTILATED LOCATIONS. CONFIRM LOCATIONS WITH ARCHITECT. PROVIDE ENCLOSURES WITH PLENUM RATING WHERE REQUIRED.

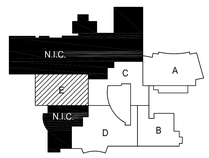
ONLY SUBSTITUTIONS SUBMITTED TO ARCHITECT AND THEATRE CONSULTANT AT LEAST 10 DAYS PRIOR TO BID DATE WILL BE CONSIDERED.

NOTES: LOCATIONS NOTED IN "LOCATION / REMARKS" COLUMN ARE FOR REFERENCE ONLY. REFER TO DRAWINGS TO DETERMINE LOCATIONS FOR EACH FIXTURE TYPE.
LIGHTING SHOP DRAWING SUBMITTALS SHALL INCLUDE LAMP INFORMATION SHEETS ALONG WITH FIXTURE INFORMATION SHEETS.
LIGHTING SHOP DRAWING SUBMITTALS SHALL BE PREPARED BY MANUFACTURERS AND/OR MANUFACTURERS REPRESENTATIVES.
VERIFY CEILING COMPATIBILITY, MOUNTING CONDITIONS, CLEARANCES AND STRUCTURAL SUSPENSION SYSTEM PRIOR TO FIXTURE PROCUREMENT.
ALL CIRCUITS ARE 2-WIRE. NO COMMON NEUTRALS.
ALL FIXTURE SUBSTITUTIONS MUST BE APPROVED BY ARCHITECT AND THEATRE CONSULTANT PRIOR TO BID.
XXX DESIGNATES INFORMATION TO BE SUPPLIED BY CONTRACTOR.
REFER TO THE ARCHITECTURAL LIGHTING FIXTURE SPECIFICATION FOR ADDITIONAL INFORMATION.
SCHULER SHOOK DOES NOT PROVIDE EMERGENCY LIGHTING FIXTURE SPECIFICATIONS OR LAYOUTS. ALTHOUGH SCHULER SHOOK SPECIFIED FIXTURES MAY BE USED BY THE ENGINEER FOR EMERGENCY LIGHTING, ANY REQUIRED REVISIONS TO THE FIXTURES TO MAKE THEM SUITABLE FOR EMERGENCY USE ARE THE SOLE RESPONSIBILITY OF THE ELECTRICAL ENGINEER.

1 LIGHTING FIXTURE SCHEDULE
SCALE: N/A

DISTRICT 99
COMMUNITY HIGH SCHOOL DISTRICT 99

Wight
Wight & Company
wightco.com
2500 North Frontage Road
Darien, IL 60561
P 630.969.7000
F 630.969.7979



NORTH

THEATRE PLANNERS / LIGHTING DESIGNERS
Schuler Shook
750 NORTH ORLEANS
CHICAGO, IL 60654
T 312 944 8230 F 312 944 8297
schulershook.com

NOT FOR CONSTRUCTION

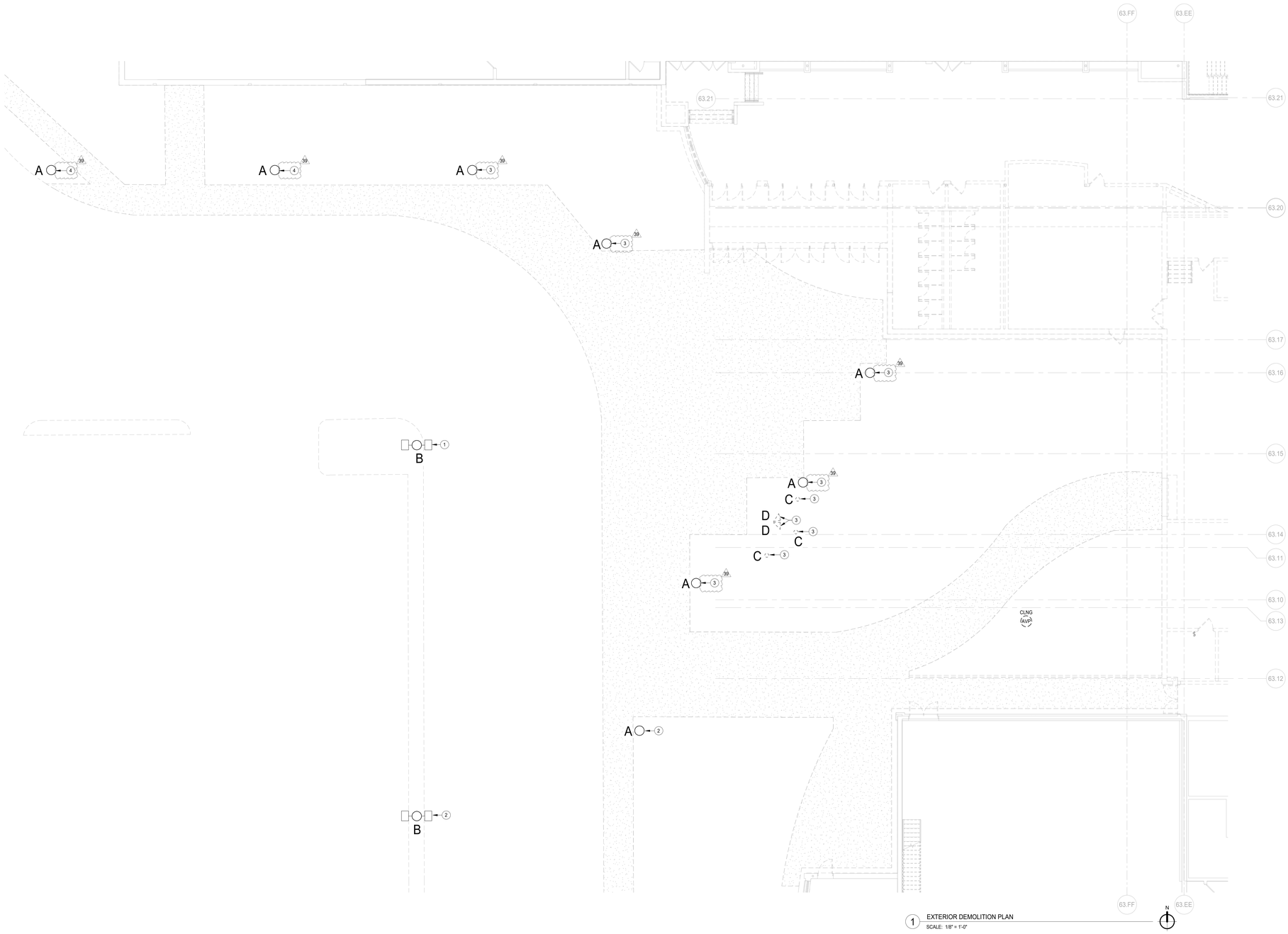
REV	ISSUE	DATE
-	ISSUED FOR 100% CD - PHASE C	11.19.2019
-	ISSUED FOR 90% CD - PHASE C	11.01.2019
-	ISSUED FOR 75% CD - PHASE C	10.14.2019
-	ISSUED FOR 25% CD - PHASE C	08.30.2019
-	ISSUED FOR 100% DD - PHASE C	07.12.2019

DOWNERS GROVE SOUTH HIGH SCHOOL

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

LIGHTING FIXTURE SCHEDULE

Project Number:
5274-42
Drawn By:
JFJ
Sheet:
LD0.10



1 EXTERIOR DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. LOCATION OF EXISTING UTILITY TRANSFORMER, PRIMARY SERVICE ENTRANCE SWITCHING CENTER, EXISTING MANHOLES AND ALL OTHER ELECTRICAL EQUIPMENT ARE APPROXIMATE BASED ON AS-BUILT DRAWINGS. FIELD VERIFY EXACT LOCATIONS.
2. UNDERGROUND FEEDER ROUTING IS DIAGRAMMATIC AND BASED ON AS-BUILT DRAWINGS. FIELD VERIFY EXACT ROUTING AS NEEDED THROUGHOUT THE PROJECT.
3. CONTRACTOR SHALL PROTECT AND MAINTAIN THE CONTINUITY OF EXISTING ELECTRICAL SERVICE THROUGHOUT THE CONSTRUCTION.
4. CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS OF NEW EQUIPMENT AND INSTALLATION WITH MINIMUM DOWNTIME.
5. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND SHALL CONFORM TO ALL LOCAL CODES.
6. ALL MATERIAL AND LABOR SHALL BE GUARANTEED FOR ONE YEAR AFTER FINAL ACCEPTANCE BY THE ENGINEER.
7. MINIMUM SIZE CONDUIT SHALL BE 3/4" E.M.T.
8. MINIMUM SIZE WIRE SHALL BE #12 THWN-2, WITH #14 USED FOR CONTROL WIRING.
9. WIRE #14 THROUGH #10 SHALL BE COPPER THWN-2. ALUMINUM WIRE NOT ACCEPTABLE. ALL WIRE SHALL BE COLOR CODED.
10. CONDUIT UNDER DRIVES AND PARKING LOTS SHALL BE EITHER IMC OR GRMC BURIED MINIMUM 24 INCHES.
11. ALL CONDUIT OUTDOORS OR BURIED SHALL BE EITHER IMC, GRMC OR SCHEDULE 80 POLYETHYLENE.
12. THIS CONTRACTOR SHALL PROVIDE ALL NECESSARY CUTTING AND PATCHING INCLUDING SLEEVES AND INSERTS.
13. BEFORE SUBMITTING HIS BID, THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE TO ASCERTAIN ALL WORK INVOLVED IN THE PROJECT AND TO GUAGE EXISTING CONDITIONS.
14. THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH PROJECT MANAGER.
15. THIS CONTRACTOR SHALL MAKE NECESSARY MODIFICATIONS AND ADJUSTMENTS TO ALL ELECTRICAL ITEMS AND EQUIPMENT AS MAY BE REQUIRED BY THIS WORK.
16. J.U.L.I.E. MUST BE CONTACTED PRIOR TO ANY DIGGING OR EXCAVATION. ANY DAMAGE TO ANY EXISTING UNDERGROUND UTILITIES, MARKED BY J.U.L.I.E. OR NOT SHALL BE REPAIRED BY THIS CONTRACTOR AT THEIR EXPENSE.
17. THIS CONTACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES NOT MARKED BY J.U.L.I.E. IF DAMAGED, THIS CONTRACTOR SHALL REPAIR AT THEIR OWN EXPENSE.
18. EACH HEAD TO OF THE FIXTURE MUST BE WIRED DOWN TO THE HANDHOLE INDEPENDENTLY. ALL LIGHTING CIRCUITS MUST BE PRESENT AT THE BASE OF EACH POLE SO THAT WIRING CAN BE ACCESSED FOR FUTURE CIRCUIT MODIFICATION/ REWIRING AS REQUIRED.
19. PROVIDE ALL TRENCHING, AND BACKFILL AS REQUIRED. BACKFILLPER ARCHITECTS REQUIREMENTS. SURFACE SUITABLE FOR FINAL PAVEMENT LAYER. FINAL PAVEMENT BY OTHERS, THIS CONTRACTOR TO COORDINATE WORK WITH ALL OTHER TRADES PRIOR TO ANY EXCAVATION.
20. ALL PENETRATIONS THROUGH THE BUILDING SHALL BE SEALED WATER TIGHT PER ARCHITECTS REQUIREMENTS. SECURELY MOUNT CONDUIT TO WALL AS REQUIRED.
21. ALL 90 DEGREE BENDS TO RIGID PIPE.

(#) KEYNOTES

1	DISCONNECT AND REMOVE EXISTING LIGHITNG POLES AND FIXTURE ALONG WITH CONTROLS AND PRESERVE DURING CONSTRUCTION. RELOCATE EXISTING LIGHITNG FIXTURES AND EXISTING LIGHITNG POLE ON NEW LIGHTING BASE PER NEW LAYOUT.
2	EXISTING TO REMAIN.
3	DISCONNECT AND REMOVE EXISTING LIGHT FIXTURES ALONG WITH CONTROLS. PULL BACK THE CIRCUITS TO THE SOURCE AND IDENTIFY AS SPARE.
39 4	EXISTING FIXTURES TO REMAIN AND REWIRED PER NEW PLANS.

DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

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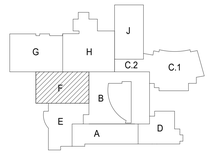


NORTH

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

EXTERIOR DEMOLITION PLAN

Project Number:
5274-42
Drawn By:
Author
Sheet:

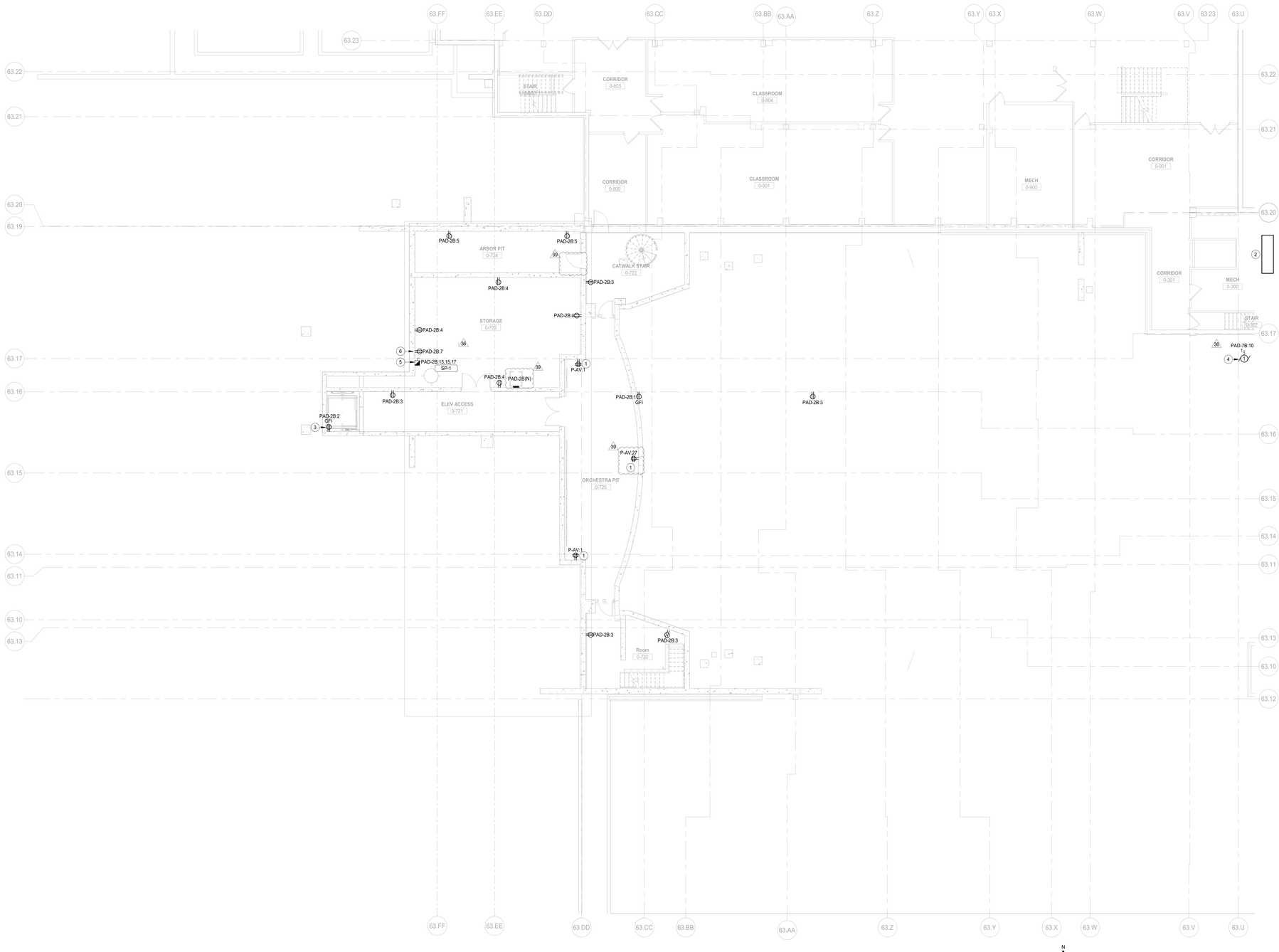
ED1.00c

SYMBOL LEGEND
E - EXISTING TO REMAIN
N - NEW
R- EXISTING TO BE REMOVED
RE- NEW LOCATION OF EXISTING RELOCATED EQUIPMENT

#	KEYNOTES
1	REFER TO THEATRE AV DRAWINGS FOR DETAILS.
2	APPROXIMATE LOCATION OF EXISTING DISTRIBUTION PANEL "DP-B"
3	POWER FOR ELEVATORT SUMP PUMP. REFER TO PLUMBING DRAWINGS FOR MORE DETAILS.
4	POWER FOR PUMP CCP-14 LOCATED IN THE TUNNEL. PLEASE VERIFY EXACT LOCATION OF THE PUMP IN THE TUNNEL WITH HVAC DRAWINGS PRIOR TO START.
5	POWER FOR SUBMERSIBLE SUMP PUMP. REFER TO PLUMBING DRAINGS FOR EXACT LOCATION AND PUMP MANUFACTURER FOR EXACT POWER REQUIREMENTS PRIOR TO START.
6	POWER FOR PUMP ALARM. REFER TO PLUMBING DRAWINGS FOR EXACT DETAILS.

GENERAL NOTES

1. THESE NOTES APPLICABLE TO ALL POWER PLANS
2. THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR SHARED NEUTRAL CONDUCTORS WHICH THE MINIMUM SIZE SHALL BE #10 AWG. THE MINIMUM CONDUIT SIZE FOR HOMERUNS AND BRANCH FEEDS TO POWER OUTLETS SHALL BE 3/4". 1/2" CONDUIT IS ACCEPTABLE FOR BRANCH WIRING TO END OF THE LINE RECEPTACLES ONLY.
3. ALL POWER BRANCH CIRCUITS SHALL TERMINATE AT 20A/1-POLE CIRCUIT BREAKERS IN PANELBOARD INDICATED UNLESS NOTED OTHERWISE.
4. THE CONTRACTOR SHALL PROVIDE ALL PENETRATIONS, SLEEVES, AND SEALANT AS REQUIRED THROUGH PARTITIONS TO ACCOMMODATE THE FIRE ALARM, PAGING, SECURITY, AUDIO/VISUAL, VOICE, AND DATA CABLING. ANY PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE PROPERLY SEALED AND TREATED TO MAINTAIN THE FIRE STOPPING RATING OF THE WALLS, FLOORS, AND CEILINGS.
5. BACKBOXES ARE TO BE MOUNTED OFFSET, NOT BACK TO BACK.
6. CIRCUIT NUMBER(S), WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF "AS BUILT" DRAWINGS.
7. UNLESS INDICATED OTHERWISE, ALL MATERIALS REQUIRED TO PROVIDE BRANCH CIRCUITS AND FEEDERS ARE TO BE NEW.
8. REFER TO MECHANICAL AND PLUMBING SHEETS FOR ADDITIONAL EQUIPMENT INFORMATION.
9. ANY ELECTRICAL DEVICES ON NEW WALLS SHALL BE FLUSH MOUNTED. NO WIREMOLDS ARE ACCEPTABLE ON NEW WALLS UNLESS NOTED OTHERWISE.
10. VERIFY RECEPTACLE LOCATIONS WITH ARCHITECTURAL FURNITURE LAYOUT TO ENSURE PROPER ACCESSIBILITY.
11. LOW VOLTAGE WIRING SHALL NOT LIE ON TOP OF CEILING GRID SYSTEM. WIRING SHALL BE SUPPORTED AT INTERVALS NOT EXCEEDING 5 FEET BY UTILIZING J-HOOKS SUPPORTED BY STRUCTURAL MEMBERS. WIRING SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO STRUCTURAL MEMBERS.
12. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL POINTS.
13. SPECIAL ATTENTION SHALL BE PAID TO ALL CONDUIT ROUTING IN OPEN CEILING SPACE FOR AESTHETIC PURPOSES. ALL EXPOSED CONDUITS SHALL BE ROUTED PERPENDICULAR AND PARALLEL TO BUILDING LINES AND TIGHT TO CEILING/STRUCTURAL CORNERS. WHERE THIS IS NOT FEASIBLE, SUBMIT CONDUIT ROUTING PLAN TO ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
14. CONTRACTOR SHALL PROVIDE COMMON DISCONNECTING MEANS FOR BRANCH CIRCUITS UTILIZING SHARED NEUTRALS PER ARTICLE 210.4(B). HANDLE TIES ARE ACCEPTABLE WHEN BREAKERS ARE "SLASH RATED" FOR THE HIGHER SYSTEM VOLTAGE RATING OF THE SYSTEM. WHEN HANDLE TIES ARE NOT POSSIBLE DUE TO NON-ADJACENT BREAKERS, PROVIDE A DEDICATED NEUTRAL FOR EACH UNGROUNDED CONDUCTOR.
15. ALL DEMOLITION OF THE ELECTRICAL SYSTEM AS NOTED FOR ON THE DEMOLITION DRAWINGS SHALL BE COORDINATED WITH THE RENOVATION REQUIREMENTS TO DETERMINE THIS CONTRACTORS WORK.
16. IT IS THE INTENT OF THE ELECTRICAL DEMOLITION DRAWING(S) TO INDICATE AREAS IN WHICH ELECTRICAL EQUIPMENT, CONDUIT, LIGHTING FIXTURES, DEVICES, ETC. NEED TO BE REMOVED, RELOCATED, OR MODIFIED BY THIS CONTRACTOR TO ALLOW FOR THE RENOVATION PHASE OF CONSTRUCTION. THE ELECTRICAL DEMOLITION PLAN IS FOR REFERENCE PURPOSES ONLY AND IT IS NOT INTENDED TO BE THE SOLE SOURCE OF EXISTING CONDITIONS.
17. THE CONTRACTOR SHALL VISIT THE BUILDING, BEFORE SUBMITTING HIS BID, TO VERIFY THE EXISTING CONDITIONS WHICH WILL AFFECT HIS WORK.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE ELECTRICAL DEMOLITION REQUIRE DTO ACCOMMODATE THE RENOVATION. REMOVE AS REQUIRED ALL LIGHTING FIXTURES, RECEPTACLES, EQUIPMENT DEVICES, ETC. PULL OUT ALL UNUSED CONDUCTORS AND CABLES. REMOVE ALL ABANDONED CONDUIT. ELECTRICALLY DISCONNECT AIR HANDLING UNITS, ELECTRICAL WATER HEATERS, AND EQUIPMENT FOR REMOVAL BY OTHERS. ALL REMOVED EQUIPMENT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
19. REFER TO THE MECHANICAL AND PLUMBING DEMOLITION DRAWINGS FOR ALL MECHANICAL EQUIPMENT THAT IS TO BE ELECTRONICALLY DISCONNECTED OR REMOVED.
20. THIS CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL DOWN STREAM ELECTRICAL DEVICES AFFECTED BY THE DEMOLITION SHALL BE IN FULL OPERATION AFTER WORK IS COMPLETE.
21. THE OWNER SHALL HAVE FULL SALVAGE RIGHTS OVER ANY ELECTRICAL DEVICES THAT ARE SCHEDULED TO BE DEMOLISHED. COORDINATE IN FIELD WITH OWNER.
22. TO CONTROL ALL THE SINGLE PHASE FANS AND PUMP PROVIDE MANUAL MOTOR STARTER THERMAL OVERLOAD SWITCH AND 120V,20AMPS. CONTROL RELAY/CONTACTOR TO CONTROL PUMP/FAN (VERIFY CONTROL VOLTAGE WITH BUILDING AUTOMATION SYSTEM CONTRACTOR).
23. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
24. REFER TO SPECIFICATION SECTION 260535 FOR ELECTRICAL BOX PUTTY PAD REQUIREMENTS FOR ACOUSTICALLY CRITICAL AND ACOUSTICALLY SENSITIVE WALLS AND PARTITIONS AS DEFINED IN THE AC1 SERIES DRAWINGS.



1 LOWER LEVEL POWER PLAN AREA A
SCALE: 1/8" = 1'-0"

DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

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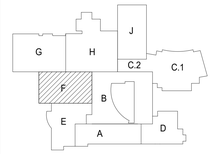

NORTH

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
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36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

LOWER LEVEL POWER PLAN AREA F

Project Number:
5274-42
Drawn By:
Author
Sheet:

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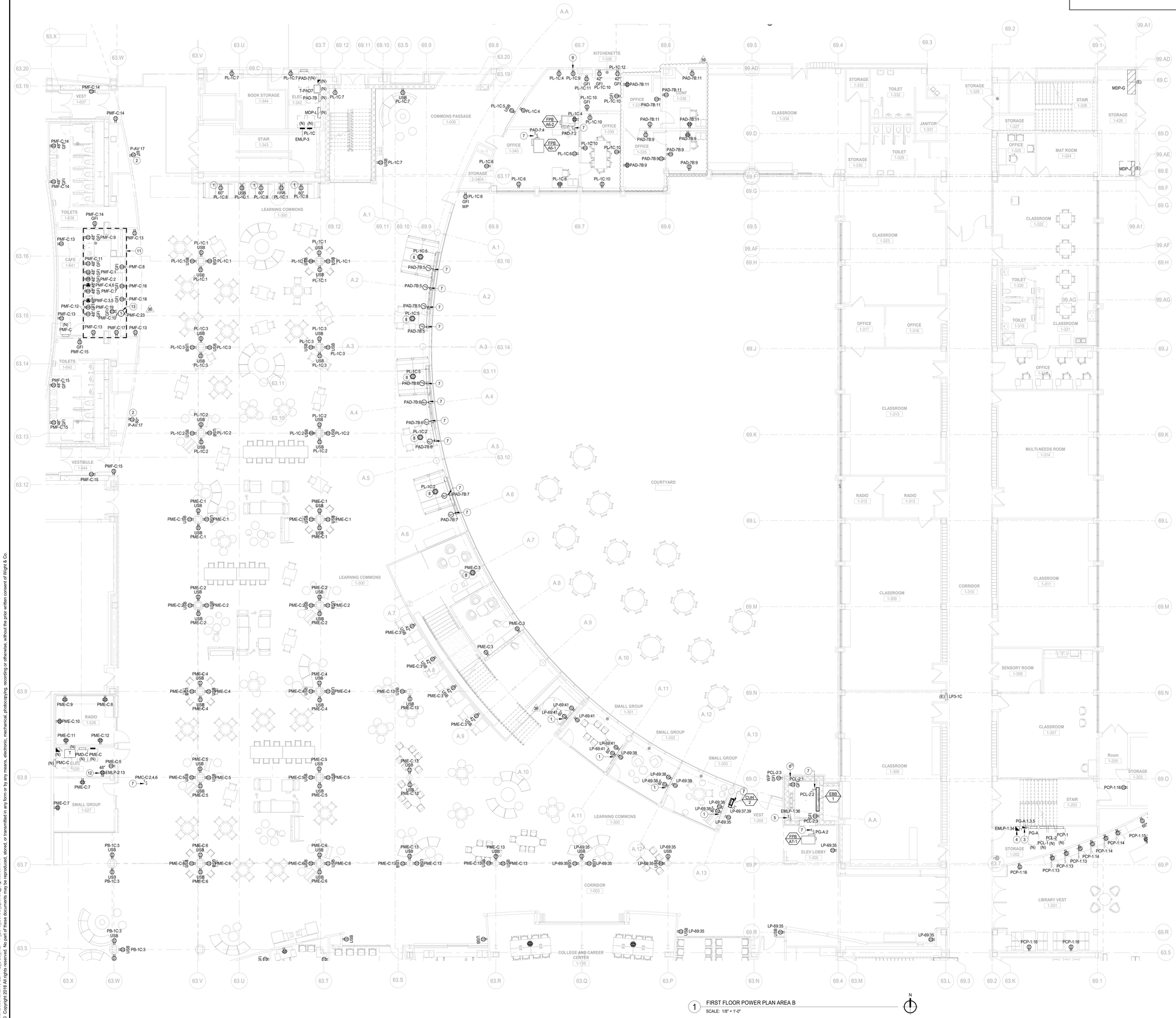

1 FIRST FLOOR POWER PLAN AREA B
SCALE: 1/8" = 1'-0"

SYMBOL LEGEND

E - EXISTING TO REMAIN

N - NEW

R- EXISTING TO BE REMOVED

RE- NEW LOCATION OF EXISTING RELOCATED EQUIPMENT

GENERAL NOTES

1. THESE NOTES APPLICABLE TO ALL POWER PLANS
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22. TO CONTROL ALL THE SINGLE PHASE FANS AND PUMP PROVIDE MANUAL MOTOR STARTER THERMAL OVERLOAD SWITCH AND 120V,20AMPS. CONTROL RELAY/CONTACTOR TO CONTROL PUMP/FAN.(VERIFY CONTROL VOLTAGE WITH BUILDING AUTOMATION SYSTEM CONTRACTOR).
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KEYNOTES

1. POWER FOR TV SCREEN, REFER TO AV DRAWINGS FOR EXACT LOCATION AND MORE DETAILS PRIOR TO START.
2. POWER FOR TV SCREEN, REFER TO AV AND THEATRE CONSULTANT DRAWINGS FOR ELEVATIONS AND BACK BOX REQUIREMENTS. PRIOR TO START.
3. MAIN FUSED 30 AMP DISCONNECT FOR ELEVATOR WITH AUXILLARY CONTACT SWITCH FOR THE ELEVATOR SYSTEM. THE MAIN ELEVATOR DISCONNECT TO FEED THE AUXILLARY DISCONNECT. MAIN DISCONNECT TO HAVE PROVISIONS TO BE LOCKED OUT AND TAGGED DURING SERVICING. REFER TO ELEVATOR MANUFACTURER SPECIFICATIONS AND SUBMITTALS FOR ADDITIONAL SCOPE OF WORK AND REQUIREMENTS. PROVIDE ENGRAVED TAG "ELEVATOR MAIN DISCONNECT".
4. LOCKABLE DISCONNECT FOR ELEVATOR CAB LIGHTING, REFER TO ELEVATOR SPECIFICATIONS FOR MORE DETAILS.
5. POWER FOR ELEVATOR VENTILATION FAN, REFER TO ELEVVATOR SUBMITTALS AND MANUFACTURER REQUIREMENTS FOR EXACT LOCATION OF THE FAN AND ADDITIONAL POWER REQUIREMENTS.
6. POWER FOR ELEVATOR SUMP PUIMP LOCATED IN THE PIT, LOCATE THE RECEPTACLE IN THE ELEVATOR PIT. COORDIANTE EXACT LOCATION OF THE SUMP PUMP PRIOR TO INSTALL POWER.
7. POWER FOR HVAC EQUIPMENT. REFER TO HVAC DRAWINGS FOR EXACT LOCATION AND MANUFACTURER REQUIREMENTS FOR POWER.
8. LEGRAND WIREMOLD 880 SERIES RECESSED FLOOR BOX WITH DUPLEX RECEPTACLE. PROVIDE DUPLEX RECEPTACLE. FLOOR BOX COVER PER ARCHITECTS SELECTION. EXACT LOCATION OF THE BOX NEED TO BE COORDINATED WITH THE ARCHITECTS DRAWING PRIOR TO START.
9. POWER FOR PRINTER.
10. NOT USED.
11. REFER TO KITCHEN CONSULTANT DRAWINGS, FOOD SERVICE EQUIPMENT SCHEDULE FOR EXACT TYPE OF CONNECTION, ELEVATION, AND FOR MORE DETAILS.
12. POWER FOR IDF CABINET, REFER TO TECHNOLOGY DRAWINGS AND DETAILS FOR EXACT LOCATION AND ADDITIONAL SCOPE OF WORK PRIOR TO START. THIS LOCATION IS SHOWN FOR REFERENCE ONLY.
13. POWER FOR OVERHEAD COILING SECURITY DOOR. PROVIDE CONTROL KEY SWITCH. COORDINATE EXACT LOCATION OF THE SWITCH WITH THE ARCHITECT PRIOR TO START.

DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

Wight

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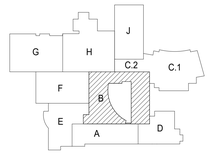

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
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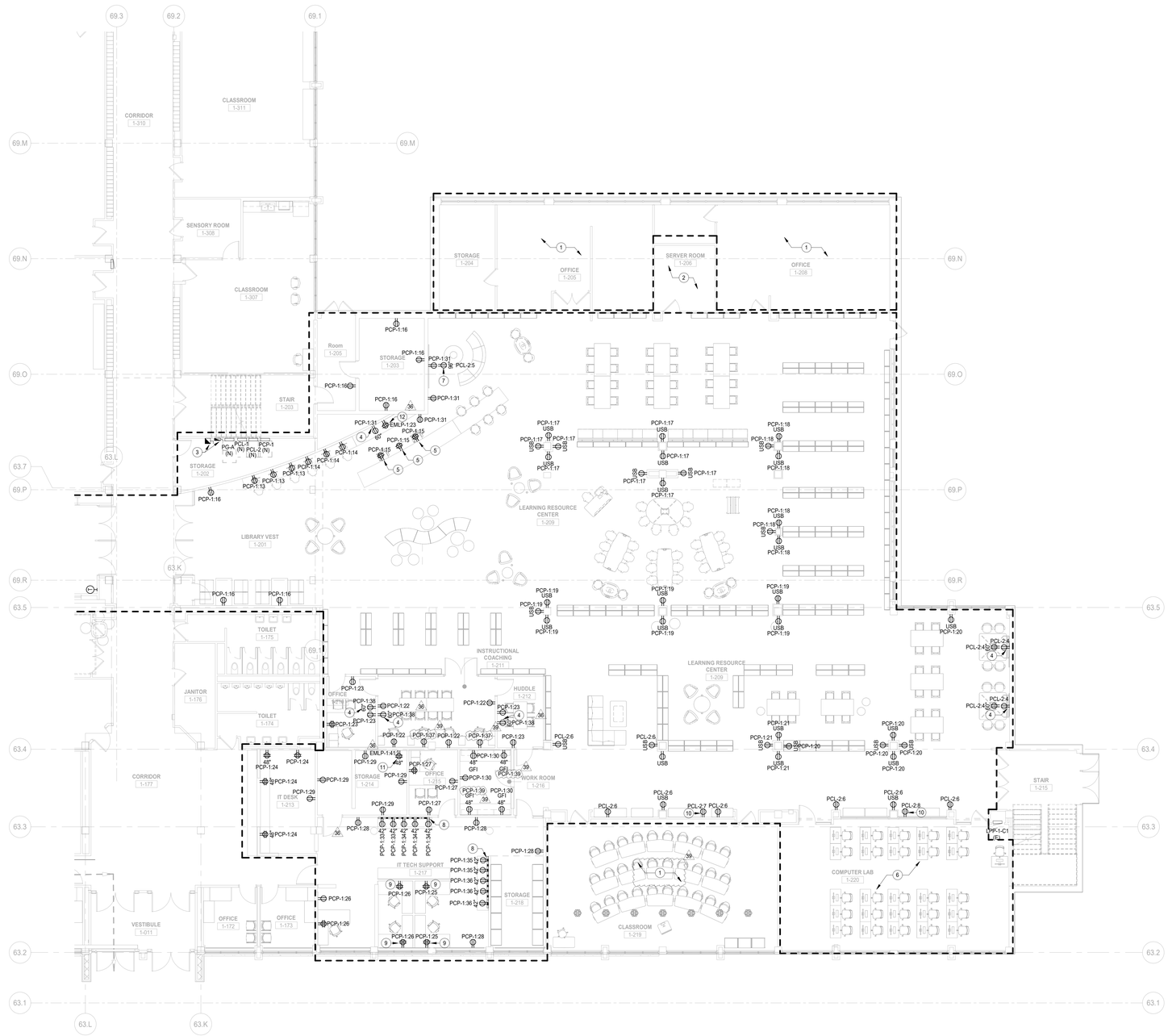
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019
	ISSUED FOR 100% DD	07.12.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

FIRST FLOOR POWER PLAN AREA B

Project Number:
5274-42
Drawn By:
Author
Sheet:
E2.01B-1c



1 FIRST FLOOR POWER PLAN AREA D
SCALE: 1/8" = 1'-0"

N

SYMBOL LEGEND

E - EXISTING TO REMAIN

N - NEW

R- EXISTING TO BE REMOVED

RE- NEW LOCATION OF EXISTING RELOCATED EQUIPMENT

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12. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL POINTS.
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14. CONTRACTOR SHALL PROVIDE COMMON DISCONNECTING MEANS FOR BRANCH CIRCUITS UTILIZING SHARED NEUTRALS PER ARTICLE 210.4(B). HANDLE TIES ARE ACCEPTABLE WHEN BREAKERS ARE "SLASH RATED" FOR THE HIGHER SYSTEM VOLTAGE RATING OF THE SYSTEM. WHEN HANDLE TIES ARE NOT POSSIBLE DUE TO NON-ADJACENT BREAKERS, PROVIDE A DEDICATED NEUTRAL FOR EACH UNGROUNDED CONDUCTOR.
15. ALL DEMOLITION OF THE ELECTRICAL SYSTEM AS NOTED FOR ON THE DEMOLITION DRAWINGS SHALL BE COORDINATED WITH THE RE RENOVATION REQUIREMENTS TO DETERMINE THIS CONTRACTORS WORK.
16. IT IS THE INTENT OF THE ELECTRICAL DEMOLITION DRAWING(S) TO INDICATE AREAS IN WHICH ELECTRICAL EQUIPMENT, CONDUIT, LIGHTING FIXTURES, DEVICES, ETC. NEED TO BE REMOVED, RELOCATED, OR MODIFIED BY THIS CONTRACTOR TO ALLOW FOR THE RENOVATION PHASE OF CONSTRUCTION. THE ELECTRICAL DEMOLITION PLAN IS FOR REFERENCE PURPOSES ONLY AND IT IS NOT INTENDED TO BE THE SOLE SOURCE OF EXISTING CONDITIONS.
17. THE CONTRACTOR SHALL VISIT THE BUILDING, BEFORE SUBMITTING HIS BID, TO VERIFY THE EXISTING CONDITIONS WHICH WILL AFFECT HIS WORK.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE ELECTRICAL DEMOLITION REQUIRE DTO ACCOMMODATE THE RENOVATION. REMOVE AS REQUIRED ALL LIGHTING FIXTURES, RECEPTACLES, EQUIPMENT DEVICES, ETC. PULL OUT ALL UNUSED CONDUCTORS AND CABLES. REMOVE ALL ABANDONED CONDUIT. ELECTRICALLY DISCONNECT AIR HANDLING UNITS, ELECTRICAL WATER HEATERS, AND EQUIPMENT FOR REMOVAL BY OTHERS. ALL REMOVED EQUIPMENT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
19. REFER TO THE MECHANICAL AND PLUMBING DEMOLITION DRAWINGS FOR ALL MECHANICAL EQUIPMENT THAT IS TO BE ELECTRONICALLY DISCONNECTED OR REMOVED.
20. THIS CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL DOWN STREAM ELECTRICAL DEVICES AFFECTED BY THE DEMOLITION SHALL BE IN FULL OPERATION AFTER WORK IS COMPLETE.
21. THE OWNER SHALL HAVE FULL SALVAGE RIGHTS OVER ANY ELECTRICAL DEVICES THAT ARE SCHEDULED TO BE DEMOLISHED. COORDINATE IN FIELD WITH OWNER.
22. TO CONTROL ALL THE SINGLE PHASE FANS AND PUMP PROVIDE MANUAL MOTOR STARTER THERMAL OVERLOAD SWITCH AND 120V 20AMPS. CONTROL RELAY/CONTACTOR TO CONTROL PUMP/FAN (VERIFY CONTROL VOLTAGE WITH BUILDING AUTOMATION SYSTEM CONTRACTOR).
23. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
24. REFER TO SPECIFICATION SECTION 260535 FOR ELECTRICAL BOX PUTTY PAD REQUIREMENTS FOR ACOUSTICALLY CRITICAL AND ACOUSTICALLY SENSITIVE WALLS AND PARTITIONS AS DEFINED IN THE AC1 SERIES DRAWINGS.

(#) KEYNOTES

1. EXISTING AREAS TO REMAIN. POWER TO THE EXISTING AREAS TO REMAIN. IF FEED FROM EXISTING DEMOED PANELS IN THE LIBRARY AREA, RE FEED THE LOADS FROM NEW PANEL PCL-1. CONTRACTOR TO VERIFY EXACT CIRCUITING INFO. IN THE FIELD AND DURING DEMOLITION.
2. EXISTING NORMAL AND EMERGENCY POWER TO THE MDF ROOM TO REMAIN. IF ANY IS FEED FROM EXISTING DEMOED PANELS IN THE LIBRARY AREA, REFEED THE LOADS FROM THE NEW PANEL PCL-1. 39
3. SEE SHEET E2.01B-1c FOR DETAILS.
4. POWER FOR TV SCREEN. REFER TO AV DRAWINGS FOR MORE DETAILS.
5. OUTLETS TO BE LOCATED SURFACE BELOW THE DESK, CONDUIT RUNNING THROUGH THE SPINE OF THE FURNITURE TABLE. PROVIDE CUTTING AND PATCHING AS REQUIRED.
6. POWER IN THE COMPUTER LAB IS EXISTING TO REMAIN.
7. POWER FOR SHORT THROW PROJECTOR, REFER TO AV DRAWINGS FOR MORE DETAILS.
8. PROVIDE 4000 SERIES LEGRAND STEEL WIREMOLD RACEWAY MOUNTED AT COUNTER HEIGHT. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT MOUNTING HEIGHT.
9. PROVIDE POWER TO THE FURNITURE FROM THE WALLS THROUGH WHIP FROM THE SPINE OF THE FURNITURE. REFER TO FURNITURE AND ARCHITECTURAL DRAWINGS FOR EXACT REQUIREMENTS PRIOR TO START.
10. POWER FOR PRINTER. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION. ADD PRIOR TO INSTALL AND START. 39
11. POWER FOR IDF CABINET. REFER TO TECHNOLOGY DRAWINGS AND DETAILS FOR EXACT LOCATION AND ADDITIONAL SCOPE OF WORK PRIOR TO START. THIS LOCATION IS SHOWN FOR REFERENCE ONLY.
12. POWER FOR AV HEAD END EQUIPMENT. REFER TO LOW VOLTAGE DRAWINGS FOR MORE DETAILS AND ADDITIONAL SCOPE OF WORK.

DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

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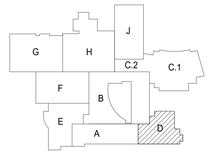

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	ISSUED FOR 100% DD	07.12.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

FIRST FLOOR POWER PLAN AREA D

Project Number:
5274-42
Drawn By:
Author
Sheet:

E2.01D-1c

GENERAL NOTES

1. THESE NOTES APPLICABLE TO ALL POWER PLANS
2. THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR SHARED NEUTRAL CONDUCTORS WHICH THE MINIMUM SIZE SHALL BE #10 AWG. THE MINIMUM CONDUIT SIZE FOR HOMERUNS AND BRANCH FEEDS TO POWER OUTLETS SHALL BE 3/4". 1/2" CONDUIT IS ACCEPTABLE FOR BRANCH WIRING TO END OF THE LINE RECEPTACLES ONLY
3. ALL POWER BRANCH CIRCUITS SHALL TERMINATE AT 20A/1-POLE CIRCUIT BREAKERS IN PANELBOARD INDICATED UNLESS NOTED OTHERWISE.
4. THE CONTRACTOR SHALL PROVIDE ALL PENETRATIONS, SLEEVES, AND SEALANT AS REQUIRED THROUGH PARTITIONS TO ACCOMMODATE THE FIRE ALARM, PAGING, SECURITY, AUDIOVISUAL, VOICE, AND DATA CABLING. ANY PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE PROPERLY SEALED AND TREATED TO MAINTAIN THE FIRE STOPPING RATING OF THE WALLS, FLOORS, AND CEILINGS.
5. BACKBOXES ARE TO BE MOUNTED OFFSET, NOT BACK TO BACK.
6. CIRCUIT NUMBER(S), WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF "AS BUILT" DRAWINGS.
7. UNLESS INDICATED OTHERWISE, ALL MATERIALS REQUIRED TO PROVIDE BRANCH CIRCUITS AND FEEDERS ARE TO BE NEW.
8. REFER TO MECHANICAL AND PLUMBING SHEETS FOR ADDITIONAL EQUIPMENT INFORMATION.
9. ANY ELECTRICAL DEVICES ON NEW WALLS SHALL BE FLUSH MOUNTED. NO WIREMOLDS ARE ACCEPTABLE ON NEW WALLS UNLESS NOTED OTHERWISE.
10. VERIFY RECEPTACLE LOCATIONS WITH ARCHITECTURAL FURNITURE LAYOUT TO ENSURE PROPER ACCESSIBILITY.
11. LOW VOLTAGE WIRING SHALL NOT LIE ON TOP OF CEILING GRID SYSTEM. WIRING SHALL BE SUPPORTED AT INTERVALS NOT EXCEEDING 5 FEET BY UTILIZING J-HOOKS SUPPORTED BY STRUCTURAL MEMBERS. WIRING SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO STRUCTURAL MEMBERS.
12. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL POINTS.
13. SPECIAL ATTENTION SHALL BE PAID TO ALL CONDUIT ROUTING IN OPEN CEILING SPACE FOR AESTHETIC PURPOSES. ALL EXPOSED CONDUITS SHALL BE ROUTED PERPENDICULAR AND PARALLEL TO BUILDING LINES AND TIGHT TO CEILING/STRUCTURAL CORNERS. WHERE THIS IS NOT FEASIBLE, SUBMIT CONDUIT ROUTING PLAN TO ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
14. CONTRACTOR SHALL PROVIDE COMMON DISCONNECTING MEANS FOR BRANCH CIRCUITS UTILIZING SHARED NEUTRALS PER ARTICLE 210.4(B). HANDLE TIES ARE ACCEPTABLE WHEN BREAKERS ARE "SLASH RATED" FOR THE HIGHER SYSTEM VOLTAGE RATING OF THE SYSTEM. WHEN HANDLE TIES ARE NOT POSSIBLE DUE TO NON-ADJACENT BREAKERS, PROVIDE A DEDICATED NEUTRAL FOR EACH UNGROUNDED CONDUCTOR.
15. ALL DEMOLITION OF THE ELECTRICAL SYSTEM AS NOTED FOR ON THE DEMOLITION DRAWINGS SHALL BE COORDINATED WITH THE RENOVATION REQUIREMENTS TO DETERMINE THIS CONTRACTORS WORK.
16. IT IS THE INTENT OF THE ELECTRICAL DEMOLITION DRAWING(S) TO INDICATE AREAS IN WHICH ELECTRICAL EQUIPMENT, CONDUIT, LIGHTING FIXTURES, DEVICES, ETC. NEED TO BE REMOVED, RELOCATED, OR MODIFIED BY THIS CONTRACTOR TO ALLOW FOR THE RENOVATION PHASE OF CONSTRUCTION. THE ELECTRICAL DEMOLITION PLAN IS FOR REFERENCE PURPOSES ONLY AND IT IS NOT INTENDED TO BE THE SOLE SOURCE OF EXISTING CONDITIONS.
17. THE CONTRACTOR SHALL VISIT THE BUILDING, BEFORE SUBMITTING HIS BID, TO VERIFY THE EXISTING CONDITIONS WHICH WILL AFFECT HIS WORK.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE ELECTRICAL DEMOLITION REQUIRE DTO ACCOMMODATE THE RENOVATION. REMOVE AS REQUIRED ALL LIGHTING FIXTURES, RECEPTACLES, EQUIPMENT DEVICES, ETC. PULL OUT ALL UNUSED CONDUCTORS AND CABLES. REMOVE ALL ABANDONED CONDUIT. ELECTRICALLY DISCONNECT AIR HANDLING UNITS, ELECTRICAL WATER HEATERS, AND EQUIPMENT FOR REMOVAL BY OTHERS. ALL REMOVED EQUIPMENT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
19. REFER TO THE MECHANICAL AND PLUMBING DEMOLITION DRAWINGS FOR ALL MECHANICAL EQUIPMENT THAT IS TO BE ELECTRONICALLY DISCONNECTED OR REMOVED.
20. THIS CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL DOWN STREAM ELECTRICAL DEVICES AFFECTED BY THE DEMOLITION SHALL BE IN FULL OPERATION AFTER WORK IS COMPLETE.
21. THE OWNER SHALL HAVE FULL SALVAGE RIGHTS OVER ANY ELECTRICAL DEVICES THAT ARE SCHEDULED TO BE DEMOLISHED. COORDINATE IN FIELD WITH OWNER.
22. TO CONTROL ALL THE SINGLE PHASE FANS AND PUMP PROVIDE MANUAL MOTOR STARTER THERMAL OVERLOAD SWITCH AND 120V 20AMPS. CONTROL RELAY/CONTACTOR TO CONTROL PUMP/FAN (VERIFY CONTROL VOLTAGE WITH BUILDING AUTOMATION SYSTEM CONTRACTOR).
23. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
24. REFER TO SPECIFICATION SECTION 260535 FOR ELECTRICAL BOX PUTTY PAD REQUIREMENTS FOR ACOUSTICALLY CRITICAL AND ACOUSTICALLY SENSITIVE WALLS AND PARTITIONS AS DEFINED IN THE AC1 SERIES DRAWINGS.

(#) KEYNOTES

1	POWER FOR TV SCREEN, REFER TO AV DRAWINGS FOR MORE DETAILS.
2	POWER FOR PROJECTOR, REFER TO AV DRAWINGS FOR MORE DETAILS.
3	REFER TO AV DRAWINGS FOR MORE DETAILS.

1 FIRST FLOOR POWER PLAN AREA E
SCALE: 1/8" = 1'-0"

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COMMUNITY HIGH SCHOOL DISTRICT 99

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MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

FIRST FLOOR POWER PLAN AREA E

Project Number:
5274-42
Drawn By:
Author
Sheet:
E2.01E-1c

COORDINATION NOTE
REFER TO THEATRE DRAWINGS, PERFORMANCE AV/ THEATRE AV DRAWINGS, AND AC SERIES DRAWINGS FOR ADDITIONAL SCOPE OF WORK AND DETAILS. THIS NOTE IS APPLICABLE TO ALL THE LEVELS.

SYMBOL LEGEND
E - EXISTING TO REMAIN
N - NEW
R- EXISTING TO BE REMOVED
RE- NEW LOCATION OF EXISTING RELOCATED EQUIPMENT

#	KEYNOTES
21	DISCONNECT AND POWER CONNECTION FOR EXISTING RELOCATED MOBILE COMPRESSOR. COORDINATE EXACT POWER REQUIREMENTS WITH THE OWNER PRIOR TO INSTALL. THIS LOCATION IS ONLY FOR REFERENCE. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION IN THE SHOP PRIOR TO INSTALL.
22	POWER FOR AV PROJECTOR. REFER TO THEATRE AV DRAWINGS FOR MORE DETAILS AND EXACT LOCATION PRIOR TO START.
23	COORDINATE EXACT LOCATION/ MOUNTING WITH THE ARCHITECTS DRAWINGS PRIOR TO START.
24	POWER SHUT OFF SWITCH FOR CIRCUITS PAD-1B: 28,30,32,34,36 SERVING THE STORAGE SPACE.
25	POWER FOR BLACK OUT ROLLER SHADES. PROVIDE CONTROL SWITCH ON THE WALL. COORDINATE WITH THE ARCHITECT FOR EXACT LOCATION OF THE SWITCH.
26	REFER TO DETAILS SHEET FOR TYPICAL DOOR ACCESS CONTROL DETAILS AND LOW VOLTAGE CONSULTANT DRAWINGS FOR ADDITIONAL SCOPE.
27	REFER TO DOOR ACCESS CONTROL DETAIL ON DETAILS SHEET FOR MORE DETAILS. REFER TO LOW VOLTAGE SECURITY DRAWINGS FOR MORE INFORMATION AND SCOPE FOR ACCESS CONTROLS. THIS IS TYPICAL FOR ALL THE DOORS WITH ACCESS CONTROLS IN THIS PROJECT.
28	POWER FOR ACTUATED DOOR. REFER TO LOW VOLTAGE DRAWINGS FOR EXACT REQUIREMENTS FOR POWER AND ROUGH IN INFORMATION FOR THE POWER ACTUATORS.

#	KEYNOTES
1	EMERGENCY POWER SHUT OFF FOR ALL THE POWER CIRCUITS TO THE SCENE SHOP. PROVIDE IN A POLYCARBONATE COVER WITH RESET OPTION AT THE SHUT OFF. LIGHITNGS TO REMAIN ON DURING SHUT OFF.
2	POWER THE EXISTING CONCESSIONS AREA OUTLETS AND LOADS FROM NEW PANEL PL-1C USING NEW CABLES AND CONDUITS. VERFIY ALL THE LOADS FEED FROM OLD PANEL GETTING DEMOED IN THE FIELD PRIOR TO START.
3	ALL THE EXISTING SPECIAL PURPOSE DEVICES IN THE ROOM ARE 30A/2P. EACH SPECIAL PURPOSE DEVICE NEED TO BE RE FEED FROM DEDICATED CIRCUIT FROM THE NEW PANEL PER PLANS. VERIFY EXACT NUMBER OF EXISTING SPECIAL PURPOSE DEVICE IN THE CONCESSIONS AREA TO THE BE REFEED FROM NEW PANEL.
4	PROVIDE 100 AMP , 208V, 3-PHASE AV COMPANY SWITCH. REFER TO THEATRE AV CONSULTANTS DRAWING SFOR MORE DETAILS.
5	PROVIDE AND INSTALL RACEWAY FOR DUPLEX POWER OUTLETS PER TE SERIES DRAWINGS. THESE POWER OUTLETS ON THE POWER STRIP TO BE CONTROLLED BY ON/OFF SWITCH LOCATED ON THE WALL. REFER TO TE SERIES DRAWINGS FOR MORE DETAILS AND ADDITIONAL SCOPE OF WORK.
6	POWER FOR SHORT THROW PROJECTOR. REFER TO AV DRAWINGS FOR MORE DETAILS.
7	POWER FOR OVERHEAD COILING DOOR, CONTROLS SWITCH LOCATION PER MANUFACTURER REQUIREMENTS. COORDIANTE WITH MANUFACTURER FOR POWER REQUIREMENTS.
8	POWER FOR TV SCREENS. REFER TO AV CONSULTANTS DRAWINGS FOR EXACT LOCATION/ ELEVATION AND FOR MORE DETAILS PRIOR TO START.
9	POWER FOR TV SCREENS. REFER TO AV AND THEATRE CONSULTANT DRAWINGS FOR ELEVATION AND BACK BOX REQUIREMENTS PRIOR TO START.
10	POWER FOR HVAC EQUIPMENT. REFER TO HVAC DRAWINGS FOR EXACT LOCATION AND POWER REQUIREMENTS PRIOR TO START.
11	REFER TO KITCHEN CONSULTANT DRAWINGS, FOOD SERVICE EQUIPMENT SCHEDULE FOR EXACT TYPE OF CONNECTION, ELEVATION, AND FOR MORE DETAILS.
12	POWER FOR AXYZ CNC ROUTER. COORDINATE WITH MANUFACTURER FOR EXACT POWER REQUIREMENTS AND CONNECTION TYPE PRIOR TO START.
13	POWER FOR PNEUMATIC CUT-OFF SAW. PROVIDE 9 KVA 208/230V 3PHASE STEP-UP TRANSFORMER TO PROVIDE POWER TO THE SAW. PROVIDE PRIMARY AND SECONDAY FUSED DISCONNECTS DISCONNECTS. PROVIDE 1#6 COPPER GROUNDING FOR TRANSFORMER PER NEC 250.30(A)4. COORDINATE WITH MANUFACTURE FOR EXACT CONNECTION REQUIREMENTS PRIOR TO START. VERIFY THE EXACT LOCATION OF THE SAW WITH THE ARCHITECTS DRAWINGS, THIS LOCATION IS SHOWN FOR REFERENCE ONLY.
14	REFER TO AV DRAWINGS FOR MORE DETAILS.
15	REFER TO THEATRE AV DRAWINGS FOR DETAILS.
16	POWER FOR AV RACK,REFER TO THEATRE AV DRAWINGS FOR DETAILS.
17	POWER FOR AXYZ 27 CNC ROUTER BLOWER. COORDINATE WITH MANUFACTURER FOR EXACT POWER REQUIREMENTS PRIOR TO START. PROVIDE 60 AMP FUSED DISCONNECT.

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4. THE CONTRACTOR SHALL PROVIDE ALL PENETRATIONS, SLEEVES, AND SEALANT AS REQUIRED THROUGH PARTITIONS TO ACCOMMODATE THE FIRE ALARM, PAGING, SECURITY, AUDIO/VISUAL, VOICE, AND DATA CABLING. ANY PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE PROPERLY SEALED AND TREATED TO MAINTAIN THE FIRE STOPPING RATING OF THE WALLS, FLOORS, AND CEILINGS.
5. BACKBONES ARE TO BE MOUNTED OFFSET, NOT BACK TO BACK.
6. CIRCUIT NUMBER(S). WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF "AS BUILT" DRAWINGS.
7. UNLESS INDICATED OTHERWISE, ALL MATERIALS REQUIRED TO PROVIDE BRANCH CIRCUITS AND FEEDERS ARE TO BE NEW.
8. REFER TO MECHANICAL AND PLUMBING SHEETS FOR ADDITIONAL EQUIPMENT INFORMATION.
9. ANY ELECTRICAL DEVICES ON NEW WALLS SHALL BE FLUSH MOUNTED. NO WIREMOLDS ARE ACCEPTABLE ON NEW WALLS UNLESS NOTED OTHERWISE.
10. VERIFY RECEPTACLE LOCATIONS WITH ARCHITECTURAL FURNITURE LAYOUT TO ENSURE PROPER ACCESSIBILITY.
11. LOW VOLTAGE WIRING SHALL NOT LIE ON TOP OF CEILING SYSTEM. WIRING SHALL BE SUPPORTED AT INTERVALS NOT EXCEEDING 5 FEET BY UTILIZING J-HOOKS SUPPORTED BY STRUCTURAL MEMBERS. WIRING SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO STRUCTURAL MEMBERS.
12. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL POINTS.
13. SPECIAL ATTENTION SHALL BE PAID TO ALL CONDUIT ROUTING IN OPEN CEILING SPACE FOR AESTHETIC PURPOSES. ALL EXPOSED CONDUITS SHALL BE ROUTED PERPENDICULAR AND PARALLEL TO BUILDING LINES AND TIGHT TO CEILING/STRUCTURAL CORNERS. WHERE THIS IS NOT FEASIBLE, SUBMIT CONDUIT ROUTING PLAN TO ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
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22. TO CONTROL ALL THE SINGLE PHASE FANS AND PUMP PROVIDE MANUAL MOTOR STARTER THERMAL OVERLOAD SWITCH AND 120V,20AMPS. CONTROL RELAY/CONTACTOR TO CONTROL PUMP/FAN (VERIFY CONTROL VOLTAGE WITH BUILDING AUTOMATION SYSTEM CONTRACTOR).
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2 PP-FIRST FLOOR -STORAGE 615
SCALE: 1/4" = 1'-0"

1 FIRST FLOOR POWER PLAN AREA F
SCALE: 1/8" = 1'-0"

DISTRICT 99
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MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

FIRST FLOOR POWER PLAN AREA F

Project Number: 5274-42
Drawn By: Author
Sheet:

E2.01F-1c

GENERAL NOTES

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10. VERIFY RECEPTACLE LOCATIONS WITH ARCHITECTURAL FURNITURE LAYOUT TO ENSURE PROPER ACCESSIBILITY.
11. LOW VOLTAGE WIRING SHALL NOT LIE ON TOP OF CEILING GRID SYSTEM. WIRING SHALL BE SUPPORTED AT INTERVALS NOT EXCEEDING 5 FEET BY UTILIZING J-HOOKS SUPPORTED BY STRUCTURAL MEMBERS. WIRING SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO STRUCTURAL MEMBERS.
12. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL POINTS.
13. SPECIAL ATTENTION SHALL BE PAID TO ALL CONDUIT ROUTING IN OPEN CEILING SPACE FOR AESTHETIC PURPOSES. ALL EXPOSED CONDUITS SHALL BE ROUTED PERPENDICULAR AND PARALLEL TO BUILDING LINES AND TIGHT TO CEILING/STRUCTURAL CORNERS. WHERE THIS IS NOT FEASIBLE, SUBMIT CONDUIT ROUTING PLAN TO ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
14. CONTRACTOR SHALL PROVIDE COMMON DISCONNECTING MEANS FOR BRANCH CIRCUITS UTILIZING SHARED NEUTRALS PER ARTICLE 210.4(B). HANDLE TIES ARE ACCEPTABLE WHEN BREAKERS ARE "SLASH RATED" FOR THE HIGHER SYSTEM VOLTAGE RATING OF THE SYSTEM. WHEN HANDLE TIES ARE NOT POSSIBLE DUE TO NON-ADJACENT BREAKERS, PROVIDE A DEDICATED NEUTRAL FOR EACH UNGROUNDED CONDUCTOR.
15. ALL DEMOLITION OF THE ELECTRICAL SYSTEM AS NOTED FOR ON THE DEMOLITION DRAWINGS SHALL BE COORDINATED WITH THE RE RENOVATION REQUIREMENTS TO DETERMINE THIS CONTRACTORS WORK.
16. IT IS THE INTENT OF THE ELECTRICAL DEMOLITION DRAWING(S) TO INDICATE AREAS IN WHICH ELECTRICAL EQUIPMENT, CONDUIT, LIGHTING FIXTURES, DEVICES, ETC. NEED TO BE REMOVED, RELOCATED, OR MODIFIED BY THIS CONTRACTOR TO ALLOW FOR THE RENOVATION PHASE OF CONSTRUCTION. THE ELECTRICAL DEMOLITION PLAN IS FOR REFERENCE PURPOSES ONLY AND IT IS NOT INTENDED TO BE THE SOLE SOURCE OF EXISTING CONDITIONS.
17. THE CONTRACTOR SHALL VISIT THE BUILDING, BEFORE SUBMITTING HIS BID, TO VERIFY THE EXISTING CONDITIONS WHICH WILL AFFECT HIS WORK.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE ELECTRICAL DEMOLITION REQUIRE DTO ACCOMMODATE THE RENOVATION. REMOVE AS REQUIRED ALL LIGHTING FIXTURES, RECEPTACLES, EQUIPMENT DEVICES, ETC. PULL OUT ALL UNUSED CONDUCTORS AND CABLES. REMOVE ALL ABANDONED CONDUIT. ELECTRICALLY DISCONNECT AIR HANDLING UNITS, ELECTRICAL WATER HEATERS, AND EQUIPMENT FOR REMOVAL BY OTHERS. ALL REMOVED EQUIPMENT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
19. REFER TO THE MECHANICAL AND PLUMBING DEMOLITION DRAWINGS FOR ALL MECHANICAL EQUIPMENT THAT IS TO BE ELECTRONICALLY DISCONNECTED OR REMOVED.
20. THIS CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL DOWN STREAM ELECTRICAL DEVICES AFFECTED BY THE DEMOLITION SHALL BE IN FULL OPERATION AFTER WORK IS COMPLETE.
21. THE OWNER SHALL HAVE FULL SALVAGE RIGHTS OVER ANY ELECTRICAL DEVICES THAT ARE SCHEDULED TO BE DEMOLISHED. COORDINATE IN FIELD WITH OWNER.
22. TO CONTROL ALL THE SINGLE PHASE FANS AND PUMP PROVIDE MANUAL MOTOR STARTER THERMAL OVERLOAD SWITCH AND 120V,20AMPS. CONTROL RELAYCONTACTOR TO CONTROL PUMP/FAN (VERIFY CONTROL VOLTAGE WITH BUILDING AUTOMATION SYSTEM CONTRACTOR).
23. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
24. REFER TO SPECIFICATION SECTION 260535 FOR ELECTRICAL BOX PUTTY PAD REQUIREMENTS FOR ACOUSTICALLY CRITICAL AND ACOUSTICALLY SENSITIVE WALLS AND PARTITIONS AS DEFINED IN THE AC1 SERIES DRAWINGS.

(#) KEYNOTES

1. POWER FOR TV SCREEN, REFER TO AV DRAWINGS FOR MORE DETAILS.
2. EXISTING TO REMAIN.
3. POWER FOR HVAC EQUIPMENT, REFER TO HVAC DRAWINGS FOR EXACT LOCATION OF THE UNIT AND REQUIREMENTS FOR POWER PRIOR TO START.
4. REFER TO AV DRAWINGS FOR MORE DETAILS OF POWER IN THE CONTROL ROOM.

1 SECOND FLOOR POWER PLAN-AREA B
SCALE: 1/8" = 1'-0"

DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

Wight

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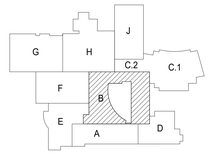

NORTH

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

SECOND FLOOR POWER PLAN AREA B

Project Number:
5274-42
Drawn By:
Author
Sheet:
E2.02B-1c

COORDINATION NOTE

REFER TO THEATRE DRAWINGS, PERFORMANCE AV/ THEATRE AV DRAWINGS, AND AC SERIES DRAWINGS FOR ADDITIONAL SCOPE OF WORK AND DETAILS. THIS NOTE IS APPLICABLE TO ALL THE LEVELS.

SYMBOL LEGEND

E - EXISTING TO REMAIN

N - NEW

R- EXISTING TO BE REMOVED

RE- NEW LOCATION OF EXISTING RELOCATED EQUIPMENT

KEYNOTES

21 POWER FOR VARIABLE ACOUSTIC CURTAIN HOIST . REFER TO THEATRE CONSULTANT DRAWINGS FOR EXACT LOCATION , DETAILS, AND MORE SCOPE OF WORK PRIOR TO START. THIS LOCATION IS SHOWN FOR REFERENCE ONLY.

22 NOT USED - 59

23 POWER TO SIGNAL PROCESSING RACKS 101 AND 201. REFER TO THEATRE CONSULTANTS DRAWINGS FOR MORE DETAILS AND ADDITIONAL SCOPE OF WORK.

24 POWER FOR MOTORIZED PROJECTION SCREEN. REFER TO PERFORMANCE AV DRAWINGS FOR EXACT LOCATION AND MORE DETAILS. THIS LOCATION IS SHOWN FOR REFERENCE ONLY.

KEYNOTES

1 EQUIPMENTS IN THE DIMMER ROOM ARE SHOWN FOR REFERENCE ONLY . REFER TO THEATRE CONSULTANT / AV CONSULTANTS DRAWINGS FOR LOCATIONS, MORE SCOPE OF WORK AND DETAILS.

2 POWER FOR MOTORIZED STAGE HOISTS. REFER TO THEATRE CONSULTANT DRAWINGS FOR MORE DETAILS, EXACT LOCATION , AND ADDITIONAL SCOPE OF WORK. THIS LOCATION IS SHOWN FOR REFERENCE ONLY.

3 POWER FOR ORCHESTRA SHELL CEILING HOISTS. REFER TO THEATRE CONSULTANT DRAWINGS FOR MORE DETAILS, EXACT LOCATION , AND ADDITIONAL SCOPE OF WORK. THIS LOCATION IS SHOWN FOR REFERENCE ONLY.

4 POWER FOR FIRE SAFETY CURTAIN. REFER TO TR SERIES THEATRE CONSULTANT DRAWINGS FOR EXACT LOCATION, ADDITIONAL DETAILS AND SCOPE OF WORK. THIS LOCATION IS SHOWN FOR REFERENCE ONLY.

5 PROVIDE 1# EA, 10@10AMP, 4 @30AMP, 120V SINGLE PHASE POWER CIRCUITS TO A/V EQUIPMENT RACK. TERMINATE TO POWER DISTRIBUTION IN RACK. IN RACK DISTRIBUTION BY AV CONTRACTOR. ISOLATE RACK FROM CONDUITS BY INSULATED CONNECTORS. PROVIDE #6AWG (MINIMUM) INSULATED GROUND CONDUCTOR FOR BONDING OF RACK.

6 CATWALK I/O POWER OUTLET. COORDINATE THE EXACT ELEVATION, LOCATION AND MORE DETAILS OF THE POWER OUTLETS WITH THE THEATRE AV DRAWINGS PRIOR TO START.

7 PROVIDE 2 EA 20AMP, 120V, SINGLE PHASE POWER CIRCUITS TO A/V EQUIPMENT RACK. TERMINATE TO POWER DISTRIBUTION IN RACK. IN RACK DISTRIBUTION BY AV CONTRACTOR. ISOLATE RACK FROM CONDUITS BY INSULATED CONNECTORS. REFER TO AV DRAWINGS FOR CONNECTION TYPE.

8 REFER TO THEATRE AV DRAWINGS FOR MORE DETAILS.

9 AUXILLARY DISCONNECT TO BE LOCATED IN THE HOISTWAY FOR ELEVATOR POWER REFER TO ELEVATOR SPECS AND SUBMITTAL FOR EXACT LOCATION PRIOR TO INSTALL. REFER TO ELEVATOR MANUFACTURER SPECIFICATIONS, CONNECTION REQUIREMENTS AND ADDITIONAL SCOPE OF WORK PRIOR TO START.

10 MAIN FUSED 30 AMP DISCONNECT FOR ELEVATOR WITH AUXILLARY CONTAACT SWITCH FOR ELEVATOR SYSTEM. THE MAIN DISCONNECT TO HAVE PROVISIONS TO BE LOCKED OUT AND TAGGED DURING SERVICING. REFER TO ELEVATOR MANUFACTURER SPECIFICATIONS AND SUBMITTALS FOR ADDITIONAL SCOPE OF WORK AND REQUIREMENTS. PROVIDE ENGRAVED TAG MAIN ELEVATOR DISCONNECT .

11 LOCKABLE DISCONNECT FOR ELEVATOR CAB LIGHTING, REFER TO ELEVATOR SPECIFICATIONS FOR MORE DETAILS.

12 POWER FOR ELEVATOR VENTILATION FAN. REFER TO ELEVATOR SUBMITTALS AND MANUFACTURER FOR EXACT LOCATION OF THE FAN AND ADDITIONAL POWER REQUIREMENTS.

13 POWER FOR HVAC EQUIPMENT, REFER TO HVAC DRAWINGS FOR EXACT LOCATION OF THE UNIT AND REQUIREMENTS FOR POWER PRIOR TO START.

14 DIMMER RACKS -BLACK BOX

15 DMX RACK-BLACK BOX

16 DIMMER RACKS -AUDITORIUM

17 DMX RACK -AUDITORIUM

18 EMERGENCY TRANSFER SWITCH.

19 POWER FOR AV RACK. REFER TO THEATRE AV DRAWINGS FOR DETAILS.

20 COORDINATE EXACT LOCATION WITH THE THEATRE CONSULTANT DRAWINGS PRIOR TO START.

GENERAL NOTES

1. THESE NOTES APPLICABLE TO ALL POWER PLANS
2. THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR SHARED NEUTRAL CONDUCTORS WHICH THE MINIMUM SIZE SHALL BE #10 AWG. THE MINIMUM CONDUIT SIZE FOR HOMERUNS AND BRANCH FEEDS TO POWER OUTLETS SHALL BE 3/4". 1/2" CONDUIT IS ACCEPTABLE FOR BRANCH WIRING TO END OF THE LINE RECEPTACLES ONLY.
3. ALL POWER BRANCH CIRCUITS SHALL TERMINATE AT 20A/1-POLE CIRCUIT BREAKERS IN PANELBOARD INDICATED UNLESS NOTED OTHERWISE.
4. THE CONTRACTOR SHALL PROVIDE ALL PENETRATIONS, SLEEVES, AND SEALANT AS REQUIRED THROUGH PARTITIONS TO ACCOMMODATE THE FIRE ALARM, PAGING, SECURITY, AUDIO/VISUAL, VOICE, AND DATA CABLING. ANY PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE PROPERLY SEALED AND TREATED TO MAINTAIN THE FIRE STOPPING RATING OF THE WALLS, FLOORS, AND CEILINGS.
5. BACKBOXES ARE TO BE MOUNTED OFFSET, NOT BACK TO BACK.
6. CIRCUIT NUMBER(S), WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF "AS BUILT" DRAWINGS.
7. UNLESS INDICATED OTHERWISE, ALL MATERIALS REQUIRED TO PROVIDE BRANCH CIRCUITS AND FEEDERS ARE TO BE NEW.
8. REFER TO MECHANICAL AND PLUMBING SHEETS FOR ADDITIONAL EQUIPMENT INFORMATION.
9. ANY ELECTRICAL DEVICES ON NEW WALLS SHALL BE FLUSH MOUNTED. NO WIREMOLDS ARE ACCEPTABLE ON NEW WALLS UNLESS NOTED OTHERWISE.
10. VERIFY RECEPTACLE LOCATIONS WITH ARCHITECTURAL FURNITURE LAYOUT TO ENSURE PROPER ACCESSIBILITY.
11. LOW VOLTAGE WIRING SHALL NOT LIE ON TOP OF CEILING GRID SYSTEM. WIRING SHALL BE SUPPORTED AT INTERVALS NOT EXCEEDING 5 FEET BY UTILIZING J-HOOKS SUPPORTED BY STRUCTURAL MEMBERS. WIRING SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO STRUCTURAL MEMBERS.
12. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL POINTS.
13. SPECIAL ATTENTION SHALL BE PAID TO ALL CONDUIT ROUTING IN OPEN CEILING SPACE FOR AESTHETIC PURPOSES. ALL EXPOSED CONDUITS SHALL BE ROUTED PERPENDICULAR AND PARALLEL TO BUILDING LINES AND TIGHT TO CEILING/STRUCTURAL CORNERS. WHERE THIS IS NOT FEASIBLE, SUBMIT CONDUIT ROUTING PLAN TO ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
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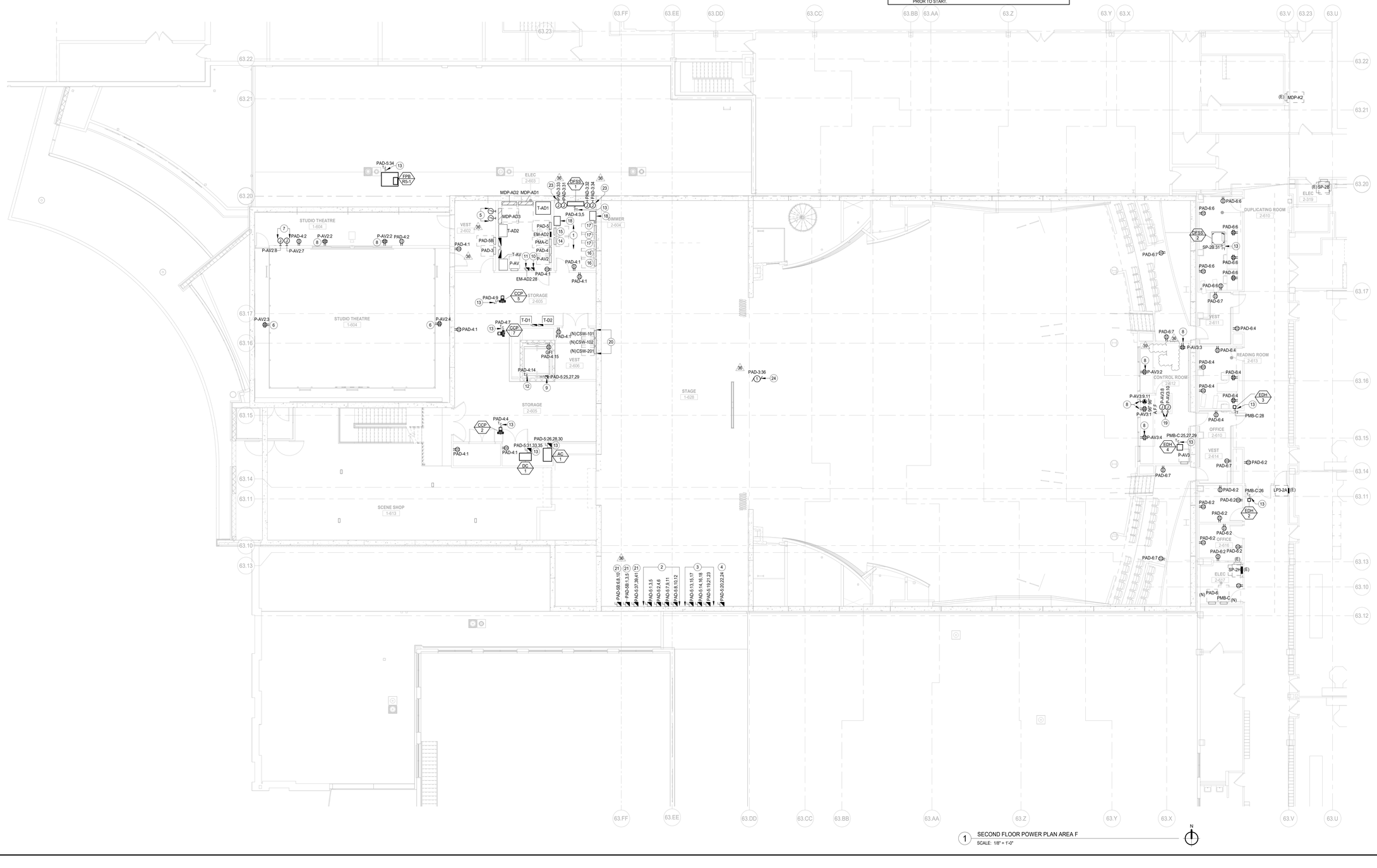
23. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
24. REFER TO SPECIFICATION SECTION 260535 FOR ELECTRICAL BOX PUTTY PAD REQUIREMENTS FOR ACOUSTICALLY CRITICAL AND ACOUSTICALLY SENSITIVE WALLS AND PARTITIONS AS DEFINED IN THE AC1 SERIES DRAWINGS.



1 SECOND FLOOR POWER PLAN AREA F
SCALE: 1/8" = 1'-0"

N

DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

Wight

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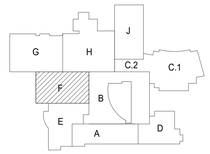

NORTH

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

SECOND FLOOR POWER PLAN AREA F

Project Number:
5274-42
Drawn By:
Author
Sheet:

E2.02F-1c

COORDINATION NOTE
REFER TO THEATRE DRAWINGS, PERFORMANCE AV/ THEATRE AV DRAWINGS, AND AC SERIES DRAWINGS FOR ADDITIONAL SCOPE OF WORK AND DETAILS. THIS NOTE IS APPLICABLE TO ALL THE LEVELS.

#	KEYNOTES
1	REFER TO THEATRE AV DRAWINGS FOR MORE DETAILS AND EXACT LOCATION.
2	POWER FOR SPR-102. REFER TO THEATRE CONSULTANTS DRAWINGS FOR EXACT LOCATION OF THE RACK PRIOR TO START. SEE THEATRE DRAWINGS FOR MORE SCOPE OF WORK AND DETAILS FOR POWER TO THE RACKS.

GENERAL NOTES

1. THESE NOTES APPLICABLE TO ALL POWER PLANS
2. THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR SHARED NEUTRAL CONDUCTORS WHICH THE MINIMUM SIZE SHALL BE #10 AWG. THE MINIMUM CONDUIT SIZE FOR HOMERUNS AND BRANCH FEEDS TO POWER OUTLETS SHALL BE 3/4". 1/2" CONDUIT IS ACCEPTABLE FOR BRANCH WIRING TO END OF THE LINE RECEPTACLES ONLY.
3. ALL POWER BRANCH CIRCUITS SHALL TERMINATE AT 20A/1-POLE CIRCUIT BREAKERS IN PANELBOARD INDICATED UNLESS NOTED OTHERWISE.
4. THE CONTRACTOR SHALL PROVIDE ALL PENETRATIONS, SLEEVES, AND SEALANT AS REQUIRED THROUGH PARTITIONS TO ACCOMMODATE THE FIRE ALARM, PAGING, SECURITY, AUDIO/VISUAL, VOICE, AND DATA CABLING. ANY PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE PROPERLY SEALED AND TREATED TO MAINTAIN THE FIRE STOPPING RATING OF THE WALLS, FLOORS, AND CEILINGS.
5. BACKBOXES ARE TO BE MOUNTED OFFSET, NOT BACK TO BACK.
6. CIRCUIT NUMBER(S), WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF "AS BUILT" DRAWINGS.
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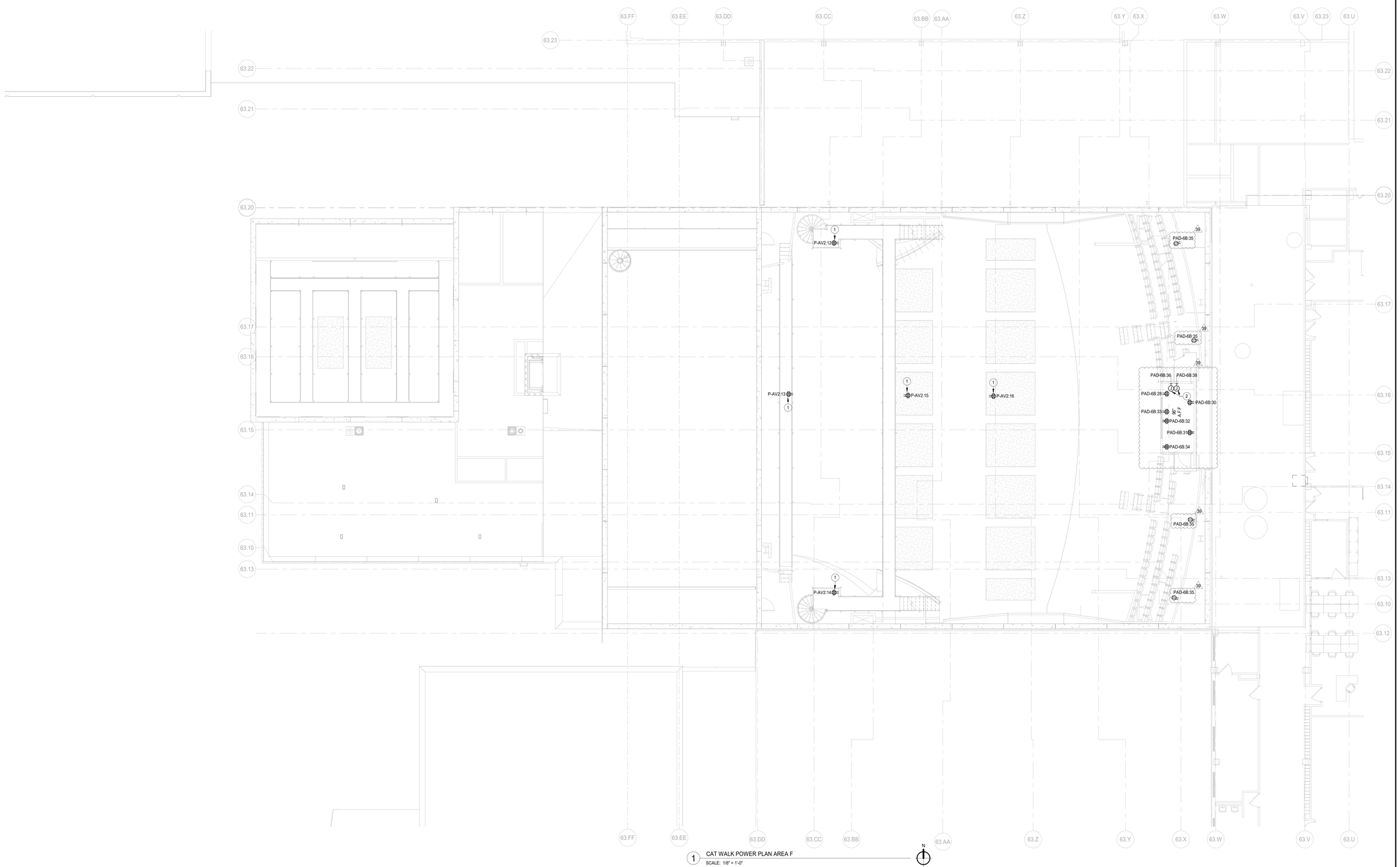

1 CAT WALK POWER PLAN AREA F
SCALE: 1/8" = 1'-0"

DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

Wight

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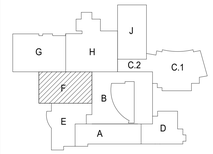

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	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019

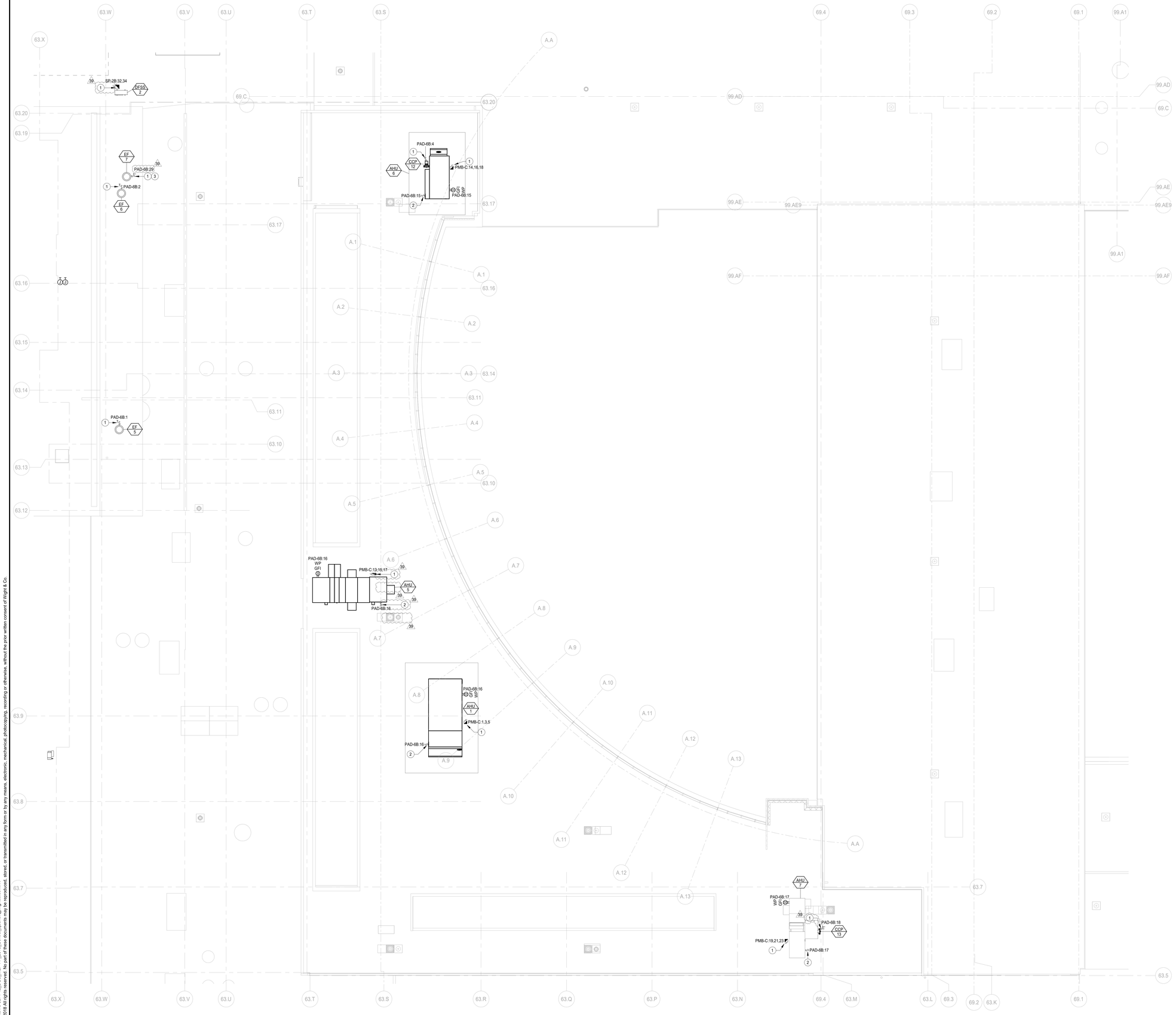
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

CAT WALK POWER PLAN AREA F

Project Number:
5274-42
Drawn By:
Author
Sheet:

E2.03CF



1 ROOF POWER PLAN AREA B
SCALE: 1/8" = 1'-0"

N

GENERAL NOTES

1. THESE NOTES APPLICABLE TO ALL POWER PLANS
2. THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR SHARED NEUTRAL CONDUCTORS WHICH THE MINIMUM SIZE SHALL BE #10 AWG. THE MINIMUM CONDUIT SIZE FOR HOMERUNS AND BRANCH FEEDS TO POWER OUTLETS SHALL BE 3/4". 1/2" CONDUIT IS ACCEPTABLE FOR BRANCH WIRING TO END OF THE LINE RECEPTACLES ONLY.
3. ALL POWER BRANCH CIRCUITS SHALL TERMINATE AT 20A/1-POLE CIRCUIT BREAKERS IN PANELBOARD INDICATED UNLESS NOTED OTHERWISE.
4. THE CONTRACTOR SHALL PROVIDE ALL PENETRATIONS, SLEEVES, AND SEALANT AS REQUIRED THROUGH PARTITIONS TO ACCOMMODATE THE FIRE ALARM, PAGING, SECURITY, AUDIOVISUAL, VOICE, AND DATA CABLING. ANY PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE PROPERLY SEALED AND TREATED TO MAINTAIN THE FIRE STOPPING RATING OF THE WALLS, FLOORS, AND CEILINGS.
5. BACKBOXES ARE TO BE MOUNTED OFFSET, NOT BACK TO BACK.
6. CIRCUIT NUMBER(S), WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF "AS BUILT" DRAWINGS.
7. UNLESS INDICATED OTHERWISE, ALL MATERIALS REQUIRED TO PROVIDE BRANCH CIRCUITS AND FEEDERS ARE TO BE NEW.
8. REFER TO MECHANICAL AND PLUMBING SHEETS FOR ADDITIONAL EQUIPMENT INFORMATION.
9. ANY ELECTRICAL DEVICES ON NEW WALLS SHALL BE FLUSH MOUNTED. NO WIREMOLDS ARE ACCEPTABLE ON NEW WALLS UNLESS NOTED OTHERWISE.
10. VERIFY RECEPTACLE LOCATIONS WITH ARCHITECTURAL FURNITURE LAYOUT TO ENSURE PROPER ACCESSIBILITY.
11. LOW VOLTAGE WIRING SHALL NOT LIE ON TOP OF CEILING GRID SYSTEM. WIRING SHALL BE SUPPORTED AT INTERVALS NOT EXCEEDING 5 FEET BY UTILIZING J-HOOKS SUPPORTED BY STRUCTURAL MEMBERS. WIRING SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO STRUCTURAL MEMBERS.
12. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL POINTS.
13. SPECIAL ATTENTION SHALL BE PAID TO ALL CONDUIT ROUTING IN OPEN CEILING SPACE FOR AESTHETIC PURPOSES. ALL EXPOSED CONDUITS SHALL BE ROUTED PERPENDICULAR AND PARALLEL TO BUILDING LINES AND TIGHT TO CEILING/STRUCTURAL CORNERS. WHERE THIS IS NOT FEASIBLE, SUBMIT CONDUIT ROUTING PLAN TO ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
14. CONTRACTOR SHALL PROVIDE COMMON DISCONNECTING MEANS FOR BRANCH CIRCUITS UTILIZING SHARED NEUTRALS PER ARTICLE 210.4(B). HANDLE TIES ARE ACCEPTABLE WHEN BREAKERS ARE "SLASH RATED" FOR THE HIGHER SYSTEM VOLTAGE RATING OF THE SYSTEM. WHEN HANDLE TIES ARE NOT POSSIBLE DUE TO NON-ADJACENT BREAKERS, PROVIDE A DEDICATED NEUTRAL FOR EACH UNGROUNDED CONDUCTOR.
15. ALL DEMOLITION OF THE ELECTRICAL SYSTEM AS NOTED FOR ON THE DEMOLITION DRAWINGS SHALL BE COORDINATED WITH THE RENOVATION REQUIREMENTS TO DETERMINE THIS CONTRACTORS WORK.
16. IT IS THE INTENT OF THE ELECTRICAL DEMOLITION DRAWING(S) TO INDICATE AREAS IN WHICH ELECTRICAL EQUIPMENT, CONDUIT, LIGHTING FIXTURES, DEVICES, ETC. NEED TO BE REMOVED, RELOCATED, OR MODIFIED BY THIS CONTRACTOR TO ALLOW FOR THE RENOVATION PHASE OF CONSTRUCTION. THE ELECTRICAL DEMOLITION PLAN IS FOR REFERENCE PURPOSES ONLY AND IT IS NOT INTENDED TO BE THE SOLE SOURCE OF EXISTING CONDITIONS.
17. THE CONTRACTOR SHALL VISIT THE BUILDING, BEFORE SUBMITTING HIS BID, TO VERIFY THE EXISTING CONDITIONS WHICH WILL AFFECT HIS WORK.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE ELECTRICAL DEMOLITION REQUIRE DTO ACCOMMODATE THE RENOVATION. REMOVE AS REQUIRED ALL LIGHTING FIXTURES, RECEPTACLES, EQUIPMENT DEVICES, ETC. PULL OUT ALL UNUSED CONDUCTORS AND CABLES. REMOVE ALL ABANDONED CONDUIT. ELECTRICALLY DISCONNECT AIR HANDLING UNITS, ELECTRICAL WATER HEATERS, AND EQUIPMENT FOR REMOVAL BY OTHERS. ALL REMOVED EQUIPMENT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
19. REFER TO THE MECHANICAL AND PLUMBING DEMOLITION DRAWINGS FOR ALL MECHANICAL EQUIPMENT THAT IS TO BE ELECTRONICALLY DISCONNECTED OR REMOVED.
20. THIS CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL DOWN STREAM ELECTRICAL DEVICES AFFECTED BY THE DEMOLITION SHALL BE IN FULL OPERATION AFTER WORK IS COMPLETE.
21. THE OWNER SHALL HAVE FULL SALVAGE RIGHTS OVER ANY ELECTRICAL DEVICES THAT ARE SCHEDULED TO BE DEMOLISHED. COORDINATE IN FIELD WITH OWNER.
22. TO CONTROL ALL THE SINGLE PHASE FANS AND PUMP PROVIDE MANUAL MOTOR STARTER THERMAL OVERLOAD SWITCH AND 120V,20AMPS. CONTROL RELAY/CONTACTOR TO CONTROL PUMP/FAN.(VERIFY CONTROL VOLTAGE WITH BUILDING AUTOMATION SYSTEM CONTRACTOR).
23. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
24. REFER TO SPECIFICATION SECTION 260535 FOR ELECTRICAL BOX PUTTY PAD REQUIREMENTS FOR ACOUSTICALLY CRITICAL AND ACOUSTICALLY SENSITIVE WALLS AND PARTITIONS AS DEFINED IN THE AC1 SERIES DRAWINGS.

(#) KEYNOTES

1	POWER FOR HVAC EQUIPMENT. COORDINATE WITH HVAC DRAWINGS FOR EXACT LOCATION OF THE EQUIPMENTS AND FOR MORE DETAILS OF THE REQUIREMENTS FOR POWER CONNECTION.
2	POWER FOR UNIT LIGHTS, COORDINATE THE EXACT LOCATION OF THE POINT OF POWER CONNECTION WITH THE MANUFACTURER PRIOR TO START.
3	PROVIDE AUXILLARY CONTROL RELAY TO THE LIGHTING OCCUPANCY SENSOR CONTROL FOR EXHAUST FAN. REFER TO HVAC DRAWINGS FOR DETAILS.

DISTRICT 99

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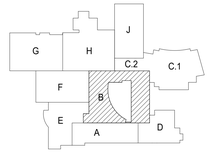

NORTH

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

ROOF POWER PLAN AREA B

Project Number:
5274-42
Drawn By:
Author
Sheet:

E2.04B-1c

KEYNOTES

#	
1	POWER FOR THE HVAC EQUIPMENT, COORDINATE WITH HVAC DRAWINGS FOR EXACT LOCATION OF THE EQUIPMENTS AND FOR MORE DETAILS OF THE REQUIREMENTS FOR POWER CONNECTION.
2	PROVIDE 120V -1 PHASE POWER CONNECTION FOR MAINTENANCE RECEPTACLE FROM THE NEAREST 120V POWER CIRCUIT SERVING THE AREA.
3	PROVIDE AUXILARY CONTROL RELAY TO THE LIGHTING OCCUPANCY SENSOR FOR THE CONTROL OF THE EXHAUST FAN.

GENERAL NOTES

1. THESE NOTES APPLICABLE TO ALL POWER PLANS
2. THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR SHARED NEUTRAL CONDUCTORS WHICH THE MINIMUM SIZE SHALL BE #10 AWG. THE MINIMUM CONDUIT SIZE FOR HOMERUNS AND BRANCH FEEDS TO POWER OUTLETS SHALL BE 3/4". 1/2" CONDUIT IS ACCEPTABLE FOR BRANCH WIRING TO END OF THE LINE RECEPTACLES ONLY.
3. ALL POWER BRANCH CIRCUITS SHALL TERMINATE AT 20A/1-POLE CIRCUIT BREAKERS IN PANELBOARD INDICATED UNLESS NOTED OTHERWISE.
4. THE CONTRACTOR SHALL PROVIDE ALL PENETRATIONS, SLEEVES, AND SEALANT AS REQUIRED THROUGH PARTITIONS TO ACCOMMODATE THE FIRE ALARM, PAGING, SECURITY, AUDIO/VISUAL, VOICE, AND DATA CABLING. ANY PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE PROPERLY SEALED AND TREATED TO MAINTAIN THE FIRE STOPPING RATING OF THE WALLS, FLOORS, AND CEILINGS.
5. BACKBOXES ARE TO BE MOUNTED OFFSET, NOT BACK TO BACK.
6. CIRCUIT NUMBER(S), WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF "AS BUILT" DRAWINGS.
7. UNLESS INDICATED OTHERWISE, ALL MATERIALS REQUIRED TO PROVIDE BRANCH CIRCUITS AND FEEDERS ARE TO BE NEW.
8. REFER TO MECHANICAL AND PLUMBING SHEETS FOR ADDITIONAL EQUIPMENT INFORMATION.
9. ANY ELECTRICAL DEVICES ON NEW WALLS SHALL BE FLUSH MOUNTED. NO WIREMOLDS ARE ACCEPTABLE ON NEW WALLS UNLESS NOTED OTHERWISE.
10. VERIFY RECEPTACLE LOCATIONS WITH ARCHITECTURAL FURNITURE LAYOUT TO ENSURE PROPER ACCESSIBILITY.
11. LOW VOLTAGE WIRING SHALL NOT LIE ON TOP OF CEILING GRID SYSTEM. WIRING SHALL BE SUPPORTED AT INTERVALS NOT EXCEEDING 5 FEET BY UTILIZING J-HOOKS SUPPORTED BY STRUCTURAL MEMBERS. WIRING SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO STRUCTURAL MEMBERS.
12. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL POINTS.
13. SPECIAL ATTENTION SHALL BE PAID TO ALL CONDUIT ROUTING IN OPEN CEILING SPACE FOR AESTHETIC PURPOSES. ALL EXPOSED CONDUITS SHALL BE ROUTED PERPENDICULAR AND PARALLEL TO BUILDING LINES AND TIGHT TO CEILING/STRUCTURAL CORNERS. WHERE THIS IS NOT FEASIBLE, SUBMIT CONDUIT ROUTING PLAN TO ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
14. CONTRACTOR SHALL PROVIDE COMMON DISCONNECTING MEANS FOR BRANCH CIRCUITS UTILIZING SHARED NEUTRALS PER ARTICLE 210.4(B). HANDLE TIES ARE ACCEPTABLE WHEN BREAKERS ARE "SLASH RATED" FOR THE HIGHER SYSTEM VOLTAGE RATING OF THE SYSTEM. WHEN HANDLE TIES ARE NOT POSSIBLE DUE TO NON-ADJACENT BREAKERS, PROVIDE A DEDICATED NEUTRAL FOR EACH UNGROUNDED CONDUCTOR.
15. ALL DEMOLITION OF THE ELECTRICAL SYSTEM AS NOTED FOR ON THE DEMOLITION DRAWINGS SHALL BE COORDINATED WITH THE RENOVATION REQUIREMENTS TO DETERMINE THIS CONTRACTORS WORK.
16. IT IS THE INTENT OF THE ELECTRICAL DEMOLITION DRAWING(S) TO INDICATE AREAS IN WHICH ELECTRICAL EQUIPMENT, CONDUIT, LIGHTING FIXTURES, DEVICES, ETC. NEED TO BE REMOVED, RELOCATED, OR MODIFIED BY THIS CONTRACTOR TO ALLOW FOR THE RENOVATION PHASE OF CONSTRUCTION. THE ELECTRICAL DEMOLITION PLAN IS FOR REFERENCE PURPOSES ONLY AND IT IS NOT INTENDED TO BE THE SOLE SOURCE OF EXISTING CONDITIONS.
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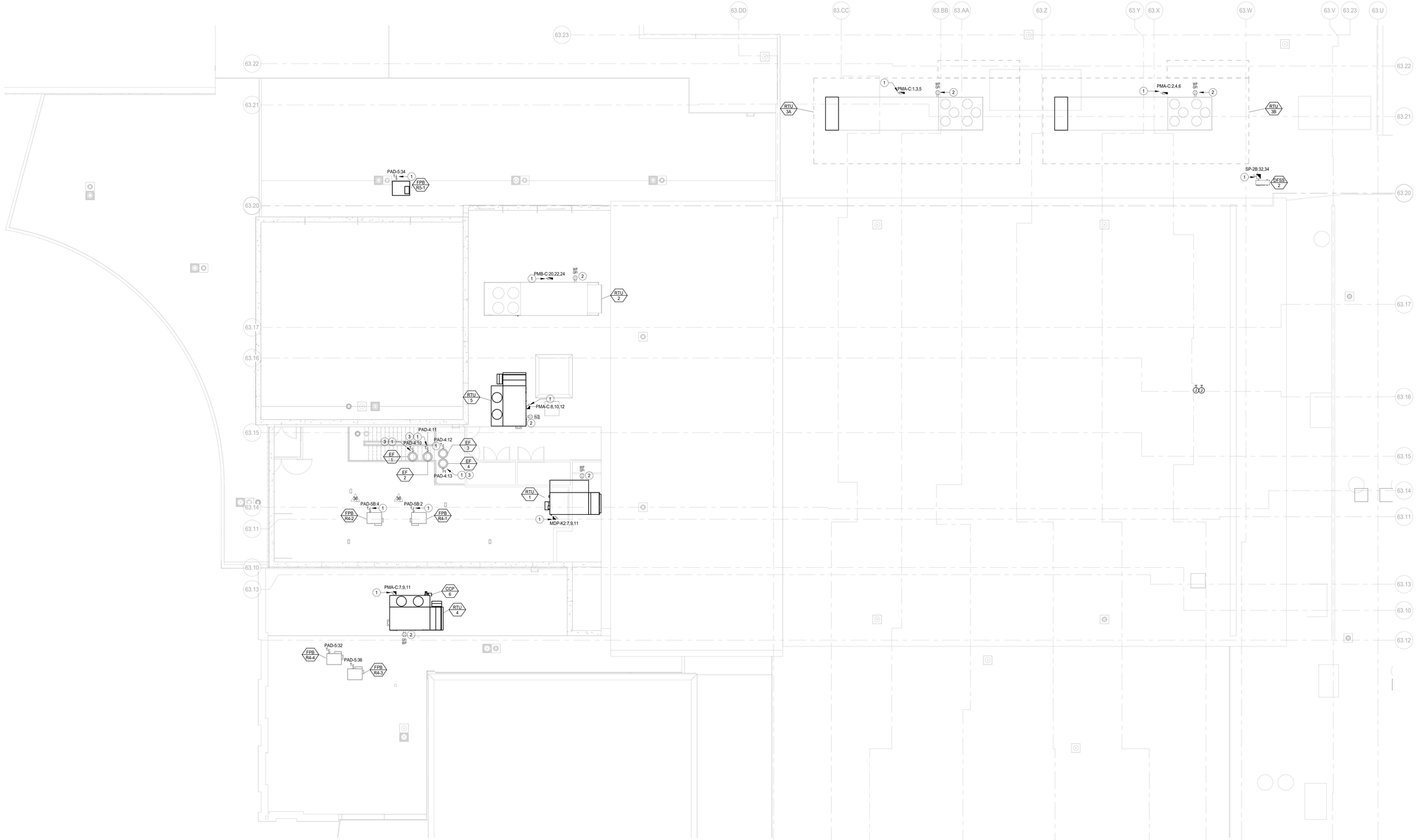
19. REFER TO THE MECHANICAL AND PLUMBING DEMOLITION DRAWINGS FOR ALL MECHANICAL EQUIPMENT THAT IS TO BE ELECTRONICALLY DISCONNECTED OR REMOVED.
20. THIS CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL DOWN STREAM ELECTRICAL DEVICES AFFECTED BY THE DEMOLITION SHALL BE IN FULL OPERATION AFTER WORK IS COMPLETE.
21. THE OWNER SHALL HAVE FULL SALVAGE RIGHTS OVER ANY ELECTRICAL DEVICES THAT ARE SCHEDULED TO BE DEMOLISHED. COORDINATE IN FIELD WITH OWNER.
22. TO CONTROL ALL THE SINGLE PHASE FANS AND PUMP PROVIDE MANUAL MOTOR STARTER THERMAL OVERLOAD SWITCH AND 120V,20AMPS. CONTROL RELAY/CONTACTOR TO CONTROL PUMP/FAN (VERIFY CONTROL VOLTAGE WITH BUILDING AUTOMATION SYSTEM CONTRACTOR).
23. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
24. REFER TO SPECIFICATION SECTION 260535 FOR ELECTRICAL BOX PUTTY PAD REQUIREMENTS FOR ACOUSTICALLY CRITICAL AND ACOUSTICALLY SENSITIVE WALLS AND PARTITIONS AS DEFINED IN THE AC1 SERIES DRAWINGS.



1 ROOF POWER PLAN AREA F
SCALE: 1/8" = 1'-0"

N

DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

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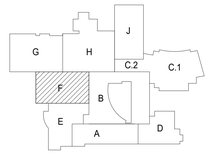


NORTH

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

ROOF POWER PLAN AREA F

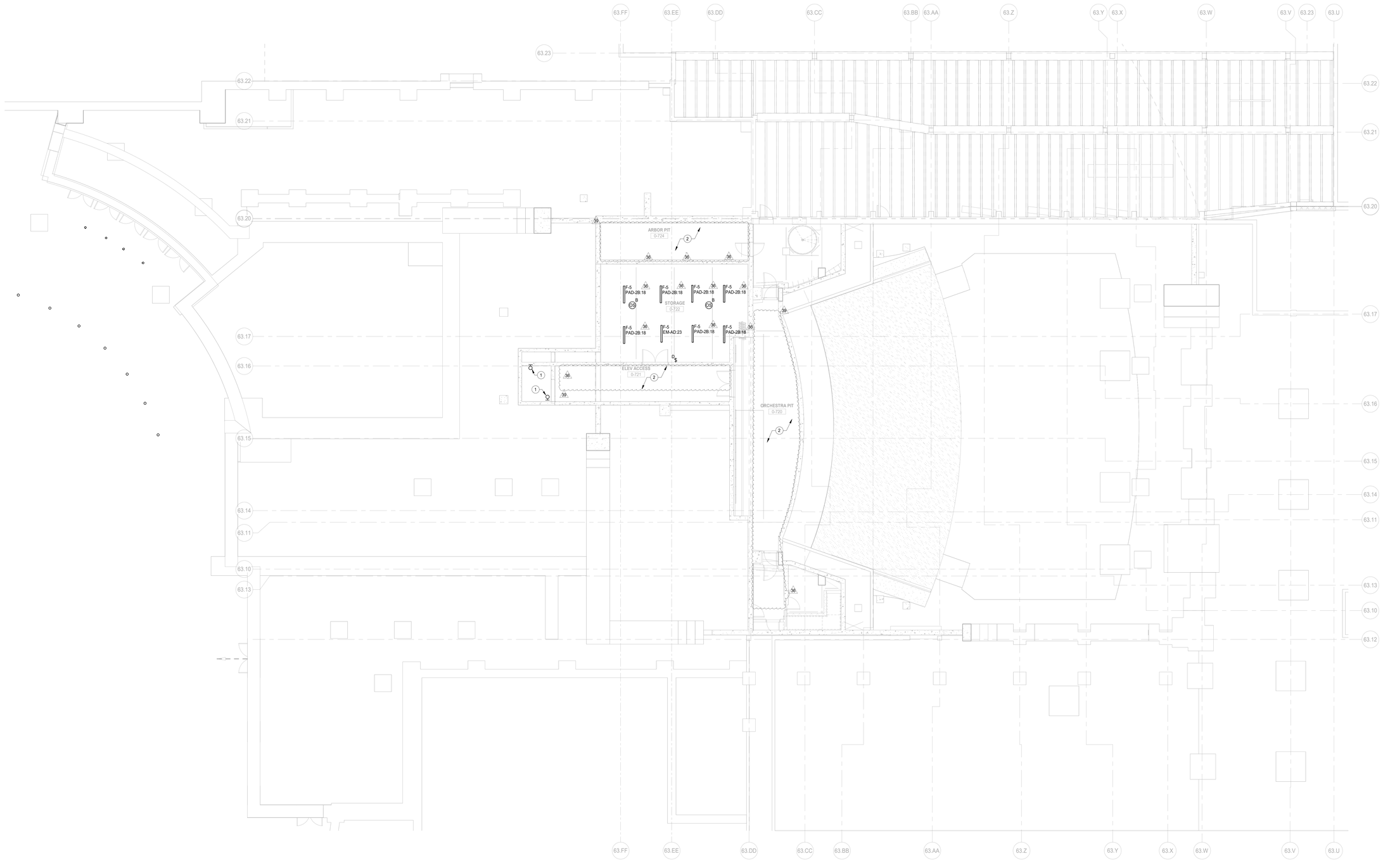
Project Number:
5274-42
Drawn By:
Author
Sheet:

E2.04F-1c

#	KEYNOTES
1	PROVIDE LITHONIA LITGHTING OLVT6M TYPE 6000K MVOLT TYPE GREY COLOR JELLY JAR FIXTURE. PROVIDE NEW 120V LIGHTING CIRCUIT FROM NEAREST PANEL AND SWITCH NEAR THE LADDER.
2	LIGHTING LAYOUTS THESE AREAS PER THEATRICAL CONSULTANTS DRAWINGS.

GENERAL NOTES

1. THESE NOTES APPLICABLE TO ALL LIGHTING PLANS
2. THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR SHARED NEUTRAL CONDUCTORS WHICH THE MINIMUM SIZE SHALL BE #10 AWG. THE MINIMUM CONDUIT SIZE FOR HOMERUNS SHALL BE 3/4".
3. ALL LIGHTING BRANCH CIRCUITS SHALL TERMINATE AT 20A/1-POLE CIRCUIT BREAKERS IN PANELBOARD INDICATED UNLESS NOTED OTHERWISE.
4. PROVIDE LOCK-ON CIRCUIT BREAKER DEVICES FOR ALL EMERGENCY LIGHTING & EXIT SIGN BRANCH CIRCUITS.
5. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LUMINAIRE LOCATIONS.
6. ALL LUMINAIRES SHOWN HALF SHADED SHALL BE WIRED (NON-SWITCHED CIRCUIT) DIRECTLY TO THE EMERGENCY PANEL. PROVIDE DEDICATED NEUTRAL CONDUCTOR TO EACH BRANCH CIRCUIT TO THE EMERGENCY PANEL.
7. CIRCUIT NUMBER(S), WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF "AS BUILT" DRAWINGS.
8. EMERGENCY BATTERY PACKS SHOWN ARE TO BE CONNECTED TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF LOCAL SWITCH UNLESS NOTED OTHERWISE.
9. ALL LAY-IN LUMINAIRES SHALL BE INDEPENDENTLY SUPPORTED AT OPPOSITE CORNERS TO A STRUCTURAL MEMBER.
10. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL PONTS.
11. PROVIDE SEPARATE NEUTRAL FOR ALL DIMMED CIRCUITS.
12. CONTRACTOR SHALL PROVIDE COMMON DISCONNECTING MEANS FOR BRANCH CIRCUITS UTILIZING SHARED NEUTRALS PER ARTICLE 210.4(B). HANDLE TIES ARE ACCEPTABLE WHEN BREAKERS ARE "SLASH RATED" FOR THE HIGHER SYSTEM VOLTAGE RATING OF THE SYSTEM. WHEN HANDLE TIES ARE NOT POSSIBLE DUE TO NON-ADJACENT BREAKERS, PROVIDE A DEDICATED NEUTRAL FOR EACH UNGROUNDED CONDUCTOR.
13. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
14. REFER TO SPECIFICATION SECTION 260535 FOR ELECTRICAL BOX PUTTY PAD REQUIREMENTS FOR ACOUSTICALLY CRITICAL AND ACOUSTICALLY SENSITIVE WALLS AND PARTITIONS AS DEFINED IN THE AC1 SERIES DRAWINGS.



1 LOWER LEVEL LIGHTING PLAN AREA F
SCALE: 1/8" = 1'-0"

N

DISTRICT 99

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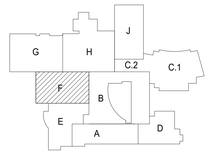


NORTH

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

LOWER LEVEL LIGHITNG PLAN AREA F

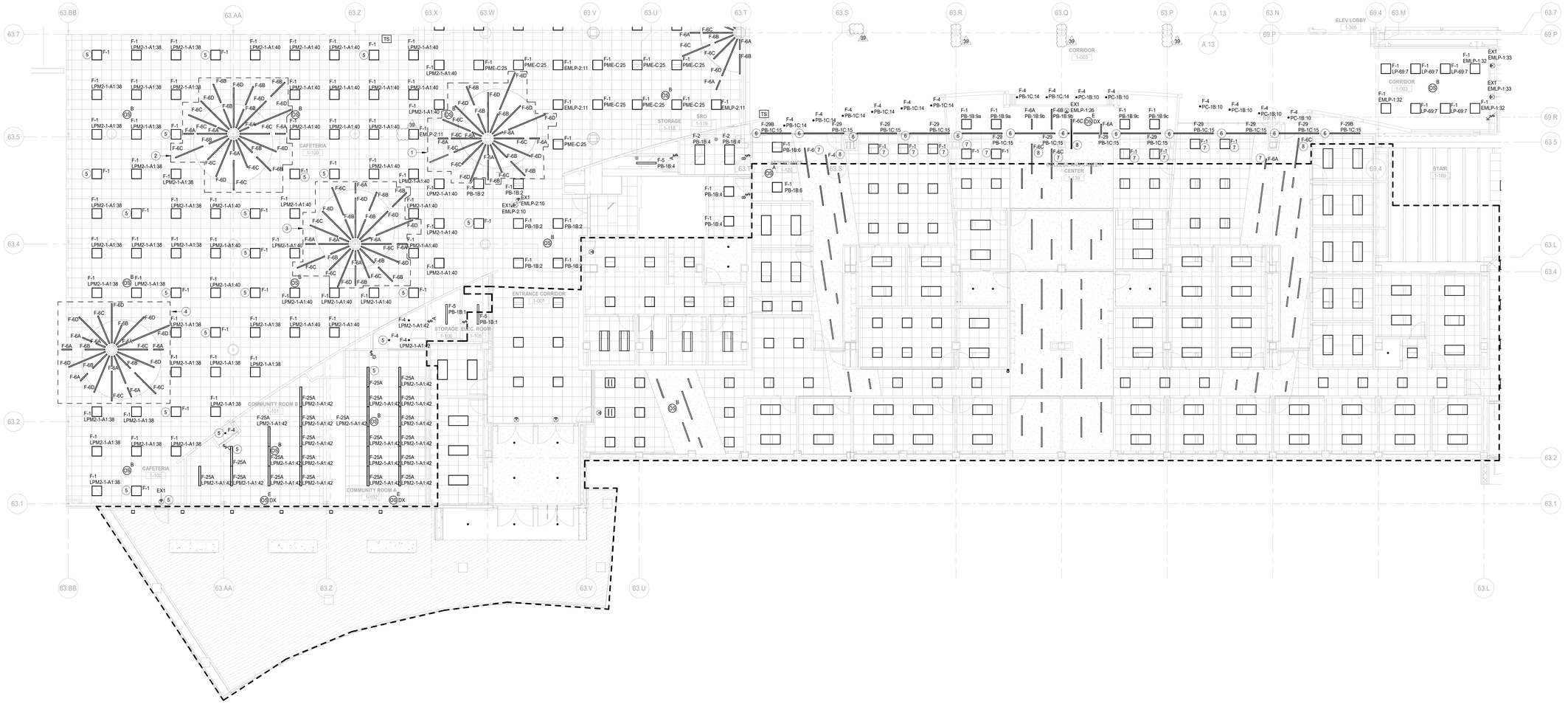
Project Number:
5274-42
Drawn By:
Author
Sheet:
E3.00F-1c

KEYNOTES

#	
1	POWER F-4 TYPES OF LIGHTS IN THE AREA FROM CIRCUIT PNF-C:32.
2	POWER F-6 TYPES OF LIGHTS IN THE AREA FROM CIRCUIT LPM2-1-A1:37.
3	POWER F-6 TYPES OF LIGHTS IN THE AREA FROM CIRCUIT LPM2-1-A1:39.
4	POWER F-6 TYPES OF LIGHTS IN THE AREA FROM CIRCUIT LPM2-1-A1:41.
5	CONNECT THE LIGHTS TO EMERGENCY LIGHTING CIRCUITS SERVING THE AREA. INTERECEPT AND EXTEND EXISTING CIRCUIT AS REQUIRED. LOCATE THE EMERGENCY CIRCUIT IN THE FIELD.
6	REFER TO ARCHITECTURAL DRAWINGS FOR EXACT MOUNTING LOCATION OF THE F-29 FIXTURE PRIOR TO START.
7	CONNECT THE NEW LIGHTS TO EXISTING LIGHTING CIRCUIT SERVING THE ADMIN AREA. VERIFY IN THE FIELD.
8	CONNECT THE NEW LIGHTS TO EXISTING EXMERGENCY LIGHTING CIRCUIT SERVING THE ADMIN AREA. VERIFY IN THE FIELD.

GENERAL NOTES

1. THESE NOTES APPLICABLE TO ALL LIGHTING PLANS
2. THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR SHARED NEUTRAL CONDUCTORS WHICH THE MINIMUM SIZE SHALL BE #10 AWG. THE MINIMUM CONDUIT SIZE FOR HOMERUNS SHALL BE 3/4".
3. ALL LIGHTING BRANCH CIRCUITS SHALL TERMINATE AT 20A/1-POLE CIRCUIT BREAKERS IN PANELBOARD INDICATED UNLESS NOTED OTHERWISE.
4. PROVIDE LOCK-ON CIRCUIT BREAKER DEVICES FOR ALL EMERGENCY LIGHTING & EXIT SIGN BRANCH CIRCUITS.
5. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LUMINAIRE LOCATIONS.
6. ALL LUMINAIRES SHOWN HALF SHADED SHALL BE WIRED (NON-SWITCHED CIRCUIT) DIRECTLY TO THE EMERGENCY PANEL, PROVIDE DEDICATED NEUTRAL CONDUCTOR TO EACH BRANCH CIRCUIT TO THE EMERGENCY PANEL.
7. CIRCUIT NUMBER(S), WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF "AS BUILT" DRAWINGS.
8. EMERGENCY BATTERY PACKS SHOWN ARE TO BE CONNECTED TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF LOCAL SWITCH UNLESS NOTED OTHERWISE.
9. ALL LAY-IN LUMINAIRES SHALL BE INDEPENDENTLY SUPPORTED AT OPPOSITE CORNERS TO A STRUCTURAL MEMBER.
10. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL POINTS.
11. PROVIDE SEPARATE NEUTRAL FOR ALL DIMMED CIRCUITS.
12. CONTRACTOR SHALL PROVIDE COMMON DISCONNECTING MEANS FOR BRANCH CIRCUITS UTILIZING SHARED NEUTRALS PER ARTICLE 210.4(B). HANDLE TIES ARE ACCEPTABLE WHEN BREAKERS ARE "SLASH RATED" FOR THE HIGHER SYSTEM VOLTAGE RATING OF THE SYSTEM. WHEN HANDLE TIES ARE NOT POSSIBLE DUE TO NON-ADJACENT BREAKERS, PROVIDE A DEDICATED NEUTRAL FOR EACH UNGROUNDED CONDUCTOR.
13. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
14. REFER TO SPECIFICATION SECTION 260535 FOR ELECTRICAL BOX PUTTY PAD REQUIREMENTS FOR ACOUSTICALLY CRITICAL AND ACOUSTICALLY SENSITIVE WALLS AND PARTITIONS AS DEFINED IN THE AC1 SERIES DRAWINGS.



1 FIRST FLOOR LIGHTING PLAN AREA B
SCALE: 1/8" = 1'-0"

DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

Wight

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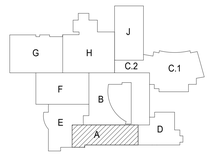

NORTH

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	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

FIRST FLOOR LIGHTING PLAN AREA A

Project Number:
5274-42
Drawn By:
Author
Sheet:
E3.01A-1c

GENERAL NOTES

1. THESE NOTES APPLICABLE TO ALL LIGHTING PLANS
2. THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR SHARED NEUTRAL CONDUCTORS WHICH THE MINIMUM SIZE SHALL BE #10 AWG. THE MINIMUM CONDUIT SIZE FOR HOMERUNS SHALL BE 3/4"
3. ALL LIGHTING BRANCH CIRCUITS SHALL TERMINATE AT 20A/1-POLE CIRCUIT BREAKERS IN PANELBOARD INDICATED UNLESS NOTED OTHERWISE
4. PROVIDE LOCK-ON CIRCUIT BREAKER DEVICES FOR ALL EMERGENCY LIGHTING & EXIT SIGN BRANCH CIRCUITS.
5. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LUMINAIRE LOCATIONS.
6. ALL LUMINAIRES SHOWN HALF SHADED SHALL BE WIRED (NON-SWITCHED CIRCUIT) DIRECTLY TO THE EMERGENCY PANEL. PROVIDE DEDICATED NEUTRAL CONDUCTOR TO EACH BRANCH CIRCUIT TO THE EMERGENCY PANEL.
7. CIRCUIT NUMBER(S), WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF "AS BUILT" DRAWINGS.
8. EMERGENCY BATTERY PACKS SHOWN ARE TO BE CONNECTED TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF LOCAL SWITCH UNLESS NOTED OTHERWISE.
9. ALL LAY-IN LUMINAIRES SHALL BE INDEPENDENTLY SUPPORTED AT OPPOSITE CORNERS TO A STRUCTURAL MEMBER.
10. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL POINTS.
11. PROVIDE SEPARATE NEUTRAL FOR ALL DIMMED CIRCUITS.
12. CONTRACTOR SHALL PROVIDE COMMON DISCONNECTING MEANS FOR BRANCH CIRCUITS UTILIZING SHARED NEUTRALS PER ARTICLE 210.4(B). HANDLE TIES ARE ACCEPTABLE WHEN BREAKERS ARE "SLASH RATED" FOR THE HIGHER SYSTEM VOLTAGE RATING OF THE SYSTEM. WHEN HANDLE TIES ARE NOT POSSIBLE DUE TO NON-ADJACENT BREAKERS, PROVIDE A DEDICATED NEUTRAL FOR EACH UNGROUNDED CONDUCTOR.
13. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
14. REFER TO SPECIFICATION SECTION 260535 FOR ELECTRICAL BOX PUTTY PAD REQUIREMENTS FOR ACOUSTICALLY CRITICAL AND ACOUSTICALLY SENSITIVE WALLS AND PARTITIONS AS DEFINED IN THE AC1 SERIES DRAWINGS.

(#) KEYNOTES

1	PROVIDE LITHONIA LITGHTING OLVTWM TYPE 4000K MVOLT TYPE GREY COLOR JELLY JAR FIXTURE. PROVIDE NEW 120V LIGHTING CIRCUIT FROM NEAREST PANEL.
2	PROVIDE LIGHTING CONTROLSWITCH NEAR THE LADDER.
3	CONNECT THE F-6 TYPES OF LIGHTS IN THE AREA FROM CIRCUIT PMG-C.32.
4	CONNECT THE F-6 TYPES OF LIGHTS IN THE AREA FROM CIRCUIT PMG-C.34.
5	CONNECT THE F-6 TYPES OF LIGHTS IN THE AREA FROM CIRCUIT PMG-C.29.
6	CONNECT THE F-6 TYPES OF LIGHTS IN THE AREA FROM CIRCUIT PMF-C.26.
7	CONNECT THE F-6 TYPES OF LIGHTS IN THE AREA FROM CIRCUIT PMF-C.28.
8	CONNECT THE F-6 TYPES OF LIGHTS IN THE AREA FROM CIRCUIT PMF-C.30.
9	CONNECT THE NEW LIGHTING FIXTURES TO EXISTING EMERGENCY LIGHTING CIRCUIT SERVING THE CORRIDOR. INTERCEPT AND EXTEND EXISITNG CABLES AND CONDUIT AS REQUIRED.VERIFY IN FIELD.
10	CONNECT THE NEW LIGHTING FIXTURES TO EXISTING LIGHTING CIRCUIT SERVING THE CORRIDOR. INTERCEPT AND EXTEND EXISITNG CABLES AND CONDUIT AS REQUIRED.VERIFY IN FIELD.
11	WALL MOUNTED OCCUPANCY SENSOR.

1 FIRST FLOOR LIGHTING PLAN AREA B
SCALE: 1/8" = 1'-0"

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NORTH

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

FIRST FLOOR LIGHTING PLAN AREA B

Project Number:
5274-42
Drawn By:
Author
Sheet:

E3.01B-1c

#	KEYNOTES
1	PROVIDE NEW LITHONIA LIGHTING OLVTWM 4000K MVOLT GREY COLOR LIGHTING FIXTURE LED. PROVIDE 120V LIGHTING CIRCUIT FROM THE NEAREST PANEL.
2	PROVIDE LIGHITNG SWITCH NEAR LADDER.
3	PROVIDE EMERGENCY LIGHTING CIRCUITS EM-AD:14 AND EM-AD:16 FOR THE AISLE LIGHTING FOR SEATING. REFER TO THEATRE CONSULTANTS DRAWINGS FOR SEAT MOUNT AISLE LIGHTING DETAILS AND COORDINATE WITH SEATING MANUFACTURER FOR DETAILS.
4	USE #10 AWG WIRES FOR THE LIGHTS IN THE MARKED AREA FOR PHASE NEUTRAL AND GROUND
5	COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS. TYPICAL FOR ALL F15 LIGHTING FIXTURES.
6	MOUNT THIS F-5 TYPE OF LIGHT SURFACE TO THE LOW CEILING. LIGHT TO BE CONTROLLED BY OCCUPANCY SENSORS FROM THE SCENE SHOP.
7	WALL MOUNTED OCCUPANCY SENSOR.
8	CONNECT THE DRESSING ROOM LIGHTS TO LIGHTING CIRCUIT PAD-1B:19. CONNECT THE LIGHT FIXTURE NEAR THE DOOR TO EMERGENCY LIGHTING CIRCUIT SERVING THE CORRIDOR.
9	CONNECT THE DRESSING ROOM LIGHTS TO LIGHTING CIRCUIT PAD-1B:21. CONNECT THE LIGHT FIXTURE NEAR THE DOOR TO EMERGENCY LIGHTING CIRCUIT SERVING THE CORRIDOR.
10	CONNECT THE LIGHTS IN THE CORRIDOR TO THE CIRCUIT PAD-1B:23.
11	POWER FOR DRESSING ROOM VANITY LIGHTS. REFER TO ARCHITECTURAL, AND THEATRE CONSULTANT DRAWINGS FOR MORE DETAILS.
12	IN CORRIDOR LIGHT ON THE SAME CIRCUIT. AND SWITCH LEG AS THE VANITY LIGHTS. REFER TO THEATRE CONSULTANTS DRAWINGS FOR EXACT LOCATION AND MORE DETAILS.
13	SWITCH FOR VANITY LIGHTS.
14	NEW EXTERIOR LIGHTS TO BE CONTROLLED BY EXITING TIME CLOCK LOCATED IN THE CUSTODIAL CLOSET IN THE CAFETORIUM.

GENERAL NOTES

1. THESE NOTES APPLICABLE TO ALL LIGHTING PLANS
2. THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR SHARED NEUTRAL CONDUCTORS WHICH THE MINIMUM SIZE SHALL BE #10 AWG. THE MINIMUM CONDUIT SIZE FOR HOMERUNS SHALL BE 3/4".
3. ALL LIGHTING BRANCH CIRCUITS SHALL TERMINATE AT 20A/1-POLE CIRCUIT BREAKERS IN PANELBOARD INDICATED UNLESS NOTED OTHERWISE.
4. PROVIDE LOCK-ON CIRCUIT BREAKER DEVICES FOR ALL EMERGENCY LIGHTING & EXIT SIGN BRANCH CIRCUITS.
5. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LUMINAIRE LOCATIONS.
6. ALL LUMINAIRES SHOWN HALF SHADED SHALL BE WIRED (NON-SWITCHED CIRCUIT) DIRECTLY TO THE EMERGENCY PANEL. PROVIDE DEDICATED NEUTRAL CONDUCTOR TO EACH BRANCH CIRCUIT TO THE EMERGENCY PANEL.
7. CIRCUIT NUMBER(S), WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF "AS BUILT" DRAWINGS.
8. EMERGENCY BATTERY PACKS SHOWN ARE TO BE CONNECTED TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF LOCAL SWITCH UNLESS NOTED OTHERWISE.
9. ALL LAY-IN LUMINAIRES SHALL BE INDEPENDENTLY SUPPORTED AT OPPOSITE CORNERS TO A STRUCTURAL MEMBER.
10. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL POINTS.
11. PROVIDE SEPARATE NEUTRAL FOR ALL DIMMED CIRCUITS.
12. CONTRACTOR SHALL PROVIDE COMMON DISCONNECTING MEANS FOR BRANCH CIRCUITS UTILIZING SHARED NEUTRALS PER ARTICLE 210.4(B). HANDLE TIES ARE ACCEPTABLE WHEN BREAKERS ARE "SLASH RATED" FOR THE HIGHER SYSTEM VOLTAGE RATING OF THE SYSTEM. WHEN HANDLE TIES ARE NOT POSSIBLE DUE TO NON-ADJACENT BREAKERS, PROVIDE A DEDICATED NEUTRAL FOR EACH UNGROUNDED CONDUCTOR.
13. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
14. REFER TO SPECIFICATION SECTION 260535 FOR ELECTRICAL BOX PUTTY PAD REQUIREMENTS FOR ACOUSTICALLY CRITICAL AND ACOUSTICALLY SENSITIVE WALLS AND PARTITIONS AS DEFINED IN THE AC1 SERIES DRAWINGS.

1 FIRST FLOOR LIGHTING PLAN AREA F
SCALE: 1/8" = 1'-0"

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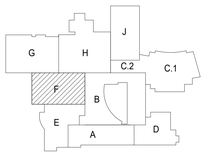

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REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

FIRST FLOOR LIGHTING PLAN AREA F

Project Number:
5274-42
Drawn By:
Author
Sheet:

E3.01F-1c

GENERAL NOTES

1. THESE NOTES APPLICABLE TO ALL LIGHTING PLANS
2. THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR SHARED NEUTRAL CONDUCTORS WHICH THE MINIMUM SIZE SHALL BE #10 AWG. THE MINIMUM CONDUIT SIZE FOR HOMERUNS SHALL BE 3/4".
3. ALL LIGHTING BRANCH CIRCUITS SHALL TERMINATE AT 20A/1-POLE CIRCUIT BREAKERS IN PANELBOARD INDICATED UNLESS NOTED OTHERWISE.
4. PROVIDE LOCK-ON CIRCUIT BREAKER DEVICES FOR ALL EMERGENCY LIGHTING & EXIT SIGN BRANCH CIRCUITS.
5. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LUMINAIRE LOCATIONS.
6. ALL LUMINAIRES SHOWN HALF SHADED SHALL BE WIRED (NON-SWITCHED CIRCUIT) DIRECTLY TO THE EMERGENCY PANEL. PROVIDE DEDICATED NEUTRAL CONDUCTOR TO EACH BRANCH CIRCUIT TO THE EMERGENCY PANEL.
7. CIRCUIT NUMBER(S), WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF "AS BUILT" DRAWINGS.
8. EMERGENCY BATTERY PACKS SHOWN ARE TO BE CONNECTED TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF LOCAL SWITCH UNLESS NOTED OTHERWISE.
9. ALL LAY-IN LUMINAIRES SHALL BE INDEPENDENTLY SUPPORTED AT OPPOSITE CORNERS TO A STRUCTURAL MEMBER.
10. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL POINTS.
11. PROVIDE SEPARATE NEUTRAL FOR ALL DIMMED CIRCUITS.
12. CONTRACTOR SHALL PROVIDE COMMON DISCONNECTING MEANS FOR BRANCH CIRCUITS UTILIZING SHARED NEUTRALS PER ARTICLE 210.4(B). HANDLE TIES ARE ACCEPTABLE WHEN BREAKERS ARE "SLASH RATED" FOR THE HIGHER SYSTEM VOLTAGE RATING OF THE SYSTEM. WHEN HANDLE TIES ARE NOT POSSIBLE DUE TO NON-ADJACENT BREAKERS, PROVIDE A DEDICATED NEUTRAL FOR EACH UNGROUNDED CONDUCTOR.
13. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
14. REFER TO SPECIFICATION SECTION 260535 FOR ELECTRICAL BOX PUTTY PAD REQUIREMENTS FOR ACOUSTICALLY CRITICAL AND ACOUSTICALLY SENSITIVE WALLS AND PARTITIONS AS DEFINED IN THE AC1 SERIES DRAWINGS.

(#) KEYNOTES

1. CONNECT THE NEW LIGHTING FIXTURES TO EXISTING EMERGENCY LIGHTING CIRCUIT SERVING THE CORRIDOR. INTERCEPT AND EXTEND EXISTING CABLES AND CONDUIT AS REQUIRED.VERIFY IN FIELD.
2. PROVIDE NEW LITHONIA OLVTHM 4000K GREY COLOR LIGHTING FIXTURE LED. PROVIDE AT EVERY LEVEL IN THE SHAFT.
3. PROVIDE LIGHTING CONTROL SWITCH NEAR TO THE LADDER.
4. CONNECT THE NEW LIGHTING FIXTURES TO EXISTING LIGHTING CIRCUITS SERVING THE CORRIDOR. INTERCEPT AND EXTEND CABLES AND CONDUIT AS REQUIRED. VERFIY IN FIELD.

1 SECOND FLOOR LIGHTING PLAN AREA B
SCALE: 1/8" = 1'-0"

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	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

SECOND FLOOR LIGHTING PLAN AREA B

Project Number: 5274-42
Drawn By: Author
Sheet:

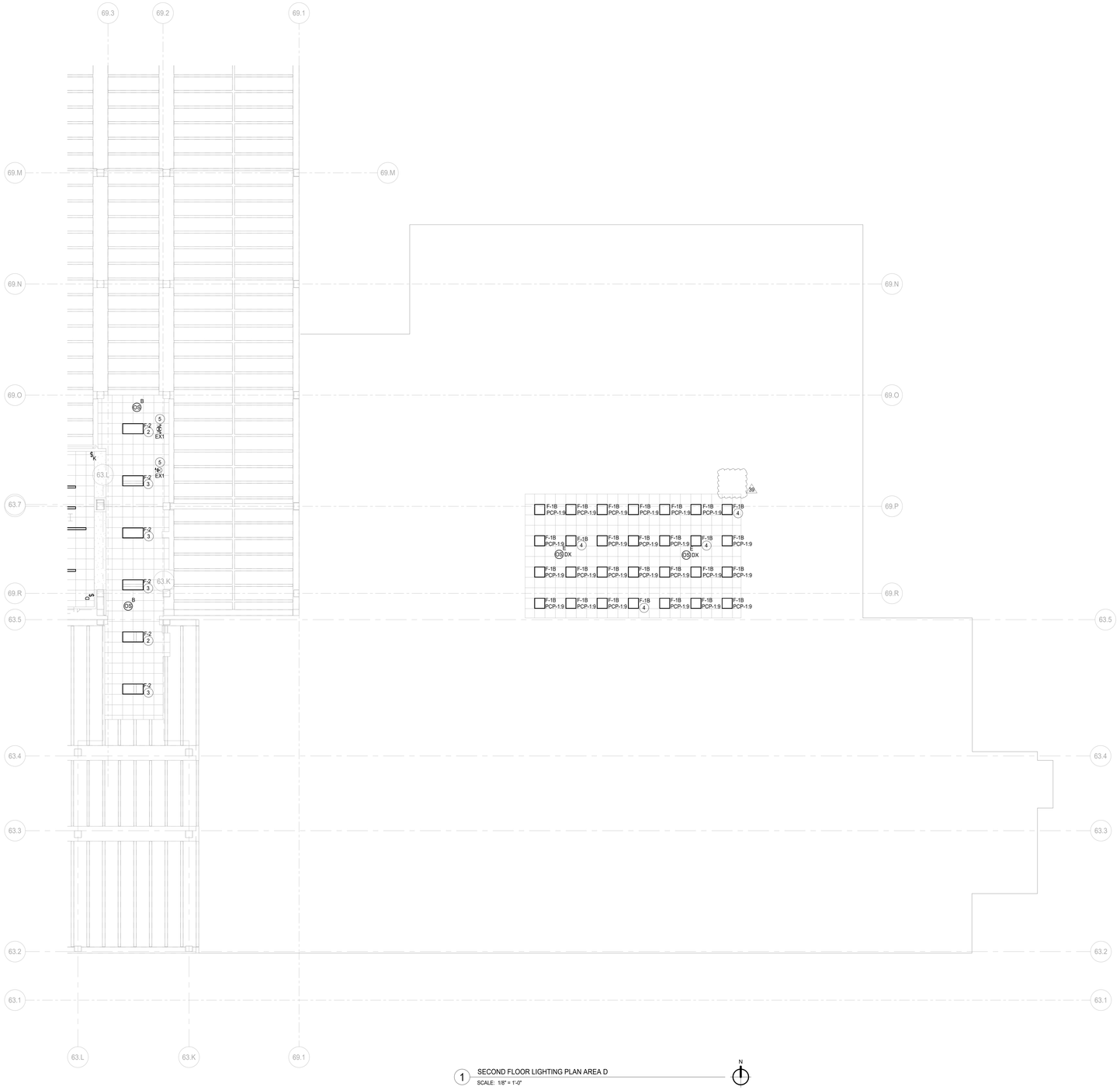
E3.02B-1c

GENERAL NOTES

1. THESE NOTES APPLICABLE TO ALL LIGHTING PLANS.
2. THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR SHARED NEUTRAL CONDUCTORS WHICH THE MINIMUM SIZE SHALL BE #10 AWG. THE MINIMUM CONDUIT SIZE FOR HOMERUNS SHALL BE 3/4".
3. ALL LIGHTING BRANCH CIRCUITS SHALL TERMINATE AT 20A/1-POLE CIRCUIT BREAKERS IN PANELBOARD INDICATED UNLESS NOTED OTHERWISE.
4. PROVIDE LOCK-ON CIRCUIT BREAKER DEVICES FOR ALL EMERGENCY LIGHTING & EXIT SIGN BRANCH CIRCUITS.
5. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LUMINAIRE LOCATIONS.
6. ALL LUMINAIRES SHOWN HALF SHADED SHALL BE WIRED (NON-SWITCHED CIRCUIT) DIRECTLY TO THE EMERGENCY PANEL. PROVIDE DEDICATED NEUTRAL CONDUCTOR TO EACH BRANCH CIRCUIT TO THE EMERGENCY PANEL.
7. CIRCUIT NUMBER(S), WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF "AS BUILT" DRAWINGS.
8. EMERGENCY BATTERY PACKS SHOWN ARE TO BE CONNECTED TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF LOCAL SWITCH UNLESS NOTED OTHERWISE.
9. ALL LAY-IN LUMINAIRES SHALL BE INDEPENDENTLY SUPPORTED AT OPPOSITE CORNERS TO A STRUCTURAL MEMBER.
10. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL POINTS.
11. PROVIDE SEPARATE NEUTRAL FOR ALL DIMMED CIRCUITS.
12. CONTRACTOR SHALL PROVIDE COMMON DISCONNECTING MEANS FOR BRANCH CIRCUITS UTILIZING SHARED NEUTRALS PER ARTICLE 210.4(B). HANDLE TIES ARE ACCEPTABLE WHEN BREAKERS ARE "SLASH RATED" FOR THE HIGHER SYSTEM VOLTAGE RATING OF THE SYSTEM. WHEN HANDLE TIES ARE NOT POSSIBLE DUE TO NON-ADJACENT BREAKERS, PROVIDE A DEDICATED NEUTRAL FOR EACH UNGROUNDED CONDUCTOR.
13. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
14. REFER TO SPECIFICATION SECTION 260535 FOR ELECTRICAL BOX PUTTY PAD REQUIREMENTS FOR ACOUSTICALLY CRITICAL AND ACOUSTICALLY SENSITIVE WALLS AND PARTITIONS AS DEFINED IN THE AC1 SERIES DRAWINGS.

(#) KEYNOTES

1. NOT USED
2. CONNECT THE NEW LIGHTING FIXTURES TO EXISTING EMERGENCY LIGHTING CIRCUIT SERVING THE CORRDIOR.
3. CONNECT THE NEW LIGHTING FIXTURES TO EXISTING LIGHTING CIRCUIT SERVING THE CORRIDOR.
4. CONNECT THE NEW LIGHTS TO EXISTING EMERGENCY BRANCHED CIRCUITS SERVING THE AREA. INTERCEPT AND EXTEND EXISTING CABLES AND CONDUIT AS REQUIRED. VERIFY IN FIELD.
5. CONNECT THE NEW LIGHTING FIXTURES TO EXISTING EMERGENCY LIGHTING CIRCUIT SERVING THE CORRIDOR. INTERCEPT AND EXTEND EXISTING CABLES AND CONDUIT AS REQUIRED.VERIFY IN FIELD.



1 SECOND FLOOR LIGHTING PLAN AREA D
SCALE: 1/8" = 1'-0"

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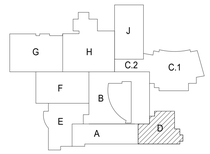

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REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

SECOND FLOOR LIGHITNG PLAN AREA D

Project Number:
5274-42
Drawn By:
Author
Sheet:

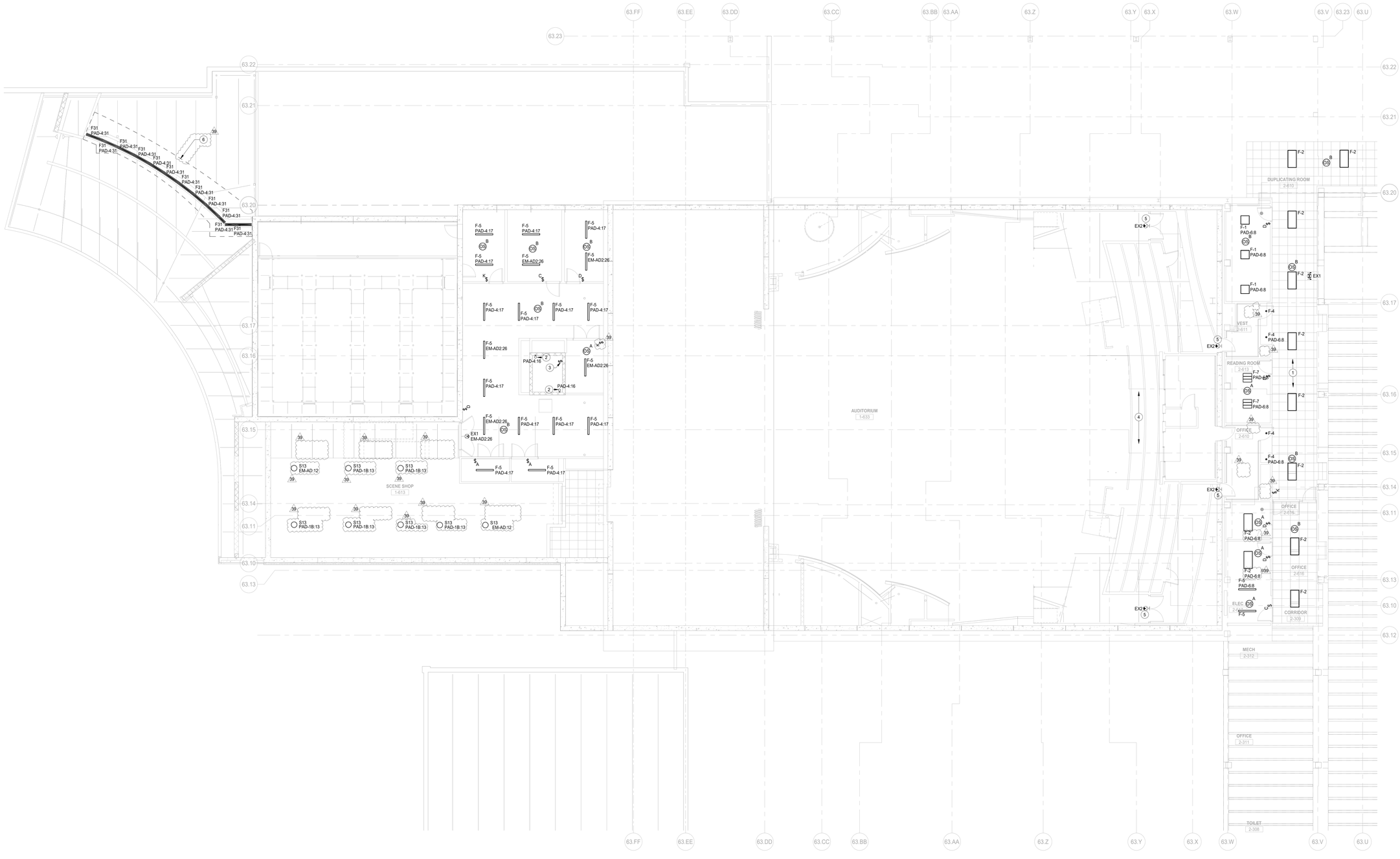
E3.02D-1c

KEYNOTES

#	
1	REFER TO LEVEL-2 AREA B LIGHTING PLANS FOR CIRCUIT AND CONTROLS DETAILS.
2	PROVIDE NEW LITHONIA OLVTWM 4000K GREY COLOR LIGHTING FIXTURE LED. PROVIDE AT ALL THE LEVELS IN THE SHAFT.
3	PROVIDE LIGHTING CONTROL SWITCH NEAR TO THE LADDER.
4	PROVIDE EMERGENCY LIGHTING CIRCUIT EM-AD2.25 FOR AISLE LIGHTING FOR SEATING. REFER TO THEATRE CONSULTANT DRAWINGS FOR SEAT MOUNT AISLE LIGHTING DETAILS AND COORDINATE WITH SEATING MANUFACTURER FOR DETAILS.
5	CONNECT THE NEW EXIT LIGHTS TO EXISTING EMERGENCY EXIT LIGHTING CIRCUIT SERVING THE CORRIDOR.
6	REFER TO ARCHITECTURAL DRAWINGS FOR EXACT MOUNTING REQUIREMENTS FOR THE FIXTURE. THE LIGHT TO BE CONTROLLED BY THE OCCUPANCY SENSOR AND KEY SWITCH FROM THE VESTIBULE.

GENERAL NOTES

1. THESE NOTES APPLICABLE TO ALL LIGHTING PLANS
2. THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR SHARED NEUTRAL CONDUCTORS WHICH THE MINIMUM SIZE SHALL BE #10 AWG. THE MINIMUM CONDUIT SIZE FOR HOMERUNS SHALL BE 3/4".
3. ALL LIGHTING BRANCH CIRCUITS SHALL TERMINATE AT 20A/1-POLE CIRCUIT BREAKERS IN PANELBOARD INDICATED UNLESS NOTED OTHERWISE.
4. PROVIDE LOCK-ON CIRCUIT BREAKER DEVICES FOR ALL EMERGENCY LIGHTING & EXIT SIGN BRANCH CIRCUITS.
5. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LUMINAIRE LOCATIONS.
6. ALL LUMINAIRES SHOWN HALF SHADED SHALL BE WIRED (NON-SWITCHED CIRCUIT) DIRECTLY TO THE EMERGENCY PANEL. PROVIDE DEDICATED NEUTRAL CONDUCTOR TO EACH BRANCH CIRCUIT TO THE EMERGENCY PANEL.
7. CIRCUIT NUMBER(S), WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF "AS BUILT" DRAWINGS.
8. EMERGENCY BATTERY PACKS SHOWN ARE TO BE CONNECTED TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF LOCAL SWITCH UNLESS NOTED OTHERWISE.
9. ALL LAY-IN LUMINAIRES SHALL BE INDEPENDENTLY SUPPORTED AT OPPOSITE CORNERS TO A STRUCTURAL MEMBER.
10. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL POINTS.
11. PROVIDE SEPARATE NEUTRAL FOR ALL DIMMED CIRCUITS.
12. CONTRACTOR SHALL PROVIDE COMMON DISCONNECTING MEANS FOR BRANCH CIRCUITS UTILIZING SHARED NEUTRALS PER ARTICLE 210.4(B). HANDLE TIES ARE ACCEPTABLE WHEN BREAKERS ARE "SLASH RATED" FOR THE HIGHER SYSTEM VOLTAGE RATING OF THE SYSTEM. WHEN HANDLE TIES ARE NOT POSSIBLE DUE TO NON-ADJACENT BREAKERS, PROVIDE A DEDICATED NEUTRAL FOR EACH UNGROUNDED CONDUCTOR.
13. REFER TO AC1 SERIES DRAWINGS FOR IDENTIFICATION OF ACOUSTICALLY SENSITIVE PARTITIONS AND WALLS AND FOR DETAILS OF PENETRATIONS THROUGH THESE WALLS.
14. REFER TO SPECIFICATION SECTION 260535 FOR ELECTRICAL BOX PUTTY PAD REQUIREMENTS FOR ACOUSTICALLY CRITICAL AND ACOUSTICALLY SENSITIVE WALLS AND PARTITIONS AS DEFINED IN THE AC1 SERIES DRAWINGS.



1 SECOND FLOOR LIGHTING PLAN AREA F
SCALE: 1/8" = 1'-0"

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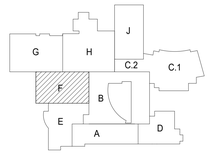

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REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
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	ISSUED FOR 90%CD - PHASE C	11.01.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
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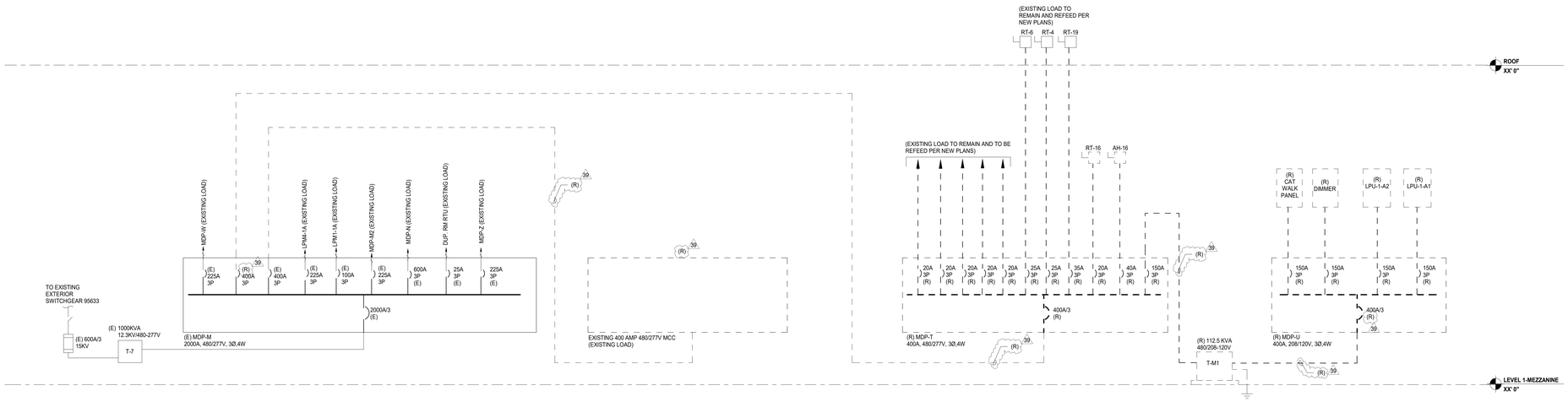
SECOND FLOOR LIGHTING PLAN AREA F

Project Number:
5274-42
Drawn By:
Author
Sheet:

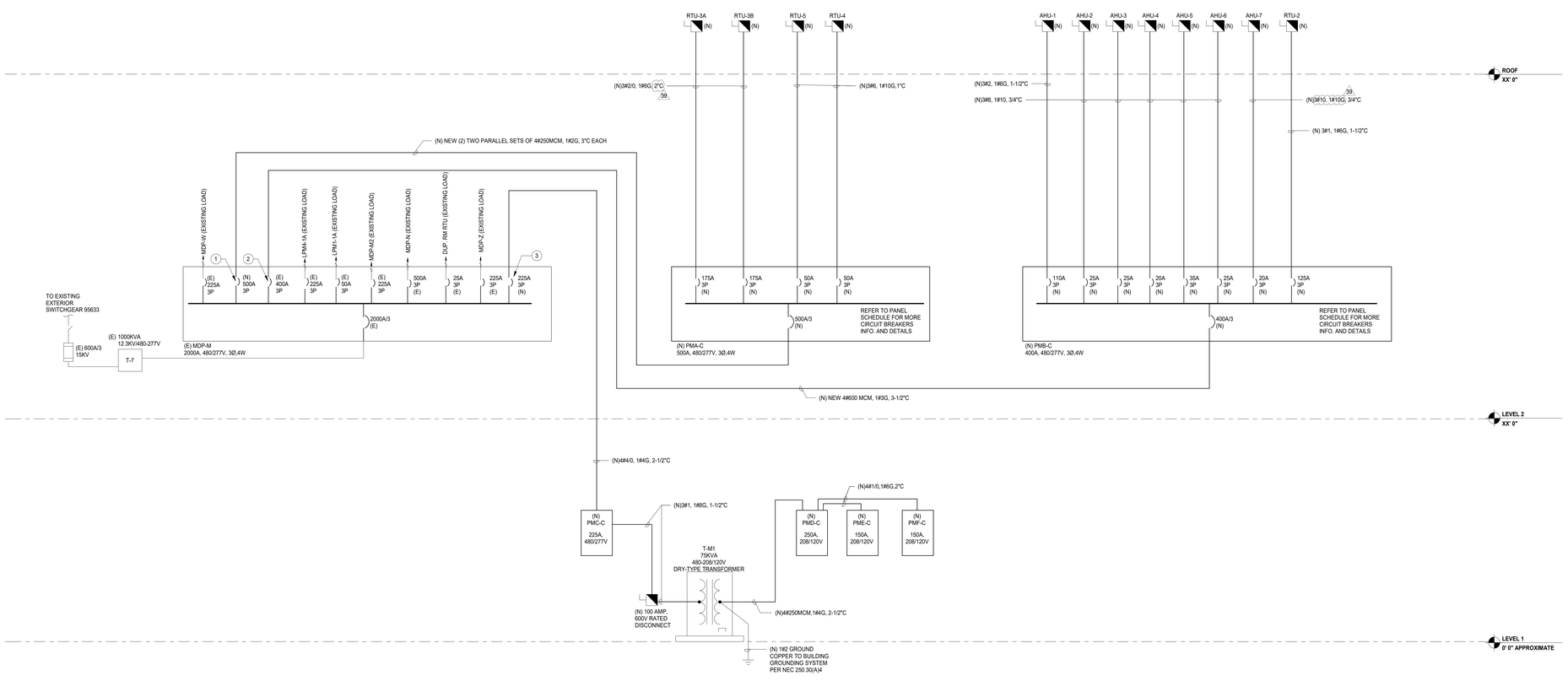
E3.02F-1c

#	KEYNOTES
1	PROVIDE NEW 500AMP, 3-POLE, 600 V RATED CIRCUIT BREAKER TO FEED THE NEW 500 AMP PANEL.
2	USE EXISTING 400 AMP CIRCUIT BREAKER TO FEED THE NEW 400 AMP PANEL.
3	PROVIDE NEW 225AMP, 3-POLE , 600V RATED CIRCUIT BREAKER TO FEED THE NEW PANEL.

DEMOLITION LEGENDS
E - EXISTING TO REMAIN
N - NEW
R- EXISTING TO BE REMOVED
RE- EXISTING TO BE RELOCATED TO A NEW LOCATION



1 DEMO RISER
N.T.S.



2 NEW RISER
N.T.S.

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	ISSUED FOR 25%CD - PHASE C	08.30.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

RISER DIAGRAMS

Project Number:
5274-42
Drawn By:
Author
Sheet:

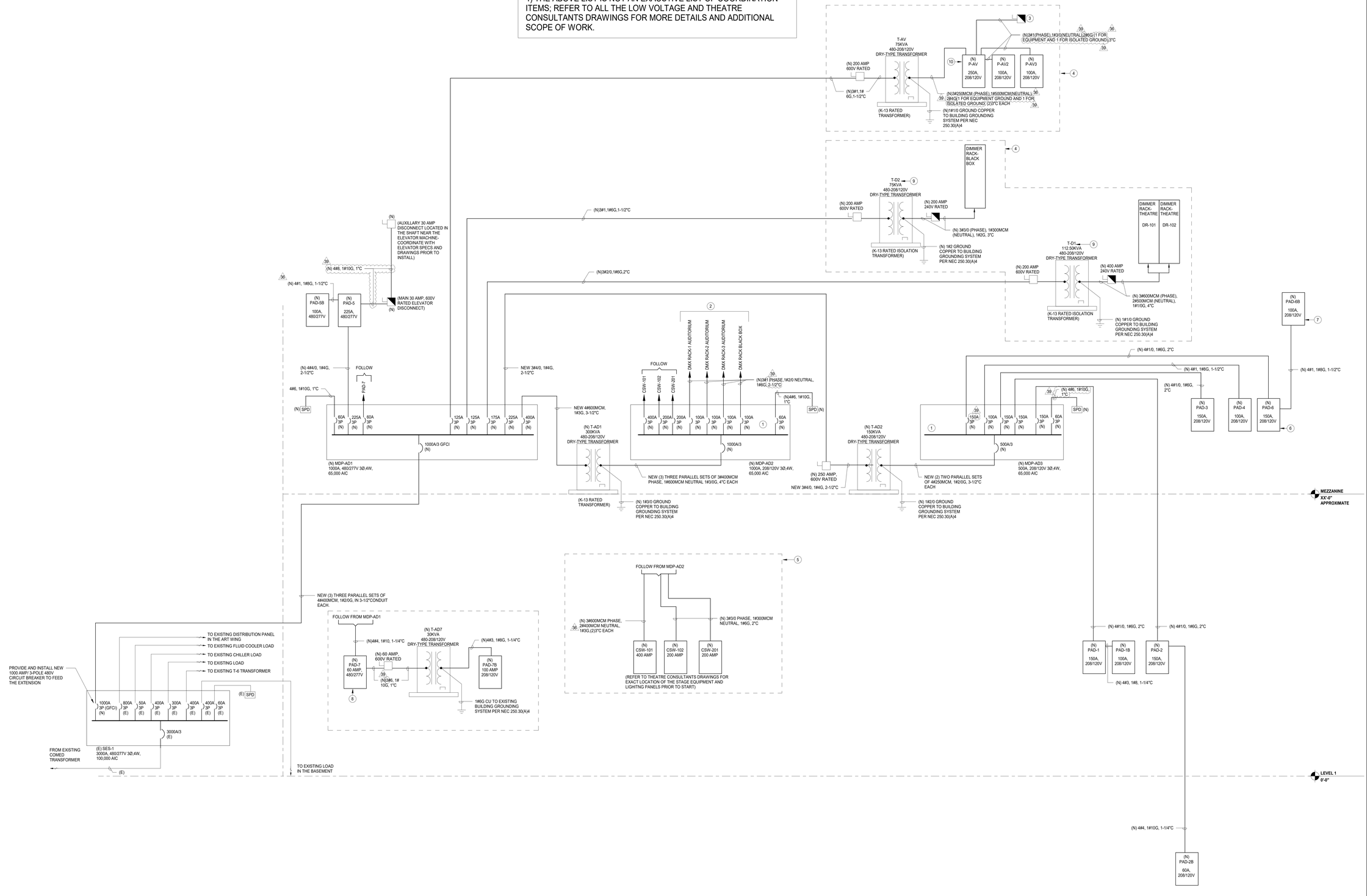
E5.02c

COORDINATION NOTES:

1). REFER TO THEATRE CONSULTANT DRAWINGS FOR MORE SCOPE OF WORK, DETAILS, AND EXTENTS OF SCOPE TO BE PROVIDED AND INSTALLED BY THE CONTRACTOR.
2). REFER TO THEATRE AV CONSULTANTS DRAWINGS FOR MORE SCOPE OF WORK,DETAILS, AND EXTENTS OF SCOPE TO BE PROVIDED AND INSTALLED BY THE CONTRACTOR.
3) REFER TO THEATRE CONSULTANT, THEATRE AV CONSULTANT DRAWINGS AND SPECIFICATIONS FOR WIRING REQUIREMENTS AND TRANSFORMER TYPES TO BE USED FOR THE THEATRE AND BLACK BOX AREA.
4) THE ABOVE LIST IS NOT AN EXAUSTIVE LIST OF COORDINATION ITEMS; REFER TO ALL THE LOW VOLTAGE AND THEATRE CONSULTANTS DRAWINGS FOR MORE DETAILS AND ADDITIONAL SCOPE OF WORK.

SYMBOL LEGEND
E - EXISTING TO REMAIN
N - NEW
R- EXISTING TO BE REMOVED
RE- NEW LOCATION OF EXISTING RELOCATED EQUIPMENT.

#	KEYNOTES
1	PROVIDE 50% BUSSED SPACE FOR FUTURE. SEE SCHEDULE FOR MORE DETAILS.
2	REFER TO AUDITORIUM AND THEATRE CONSULTANT DRWINGS FOR EXACT LOCATION OF RELAY PANELS. DETAILS AND ADDITIONAL SCOPE OF WORK.
3	100AMP, 3 PHASE, 208V COMPANY SWITCH WITH ISOLATED GROUND, REFERTO AV DRAWINGS FOR MORE DETAILS AND SCOPE
4	POWER AND LIGHTING INFRASTRUCTURE FOR AUDITORIUM AND THEATRE SPACES. REFER TO THEATRE AND AV SERIES(PERFORMANCE AV) ,36, CONSULTANT DRAWINGS FOR ADDITIONAL SCOPE, EXACT LOCATION, AND DETAILS.
5	REFER TO THEATRE CONSULTANT DRAWINGS FOR EXACT REQUIREMENTS, DETAILS, AND LOCATION OF THE COMPANY SWITCHES FOR THE STAGE EQUIPMENTS
6	PANEL LOCATED ON LEVEL-2
7	PANEL LOCATED ON LEVEL-3
8	PANEL LOCATED ON LEVEL-1 AREA-B ELECTRICAL ROOM.
9	TRANSFORMER FEEDING THE DIMMER REACK TO BE TAPPED AT 129 VOLTS LINE TO GROUND.
10	PANEL P-AV IS PROVIDED BY AV CONTRACTOR AND INSTALLED BY THIS CONTRACTOR PER SCHEDULE.



1 RISER DIAGRAM-PHASE-C AUDITORIUM AREA
N.T.S.

DISTRICT 99
COMMUNITY HIGH SCHOOL DISTRICT 99

Wight
Wight & Company
wightco.com
2500 North Frontage Road
Darien, IL 60561
P 630.969.7000
F 630.969.7979

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

RISER DIAGRAMS

Project Number:
5274-42
Drawn By:
Author
Sheet:

E5.04c

#	KEYNOTES
1	PROVIDE NEW CIRCUIT BREAKER TO FEED THE NEW PANEL.

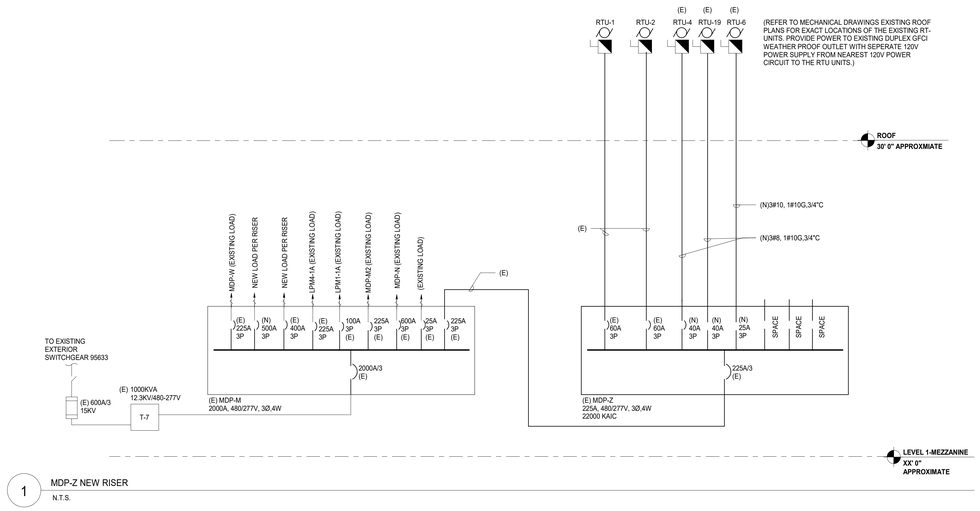
SYMBOL LEGEND

E - EXISTING TO REMAIN

N - NEW

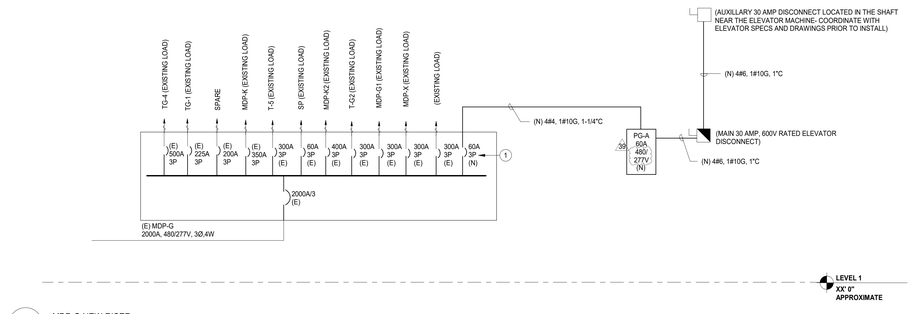
R- EXISTING TO BE REMOVED

RE- NEW LOCATION OF EXISTING RELOCATED EQUIPMENT



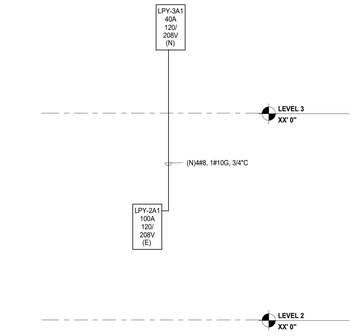
1 MDP-Z NEW RISER

N.T.S.



2 MDP-G NEW RISER

N.T.S.



3 SECOND FLOOR STUDY LOFT RISER

N.T.S.

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

RISER DIAGRAMS

Project Number:
5274-42
Drawn By:
Author
Sheet:

E5.06c

COMMUNITY HIGH SCHOOL DISTRICT 99

Wight & Company
wightco.com
2500 North Frontage Road
Darien, IL 60561
P 630.969.7000
F 630.969.7979

DISTRIBUTION PANEL: MDP-L

LOCATION: ELEC 1-342 (39)
MAIN DEVICE: 400 A MCB
BUS AMPS: 400 AMPS
VOLTAGE: 120/208 Wye V. 3 ø 4 W.
A.I.C.... 22000 AIC
SPECIAL: NEW PANEL

SECTION No. 1

CKT	FR...	POLES	RATING	KVA	DESCRIPTION/NAMEPLATE	NOTES
MDP-L:1	--	3	50 A	5.0 kVA	EXISTING EM TRANSFER SWITCH EMLP-4	
MDP-L:2	--	3	70 A	4.0 kVA	EXISTING 128 CONTROL LIGHTING SWITCHBOARD	
MDP-L:3	--	3	30 A	0.0 kVA	EXISTING EM NORMAL FEED	
MDP-L:4	225 A	3	225 A	27.3...	LP3-2A (EXISTING PANEL -LEVEL 2)	
MDP-L:5	225 A	3	225 A	29.4...	LP3-3A (EXISTING PANEL LEVEL-3)	
MDP-L:6	225 A	3	150 A	36.3...	PL1C	
MDP-L:7	--	3	150 A	9.0 kVA	IPLP55 (EXISTING PANEL IN MUSIC AREA)	
MDP-L:8	--	--	--	-- 0.0 kVA	Space	--
MDP-L:9	--	--	--	-- 0.0 kVA	Space	--
MDP-L:10	--	--	--	-- 0.0 kVA	Space	--
MDP-L:11						
MDP-L:12						
MDP-L:13						
MDP-L:14						
MDP-L:15						
MDP-L:16						
MDP-L:17						
MDP-L:18						
MDP-L:19						
MDP-L:20						
MDP-L:21						
MDP-L:22						
MDP-L:23						
MDP-L:24						
MDP-L:25						
MDP-L:26						

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
RCPT	14280 VA	85.01%	12140 VA		
				CONN. LOAD:	110980 VA
				EST. DEMAND LOAD:	108840 VA
				CONN. CURRENT:	308 A
				EST. DEMAND...	302 A

NOTES:

DISTRIBUTION PANEL: SES-1

LOCATION:
MAIN DEVICE: 3000 A
BUS AMPS: 3000 A
VOLTAGE: 480/277 Wye V. 3 ø 4 W.
A.I.C.... 100,000 AIC
SPECIAL: EXISTING PANEL

SECTION No. 1

CKT	...	POLES	RATING	KVA	DESCRIPTION/NAMEPLATE	NOTES
SES-1:1	--	3	60 A	25.0 kVA	EXISTING	
SES-1:2	--	3	300 A	150.0 kVA	EXISTING	
SES-1:3	--	3	400 A	268.0 kVA	EXISTING	
SES-1:4	--	3	400 A	268.0 kVA	EXISTING DPB	
SES-1:5	--	3	50 A	38.2 kVA	EXISTING FCS-S-01	
SES-1:6	--	3	400 A	274.3 kVA	EXISTING CH-01,04	
SES-1:7	--	3	800 A	378.9 kVA	EXISTING MDP-AR	
SES-1:8	...	3	1000 A	614.9 kVA	MDP-AD1 (N)	
SES-1:9						
SES-1:10						
SES-1:11						
SES-1:12						
SES-1:13						
SES-1:14						
SES-1:15						
SES-1:16						
SES-1:17						
SES-1:18						
SES-1:19						
SES-1:20						
SES-1:21						
SES-1:22						
SES-1:23						
SES-1:24						
SES-1:25						
SES-1:26						

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	60019 VA	100.00%	60019 VA		
Lighting	8680 VA	100.00%	8680 VA		
Motor	177117 VA	105.63%	187115 VA		
Other	17093 VA	100.00%	17093 VA		
Power	37261 VA	100.00%	37261 VA	**CONN. LOAD:**	2017297 VA
RCPT	70980 VA	57.04%	40490 VA	**EST. DEMAND LOAD:**	1987833 VA
LITES	113 VA	125.00%	141 VA	**CONN. CURRENT:**	2426 A
SPEC	3600 VA	100.00%	3600 VA	**EST. DEMAND...**	2391 A

NOTES:
N= PROVIDE NEW 3 POLE CIRCUIT BREAKERS IN THE EXISTING SWITCHBOARD; R= HACR RATED CIRCUIT BREAKER.

PANELBOARD: PL-1C

LOCATION: ELEC 1-342
MOUNTING: SURFACE NEMA1
MAIN DEVICE: 150 A MCB
BUS AMPS: 225 AMPS
VOLTAGE: 120/208 Wye V. 3 ø 4 W.
A.I.C. RATING: 10,000 AMPS SYMMETRICAL
SPECIAL: NEW PANEL

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
RCPT-Learn. commons	20 A	1	PL-1C:1	1.8 1.8			PL-1C:2	1	20 A	RCPT-Learn. commons
RCPT-Learn. commons	20 A	1	PL-1C:3		1.4 0.5		PL-1C:4	1	20 A	RCPT-1-339 Activities
RCPT-Learn. commons	20 A	1	PL-1C:5			0.7 1.1	PL-1C:6	1	20 A	RCPT-1-340 Office
RCPT-341, stairs	20 A	1	PL-1C:7	0.9 0.5			PL-1C:8	1	20 A	RCPT- commons television
COPIER- Office 340	20 A	1	PL-1C:9		1.5 1.3		PL-1C:10	1	20 A	RCPT-338,339
REFRIGERATOR-338	20 A	1	PL-1C:11			1.2 1.5	PL-1C:12	1	20 A	RCPT
Spare	20 A	1	PL-1C:13	0.0 0.0			PL-1C:14	1	20 A	Exiting Load (RE)
Spare	20 A	1	PL-1C:15		0.0 0.0		PL-1C:16	1	20 A	Exiting Load (RE)
Spare	20 A	1	PL-1C:17			0.0 0.0	PL-1C:18	1	20 A	Exiting Load (RE)
Spare	20 A	1	PL-1C:19	0.0 0.0			PL-1C:20	1	20 A	Exiting Load (RE)
Existing load- Spl RCPT(RE)	30 A	2	PL-1C:21		1.0 1.0		PL-1C:22	2	30 A	Existing load- Spl RCPT (RE)
--	--	--	PL-1C:23			1.0 1.0	PL-1C:24	--	--	--
Existing load- Spl RCPT...	30 A	2	PL-1C:25	1.0 1.0			PL-1C:26	2	30 A	Existing load- Spl RCPT (RE)
--	--	--	PL-1C:27		1.0 1.0		PL-1C:28	--	--	--
Existing load- Spl RCPT...	30 A	2	PL-1C:29			1.0 1.0	PL-1C:30	2	30 A	Existing load- Spl RCPT(RE)
--	--	--	PL-1C:31	1.0 1.0			PL-1C:32	--	--	--
Ext Load - Concessions (RE)	20 A	1	PL-1C:33		1.0 1.0		PL-1C:34	1	20 A	Ext Load - Concessions (RE)
Ext Load - Concessions (RE)	20 A	1	PL-1C:35			1.0 1.0	PL-1C:36	1	20 A	Ext Load - Concessions (RE)
Ext Load - Concessions (RE)	20 A	1	PL-1C:37	1.0 1.0			PL-1C:38	1	20 A	Ext Load - Concessions (RE)
Ext Load - Concessions (RE)	20 A	1	PL-1C:39		1.0 1.0		PL-1C:40	1	20 A	Ext Load - Concessions (RE)
Ext Load - Concessions (RE)	20 A	1	PL-1C:41			1.0 1.0	PL-1C:42	1	20 A	Ext Load - Concessions (RE)
			TOTAL LOAD:	11 kVA	13 kVA	13 kVA				
			TOTAL AMPS:	92 A	108 A	108 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
RCPT	14280 VA	85.01%	12140 VA		
				CONNECTED LOAD:	36280 VA
				ESTIMATED DEMAND:	34140 VA
				CONNECTED CURRENT:	101 A
				EST. DEMAND CURRENT:	95 A

NOTES: New panel. (RE -Recircuit existing load from new circuit breaker from this panel)

PANELBOARD: LP3-2A

LOCATION: CORRIDOR 2-309
MOUNTING: RECESSED NEMA1
MAIN DEVICE: 150 A MCB
BUS AMPS: 225 AMPS
VOLTAGE: 120/208 Wye V. 3 ø 4 W.
A.I.C. RATING: 10,000 AMPS SYMMETRICAL
SPECIAL: EXISTING PANEL

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
EXISTING LOAD	20 A	1	LP3-2A:1	0.6 0.7			LP3-2A:2	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:3		0.6 0.7		LP3-2A:4	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:5			0.6 0.7	LP3-2A:6	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:7	0.6 0.7			LP3-2A:8	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:9		0.6 0.7		LP3-2A:10	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:11			0.6 0.7	LP3-2A:12	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:13	0.6 0.7			LP3-2A:14	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:15		0.6 0.7		LP3-2A:16	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:17			0.6 0.7	LP3-2A:18	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:19	0.6 0.7			LP3-2A:20	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:21		0.6 0.7		LP3-2A:22	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:23			0.6 0.7	LP3-2A:24	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:25	0.6 0.7			LP3-2A:26	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:27		0.6 0.7		LP3-2A:28	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:29			0.6 0.7	LP3-2A:30	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:31	0.6 0.7			LP3-2A:32	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:33		0.6 0.7		LP3-2A:34	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:35			0.6 0.7	LP3-2A:36	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:37	0.6 0.7			LP3-2A:38	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:39		0.6 0.7		LP3-2A:40	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-2A:41			0.6 0.7	LP3-2A:42	1	20 A	EXISTING LOAD
			TOTAL LOAD:	9 kVA	9 kVA	9 kVA				
			TOTAL AMPS:	76 A	76 A	76 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
				CONNECTED LOAD:	27300 VA
				ESTIMATED DEMAND:	27300 VA
				CONNECTED CURRENT:	76 A
				EST. DEMAND CURRENT:	76 A

NOTES:

PANELBOARD: LP3-3A

LOCATION: CORRIDOR 3-309
MOUNTING: RECESSED NEMA1
MAIN DEVICE: 225 A MLO
BUS AMPS: 225 AMPS
VOLTAGE: 120/208 Wye V. 3 ø 4 W.
A.I.C. RATING: 10,000 AMPS SYMMETRICAL
SPECIAL: EXISTING PANEL

LOAD DESCRIPTION	BKR	P	CKT	A	B	C	CKT	P	BKR	LOAD DESCRIPTION
EXISTING LOAD	20 A	1	LP3-3A:1	0.6 0.8			LP3-3A:2	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:3		0.6 0.8		LP3-3A:4	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:5			0.6 0.8	LP3-3A:6	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:7	0.6 0.8			LP3-3A:8	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:9		0.6 0.8		LP3-3A:10	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:11			0.6 0.8	LP3-3A:12	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:13	0.6 0.8			LP3-3A:14	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:15		0.6 0.8		LP3-3A:16	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:17			0.6 0.8	LP3-3A:18	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:19	0.6 0.8			LP3-3A:20	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:21		0.6 0.8		LP3-3A:22	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:23			0.6 0.8	LP3-3A:24	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:25	0.6 0.8			LP3-3A:26	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:27		0.6 0.8		LP3-3A:28	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:29			0.6 0.8	LP3-3A:30	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:31	0.6 0.8			LP3-3A:32	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:33		0.6 0.8		LP3-3A:34	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:35			0.6 0.8	LP3-3A:36	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:37	0.6 0.8			LP3-3A:38	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:39		0.6 0.8		LP3-3A:40	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP3-3A:41			0.6 0.8	LP3-3A:42	1	20 A	EXISTING LOAD
			TOTAL LOAD:	10 kVA	10 kVA	10 kVA				
			TOTAL AMPS:	82 A	82 A	82 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
				CONNECTED LOAD:	29400 VA
				ESTIMATED DEMAND:	29400 VA
				CONNECTED CURRENT:	82 A
				EST. DEMAND CURRENT:	82 A

NOTES:

DISTRIBUTION PANEL: MDP-M

LOCATION: MECH 2-500
MAIN DEVICE:
BUS AMPS: 2000 AMPS
VOLTAGE: 480/277 Wye V. 3 ø 4 W.
A.I.C.... 65000 KAIC
SPECIAL: EXISTING PANEL

SECTION No. 1

CKT	...	POLES	RATING	KVA	DESCRIPTION/NAMEPLATE	NOTES
MDP-M:1	--	3	25 A	10.4 kVA	DUPLICATION RTU	
MDP-M:2	--	3	225 A	79.8 kVA	MDP-2	
MDP-M:3	--	3	225 A	112.5 kVA	MDP-M2	
MDP-M:4	--	3	500 A	319.4 kVA	PMA (N)	
MDP-M:5	--	3	500 A	295.0 kVA	MDP-N	
MDP-M:6	--	3	400 A	255.0 kVA	PMB (NE)	
MDP-M:7	--	3	225 A	150.0 kVA	MDP-W	
MDP-M:8	--	3	50 A	11.1 kVA	LPM1-1A1	
MDP-M:9	...	3	225 A	53.5 kVA	PM1-C (N)	
MDP-M:10						
MDP-M:11						
MDP-M:12						
MDP-M:13						
MDP-M:14						
MDP-M:15						
MDP-M:16						
MDP-M:17						
MDP-M:18						
MDP-M:19						
MDP-M:20						
MDP-M:21						
MDP-M:22						
MDP-M:23						
MDP-M:24						
MDP-M:25						
MDP-M:26						

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	580626 VA	100.00%	580626 VA		
Lighting	4296 VA	100.00%	4296 VA		
Other	0 VA	0.00%	0 VA		
RCPT	18240 VA	77.41%	14120 VA		
SPEC	11847 VA	100.00%	11847 VA	**CONN. LOAD:**	1286716 VA
KTCH	5460 VA	86.87%	4743 VA	**EST. DEMAND LOAD:**	1281879 VA
				CONN. CURRENT:	1548 A
				EST. DEMAND...	1542 A

NOTES: EXISTING PANEL. (N) PROVIDE NEW CIRCUIT BREAKER FOR NEW LOADS. PROVIDE ENGRAVED...
(NE) NEW CIRCUIT ON EXISTING CIRCUIT BREAKER.

PANELBOARD: PMA-C

LOCATION:
MOUNTING: SURFACE NEMA 1
MAIN DEVICE: 500 A MAIN CB
BUS AMPS: 600 AMPS
VOLTAGE: 480/277 Wye V. 3 ø 4 W.
A.I.C. RATING: 14,000 AMPS SYMMETRICAL
SPECIAL: NEW PANEL

LOAD DESCRIPTION	BKR	P	CKT	A	B	C	CKT	P	BKR	LOAD DESCRIPTION
RTU-3A	175 A	3	PMA-C:1	41.6 41.6			PMA-C:2	3	175 A	RTU-3B
--	--	--	PMA-C:3		41.6 41.6		PMA-C:4	--	--	--
--	--	--	PMA-C:5			41.6 41.6	PMA-C:6	--	--	--
RTU-4	50 A	3	PMA-C:7	11.6 11.7			PMA-C:8	3	50 A	RTU-5
--	--	--	PMA-C:9		11.6 11.7		PMA-C:10	--	--	--
--	--	--	PMA-C:11			11.6 11.7	PMA-C:12	--	--	--
Space	--	--	PMA-C:13	0.0 0.0			PMA-C:14	--	--	Space
Space	--	--	PMA-C:15		0.0 0.0		PMA-C:16	--	--	Space
Space	--	--	PMA-C:17			0.0 0.0	PMA-C:18	--	--	Space
Space	--	--	PMA-C:19	0.0 0.0			PMA-C:20	--	--	Space
Space	--	--	PMA-C:21		0.0 0.0		PMA-C:22	--	--	Space
Space	--	--	PMA-C:23			0.0 0.0	PMA-C:24	--	--	Space
Space	--	--	PMA-C:25	0.0 0.0			PMA-C:26	--	--	Space
Space	--	--	PMA-C:27		0.0 0.0		PMA-C:28	--	--	Space
Space	--	--	PMA-C:29			0.0 0.0	PMA-C:30	--	--	Space
			TOTAL LOAD:	106 kVA	106 kVA	106 kVA				
			TOTAL AMPS:	384 A	384 A	384 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	319409 VA	100.00%	319409 VA		
				CONNECTED LOAD:	319409 VA
				ESTIMATED DEMAND:	319409 VA
				CONNECTED CURRENT:	384 A
				EST. DEMAND CURRENT:	384 A

NOTES:

PANELBOARD: PMB-C

LOCATION: ELEC 2-617
MOUNTING: SURFACE NEMA 1
MAIN DEVICE: 400 A MAIN CB
BUS AMPS: 400 AMPS
VOLTAGE: 480/277 Wye V. 3 ø 4 W.
A.I.C. RATING: 14,000 AMPS SYMMETRICAL
SPECIAL: NEW PANEL

LOAD DESCRIPTION	BKR	P	CKT	A	B	C	CKT	P	BKR	LOAD DESCRIPTION
AHU-1	110 A	3	PMB-C:1	23.3 2.9			PMB-C:2	3	20 A	AHU-4
--	--	--	PMB-C:3		23.3 2.9		PMB-C:4	--	--	--
-- (36)	--	--	PMB-C:5			23.3 2.9	PMB-C:6	--	--	-- (36)
AHU-3	20 A	3	PMB-C:7	2.6 3.8			PMB-C:8	3	20 A	AHU-2 SUPPLY
--	--	--	PMB-C:9		2.6 3.8		PMB-C:10	--	--	--
--	--	--	PMB-C:11			2.6 3.8	PMB-C:12	--	--	--
AHU-5	35 A	3	PMB-C:13	8.6 5.3			PMB-C:14	3	25 A	AHU-6
--	--	--	PMB-C:15		8.6 5.3		PMB-C:16	--	--	--
--	--	--	PMB-C:17			8.6 5.3	PMB-C:18	--	--	--
AHU-7	20 A	3	PMB-C:19	1.9 29.7			PMB-C:20	3	125 A	RTU-2
--	--	--	PMB-C:21		1.9 29.7		PMB-C:22	--	--	--
--	--	--	PMB-C:23			1.9 29.7	PMB-C:24	--	--	--
EDH-4	20 A	3	PMB-C:25	3.3 4.0			PMB-C:26	1	20 A	EDH-2
--	--	--	PMB-C:27		3.3 2.0		PMB-C:28	1	20 A	EDH-3
--	--	--	PMB-C:29			3.3 1.7	PMB-C:30	3	20 A	AHU-2 RETURN
Space	--	--	PMB-C:31	0.0 1.7			PMB-C:32	--	--	--
Space	--	--	PMB-C:33		0.0 1.7		PMB-C:34	--	--	-- (36)
Space	--	--	PMB-C:35			0.0 0.0	PMB-C:36	--	--	Space
Space	--	--	PMB-C:37	0.0 0.0			PMB-C:38	--	--	Space
Space	--	--	PMB-C:39		0.0 0.0		PMB-C:40	--	--	Space
Space	--	--	PMB-C:41			0.0 0.0	PMB-C:42	--	--	Space
			TOTAL LOAD:	87 kVA	85 kVA	83 kVA				
			TOTAL AMPS:	315 A	308 A	300 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	254983 VA	100.00%	254983 VA		
				CONNECTED LOAD:	254983 VA
				ESTIMATED DEMAND:	254983 VA
				CONNECTED CURRENT:	307 A
				EST. DEMAND CURRENT:	307 A

NOTES:

PANELBOARD: PMC-C

LOCATION: ELEC 1529
MOUNTING: SURFACE NEMA 1
MAIN DEVICE: 225 A MAIN CB
BUS AMPS: 225 AMPS
VOLTAGE: 480/277 Wye V. 3 ø 4 W.
A.I.C. RATING: 14,000 AMPS SYMMETRICAL
SPECIAL: NEW PANEL

LOAD DESCRIPTION	BKR	P	CKT	A	B	C	CKT	P	BKR	LOAD DESCRIPTION
T	100 A	3	PMC-C:1	17.5 2.1			PMC-C:2	3	20 A	EDH-1
--	--	--	PMC-C:3		15.0 2.1		PMC-C:4	--	--	--
--	--	--	PMC-C:5			14.8 2.1	PMC-C:6	--	--	--
Spare	20 A	1	PMC-C:7	0.0			PMC-C:8			
Spare	20 A	1	PMC-C:9		0.0		PMC-C:10			
Spare	20 A	1	PMC-C:11			0.0 0.0	PMC-C:12	1	20 A	Spare
Spare	20 A	1	PMC-C:13	0.0 0.0			PMC-C:14	1	20 A	Spare
Spare	20 A	1	PMC-C:15		0.0 0.0		PMC-C:16	1	20 A	Spare
Spare	20 A	1	PMC-C:17			0.0 0.0	PMC-C:18	1	20 A	Spare
Spare	20 A	1	PMC-C:19	0.0 0.0			PMC-C:20	1	20 A	Spare
Spare	20 A	1	PMC-C:21		0.0 0.0		PMC-C:22	1	20 A	Spare
Spare	20 A	1	PMC-C:23			0.0 0.0	PMC-C:24	1	20 A	Spare
Spare	20 A	1	PMC-C:25	0.0 0.0			PMC-C:26	1	20 A	Spare
Space	--	--	PMC-C:27		0.0 0.0		PMC-C:28	--	--	Space
Space	--	--	PMC-C:29			0.0 0.0	PMC-C:30	--	--	Space
Space	--	--	PMC-C:31	0.0 0.0			PMC-C:32	--	--	Space
Space	--	--	PMC-C:33		0.0 0.0		PMC-C:34	--	--	Space
Space	--	--	PMC-C:35			0.0 0.0	PMC-C:36	--	--	Space
Space	--	--	PMC-C:37	0.0 0.0			PMC-C:38	--	--	Space
Space	--	--	PMC-C:39		0.0 0.0		PMC-C:40	--	--	Space
Space	--	--	PMC-C:41			0.0 0.0	PMC-C:42	--	--	Space
			TOTAL LOAD:	20 kVA	17 kVA	17 kVA				
			TOTAL AMPS:	71 A	62 A	61 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	6235 VA	100.00%	6235 VA		
Lighting	4296 VA	100.00%	4296 VA		
Other	0 VA	0.00%	0 VA	**CONNECTED LOAD:**	53534 VA
RCPT	18240 VA	77.41%	14120 VA	**ESTIMATED DEMAND:**	48697 VA
SPEC	11847 VA	100.00%	11847 VA	**CONNECTED CURRENT:**	64 A
KTCH	5460 VA	86.87%	4743 VA	**EST. DEMAND CURRENT:**	59 A

NOTES:

PANELBOARD: PMD-C

LOCATION: ELEC 1529
MOUNTING: SURFACE NEMA 1
MAIN DEVICE: 250 A MAIN CB
BUS AMPS: 400 AMPS
VOLTAGE: 120/208 Wye V. 3 ø 4 W.
A.I.C. RATING: 10,000 AMPS SYMMETRICAL
SPECIAL: NEW PANEL

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
PME-C	150 A	3	PMD-C:1	8.3 9.2			PMD-C:2	3	150 A	PMF-C
--	--	--	PMD-C:3		4.9 10.2		PMD-C:4	--	--	--
--	--	--	PMD-C:5			6.6 8.2	PMD-C:6	--	--	--
Spare	20 A	1	PMD-C:7	0.0			PMD-C:8			
Spare	20 A	1	PMD-C:9		0.0		PMD-C:10			
Spare	20 A	1	PMD-C:11			0.0 0.0	PMD-C:12	1	20 A	Spare
Spare	20 A	1	PMD-C:13	0.0 0.0			PMD-C:14	1	20 A	Spare
Spare	20 A	1	PMD-C:15		0.0 0.0		PMD-C:16	1	20 A	Spare
Spare	20 A	1	PMD-C:17			0.0 0.0	PMD-C:18	1	20 A	Spare
Spare	20 A	1	PMD-C:19	0.0 0.0			PMD-C:20	1	20 A	Spare
Spare	20 A	1	PMD-C:21		0.0 0.0		PMD-C:22	1	20 A	Spare
Spare	20 A	1	PMD-C:23			0.0 0.0	PMD-C:24	1	20 A	Spare
Spare	20 A	1	PMD-C:25	0.0 0.0			PMD-C:26	1	20 A	Spare
Spare	20 A	1	PMD-C:27		0.0 0.0		PMD-C:28	1	20 A	Spare
Spare	20 A	1	PMD-C:29			0.0 0.0	PMD-C:30	1	20 A	Spare
			TOTAL LOAD:	17 kVA	15 kVA	15 kVA				
			TOTAL AMPS:	146 A	126 A	123 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
Lighting	4296 VA	100.00%	4296 VA		
Other	0 VA	0.00%	0 VA	**CONNECTED LOAD:**	47299 VA
RCPT	18240 VA	77.41%	14120 VA	**ESTIMATED DEMAND:**	42462 VA

PANELBOARD: MDP-B

LOCATION: ELEC 1-117 — **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 — **A.I.C. RATING:** 65,000 AMPS SYMMETRICAL
MAIN DEVICE: 400 A MAIN CB — **SPECIAL:** EXISTING PANEL
BUS AMPS: 400 AMPS

LOAD DESCRIPTION	BKR	P	CKT	A		B		C		CKT	P	BKR	LOAD DESCRIPTION
(E) TRANSFER SWITCH	30 A	3	MDP-B:1	0.5	0.0					MDP-B:2	--	--	Space
--	--	--	MDP-B:3			0.5	0.0			MDP-B:4	--	--	Space
--	--	--	MDP-B:5					0.5	0.0	MDP-B:6	--	--	Space
Space	--	--	MDP-B:7	0.0	0.0					MDP-B:8	2	90 A	(E) KILN
Space	--	--	MDP-B:9			0.0	0.0			MDP-B:10	--	--	--
Space	--	--	MDP-B:11					0.0	0.2	MDP-B:12	1	20 A	(E) EXISTING LOAD
(E) PP2-3-B	175 A	3	MDP-B:13	4.5	0.6					MDP-B:14	3	20 A	(E) EXISTING LOAD
--	--	--	MDP-B:15			4.5	0.6			MDP-B:16	--	--	--
--	--	--	MDP-B:17					4.5	0.6	MDP-B:18	--	--	--
PB-1C, LP2-2A, LP2-3A	400 A	3	MDP-B:19	18.0	0.0					MDP-B:20	--	--	Space
--	--	--	MDP-B:21			18.9	0.0			MDP-B:22	--	--	Space
--	--	--	MDP-B:23					18.7	0.0	MDP-B:24	--	--	Space
(E)PB-1A	225 A	3	MDP-B:25	12.9						MDP-B:26			
--	--	--	MDP-B:27			11.9				MDP-B:28			
--	--	--	MDP-B:29					10.6		MDP-B:30			
			MDP-B:31							MDP-B:32			
			MDP-B:33							MDP-B:34			
			MDP-B:35							MDP-B:36			
			MDP-B:37							MDP-B:38			
			MDP-B:39							MDP-B:40			
			MDP-B:41							MDP-B:42			
			MDP-B:43							MDP-B:44			
			MDP-B:45							MDP-B:46			
			MDP-B:47							MDP-B:48			
			TOTAL LOAD:	37 kVA		36 kVA		35 kVA					
			TOTAL AMPS:	306 A		305 A		292 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS
HVAC	3102 VA	100.00%	3102 VA	
Lighting	6813 VA	100.00%	6813 VA	**CONNECTED LOAD:** 108021 VA
Other	720 VA	100.00%	720 VA	**ESTIMATED DEMAND:** 96899 VA
RCPT	32244 VA	65.51%	21122 VA	**CONNECTED CURRENT:** 300 A
				EST. DEMAND CURRENT: 269 A

NOTES: EXISTING PANEL. PROVIDE NEW TYPED PANELBOARD DIRECTORY. (E) EXISTING LOAD TO REMAIN . (N) PROVIDE NEW CIRCUIT...

PANELBOARD: PB-1C

LOCATION: ELEC. ROOM 1-105 — **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 — **A.I.C. RATING:** 22,000 AMPS SYMMETRICAL
MAIN DEVICE: 400 A MAIN CB — **SPECIAL:** NEW PANEL
BUS AMPS: 400 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
RCPT-101 community rm B	20 A	1	PB-1C:1	1.3	6.5					PB-1C:2	3	225 A	LP2-2A (EXISTING PANEL)
RCPT-100 cafeteria	20 A	1	PB-1C:3			1.6	6.5			PB-1C:4	--	--	--
RCPT-100 cafeteria	20 A	1	PB-1C:5					1.4	6.5	PB-1C:6	--	--	--
RCPT-100 cafeteria	20 A	1	PB-1C:7	1.4	6.5					PB-1C:8	3	150 A	LP2-3A (EXISTING PANEL)
RCPT-100 cafeteria	20 A	1	PB-1C:9			1.4	6.5			PB-1C:10	--	--	--
RCPT-100 cafeteria	20 A	1	PB-1C:11					1.6	6.5	PB-1C:12	--	--	--
TV Screen cafateria	20 A	1	PB-1C:13	0.7	0.2					PB-1C:14	1	20 A	CORRIDOR 003
LIGHTS 003 CORRIDOR	20 A	1	PB-1C:15			1.2	0.4			PB-1C:16	1	20 A	Projector -Community -B
RCPT	20 A	1	PB-1C:17					1.1	0.2	PB-1C:18	1	20 A	Short throw projector
Spare	20 A	1	PB-1C:19	0.0	0.0					PB-1C:20	1	20 A	Spare
Spare	20 A	1	PB-1C:21			0.0	0.0			PB-1C:22	1	20 A	Spare
Spare	20 A	1	PB-1C:23					0.0	0.0	PB-1C:24	1	20 A	Spare
Spare	20 A	1	PB-1C:25	0.0	0.0					PB-1C:26	1	20 A	Spare
Spare	20 A	1	PB-1C:27			0.0	0.0			PB-1C:28	1	20 A	Spare
Existing relocated ckt.	20 A	1	PB-1C:29					0.7	0.7	PB-1C:30	1	20 A	Existing relocated ckt.
Existing relocated ckt.	20 A	1	PB-1C:31	0.7	0.7					PB-1C:32	1	20 A	Existing relocated ckt.
Existing relocated ckt.	20 A	1	PB-1C:33			0.7	0.7			PB-1C:34	1	20 A	Existing relocated ckt.
Spare	20 A	1	PB-1C:35					0.0	0.0	PB-1C:36	1	20 A	Spare
Spare	20 A	1	PB-1C:37	0.0	0.0					PB-1C:38	1	20 A	Spare
Spare	20 A	1	PB-1C:39			0.0	0.0			PB-1C:40	1	20 A	Spare
Spare	20 A	1	PB-1C:41					0.0	0.0	PB-1C:42	1	20 A	Spare
			TOTAL LOAD:	18 kVA		19 kVA		19 kVA					
			TOTAL AMPS:	150 A		159 A		157 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS
Lighting	1160 VA	100.00%	1160 VA	
Other	720 VA	100.00%	720 VA	**CONNECTED LOAD:** 55660 VA
RCPT	10422 VA	97.97%	10211 VA	**ESTIMATED DEMAND:** 55449 VA
				CONNECTED CURRENT: 154 A
				EST. DEMAND CURRENT: 154 A

NOTES:

DISTRIBUTION PANEL: MDP-AD1

LOCATION:
MAIN DEVICE: 1000 A MCB — **VOLTAGE:** 480/277 Wye V. 3 ø 4 W.
BUS AMPS: 1200 AMPS — **A.I.C...** 65000 AMPS SYMMETRICAL
SPECIAL: NEW PANEL

SECTION No. 1

CKT	FRAME	POLES	RATING	KVA	DESCRIPTION/NAMEPLATE	NOTES
MDP-AD1:1	400 A	3	400 A	230.5 kVA	T-AD1 (TRANSFORMER)	
MDP-AD1:2	250 A	3	225 A	143.2 kVA	T-AD2 (TRANSFORMER)	
MDP-AD1:3	250 A	3	225 A	68.8 kVA	PAD-5	
MDP-AD1:4	150 A	3	125 A	62.3 kVA	T-AV (AV TRANSFORMER)	
MDP-AD1:5	100 A	3	60 A	11.3 kVA	PAD-7	
MDP-AD1:6	200 A	3	175 A	70.8 kVA	T-D1(AUDI DIMMER RACKS)	
MDP-AD1:7	150 A	3	125 A	27.9 kVA	T-D2 (THEATRE DIMMER RACKS)	
MDP-AD1:8						
MDP-AD1:9	--	3	60 A	0.1 kVA	SURGE PROTECTION	
MDP-AD1:10						
MDP-AD1:11						
MDP-AD1:12						
MDP-AD1:13						
MDP-AD1:14						
MDP-AD1:15						
MDP-AD1:16						
MDP-AD1:17						
MDP-AD1:18						
MDP-AD1:19						
MDP-AD1:20						
MDP-AD1:21						
MDP-AD1:22						
MDP-AD1:23						
MDP-AD1:24						
MDP-AD1:25						
MDP-AD1:26						

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS
HVAC	60019 VA	100.00%	60019 VA	
Lighting	8680 VA	100.00%	8680 VA	
Motor	17717 VA	105.63%	18715 VA	
Other	17093 VA	100.00%	17093 VA	
Power	37261 VA	100.00%	37261 VA	**CONN. LOAD:** 614898 VA
RCPT	70980 VA	57.04%	40490 VA	**EST. DEMAND LOAD:** 585433 VA
LITES	113 VA	125.00%	141 VA	**CONN. CURRENT:** 740 A
SPEC	3600 VA	100.00%	3600 VA	**EST. DEMAND...** 704 A

NOTES:

PANELBOARD: PAD-5

LOCATION:
MOUNTING: SURFACE NEMA 1 — **VOLTAGE:** 480/277 Wye V. 3 ø 4 W.
MAIN DEVICE: 225 A MCB — **A.I.C. RATING:** 14,000 AMPS SYMMETRICAL
BUS AMPS: 225 AMPS — **SPECIAL:** NEW PANEL

LOAD DESCRIPTION	BKR	P	CKT	A		B		C		CKT	P	BKR	LOAD DESCRIPTION
STAGE ELECTRIC HOISTS	20 A	3	PAD-5:1	0.9	0.9					PAD-5:2	3	20 A	STAGE ELECTRIC HOISTS
--	--	--	PAD-5:3			0.9	0.9			PAD-5:4	--	--	--
--	--	--	PAD-5:5					0.9	0.9	PAD-5:6	--	--	--
STAGE ELECTRIC HOISTS	20 A	3	PAD-5:7	0.9	0.9					PAD-5:8	3	20 A	STAGE ELECTRIC HOISTS
--	--	--	PAD-5:9			0.9	0.9			PAD-5:10	--	--	--
--	--	--	PAD-5:11					0.9	0.9	PAD-5:12	--	--	--
ORCH. SHL CLNG HOIST	20 A	3	PAD-5:13	1.3	1.3					PAD-5:14	3	20 A	ORCH. SHL CLNG HOIST
--	--	--	PAD-5:15			1.3	1.3			PAD-5:16	--	--	--
--	--	--	PAD-5:17					1.3	1.3	PAD-5:18	--	--	--
ORCH. SHL CLNG HOIST	20 A	3	PAD-5:19	1.3	1.3					PAD-5:20	3	20 A	FIRE SAFETY CURTAIN
--	--	--	PAD-5:21			1.3	1.3			PAD-5:22	--	--	--
--	--	--	PAD-5:23					1.3	1.3	PAD-5:24	--	--	--
ELEVATOR POWER (ST)	20 A	3	PAD-5:25	4.4	3.9					PAD-5:26	3	30 A	AC-1 COMPRESSOR
--	--	--	PAD-5:27			4.4	3.9			PAD-5:28	--	--	--
--	--	--	PAD-5:29					4.4	3.9	PAD-5:30	--	--	--
DC-1 DUST COLLECTOR	20 A	3	PAD-5:31	1.1	1.9					PAD-5:32	1	20 A	FPB-R4-4/ FAN POWERED...
--	--	--	PAD-5:33			1.1	1.2			PAD-5:34	1	20 A	FPB-1/RT5 FAN POWER BOX
--	--	--	PAD-5:35					1.1	1.2	PAD-5:36	1	20 A	FPB-2/RT4 FAN POWER BOX
ACOUSTIC CURTAIN...	20 A	3	PAD-5:37	0.6	3.0					PAD-5:38	3	100 A	PAD-5B
--	--	--	PAD-5:39			0.6	3.0			PAD-5:40	--	--	--
--	--	--	PAD-5:41					0.6	1.2	PAD-5:42	--	--	--
			TOTAL LOAD:	24 kVA		23 kVA		21 kVA					
			TOTAL AMPS:	88 A		85 A		78 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS
HVAC	21795 VA	100.00%	21795 VA	
Motor	15297 VA	106.52%	16295 VA	**CONNECTED LOAD:** 68816 VA
Other	1213 VA	100.00%	1213 VA	**ESTIMATED DEMAND:** 69814 VA
Power	17209 VA	100.00%	17209 VA	**CONNECTED CURRENT:** 83 A
				EST. DEMAND CURRENT: 84 A

NOTES: (ST- SHUNT TRIP DISCONNECT)

PANELBOARD: PAD-7

LOCATION:
MOUNTING: SURFACE NEMA 1 — **VOLTAGE:** 480/277 Wye V. 3 ø 4 W.
MAIN DEVICE: 60 A MAIN CB — **A.I.C. RATING:** 14,000 AMPS SYMMETRICAL
BUS AMPS: 100 AMPS — **SPECIAL:** NEW PANEL

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
Spare	20 A	1	PAD-7:1	0.0	1.9					PAD-7:2	1	20 A	FPB-A/62
Spare	20 A	1	PAD-7:3			0.0	1.8			PAD-7:4	1	20 A	FPB-A/61
Spare	20 A	1	PAD-7:5					0.0	0.0	PAD-7:6	1	20 A	Spare
Spare	20 A	1	PAD-7:7	0.0	0.0					PAD-7:8	1	20 A	Spare
Spare	20 A	1	PAD-7:9			0.0	0.0			PAD-7:10	1	20 A	Spare
Spare	20 A	1	PAD-7:11					0.0	0.0	PAD-7:12	1	20 A	Spare
Spare	20 A	1	PAD-7:13	0.0	0.0					PAD-7:14	1	20 A	Spare
Spare	20 A	1	PAD-7:15			0.0	0.0			PAD-7:16	1	20 A	Spare
Spare	20 A	1	PAD-7:17					0.0	0.0	PAD-7:18	1	20 A	Spare
Spare	20 A	1	PAD-7:19	0.0	0.0					PAD-7:20	1	20 A	Spare
Spare	20 A	1	PAD-7:21			0.0	0.0			PAD-7:22	1	20 A	Spare
Spare	20 A	1	PAD-7:23					0.0	0.0	PAD-7:24	1	20 A	Spare
Spare	20 A	1	PAD-7:25	0.0	2.2					PAD-7:26	3	45 A	T-PAD7B
Spare	20 A	1	PAD-7:27			0.0	3.2			PAD-7:28	--	--	--
Spare	20 A	1	PAD-7:29					0.0	2.2	PAD-7:30	--	--	--
			TOTAL LOAD:	4 kVA		5 kVA		2 kVA					
			TOTAL AMPS:	16 A		19 A		8 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS
HVAC	3936 VA	100.00%	3936 VA	
Lighting	2387 VA	100.00%	2387 VA	**CONNECTED LOAD:** 11274 VA
Other	1080 VA	100.00%	1080 VA	**ESTIMATED DEMAND:** 11274 VA
RCPT	2700 VA	100.00%	2700 VA	**CONNECTED CURRENT:** 14 A
				EST. DEMAND CURRENT: 14 A

NOTES:

PANELBOARD: PAD-7B

LOCATION: ELEC 1-342 — **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 — **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 100 A MAIN CB — **SPECIAL:** NEW PANEL
BUS AMPS: 100 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
LIGHTING-007 PASSAGE	20 A	1	PAD-7B:1	0.6	1.0					PAD-7B:2	1	20 A	COMMONS PASSAGE LIGHT
LIGHTS-000,340,338,339	20 A	1	PAD-7B:3			1.1	0.5			PAD-7B:4	1	20 A	LIGHTS-PASSAGE 007
HVAC FLOOR UNIT	20 A	1	PAD-7B:5					0.5	0.5	PAD-7B:6	1	20 A	HVAC FLOOR UNIT
HVAC FLOOR UNIT	20 A	1	PAD-7B:7	0.2	0.4					PAD-7B:8	1	20 A	LIGHTS- BUILDING...
RCPT-OFFICE 335	20 A	1	PAD-7B:9			1.4	0.2			PAD-7B:10	1	20 A	CCP-14 PUMP
RCPT-OFFICE 336,337	20 A	1	PAD-7B:11					1.3	0.0	PAD-7B:12	1	20 A	Spare
Spare	20 A	1	PAD-7B:13	0.0	0.0					PAD-7B:14	1	20 A	Spare
Spare	20 A	1	PAD-7B:15			0.0	0.0			PAD-7B:16	1	20 A	Spare
Spare	20 A	1	PAD-7B:17					0.0	0.0	PAD-7B:18	1	20 A	Spare
Spare	20 A	1	PAD-7B:19	0.0	0.0					PAD-7B:20	1	20 A	Spare
Spare	20 A	1	PAD-7B:21			0.0	0.0			PAD-7B:22	1	20 A	Spare
Spare	20 A	1	PAD-7B:23					0.0	0.0	PAD-7B:24	1	20 A	Spare
Spare	20 A	1	PAD-7B:25	0.0	0.0					PAD-7B:26	1	20 A	Spare
Spare	20 A	1	PAD-7B:27			0.0	0.0			PAD-7B:28	1	20 A	Spare
Spare	20 A	1	PAD-7B:29					0.0	0.0	PAD-7B:30	1	20 A	Spare
Spare	20 A	1	PAD-7B:31	0.0	0.0					PAD-7B:32	1	20 A	Spare
Spare	20 A	1	PAD-7B:33			0.0	0.0			PAD-7B:34	1	20 A	Spare
Spare	20 A	1	PAD-7B:35					0.0	0.0	PAD-7B:36	1	20 A	Spare
Spare	20 A	1	PAD-7B:37	0.0	0.0					PAD-7B:38	1	20 A	Spare
Spare	20 A	1	PAD-7B:39			0.0	0.0			PAD-7B:40	1	20 A	Spare
Spare	20 A	1	PAD-7B:41					0.0	0.0	PAD-7B:42	1	20 A	Spare
			TOTAL LOAD:	2 kVA		3 kVA		2 kVA					
			TOTAL AMPS:	19 A		27 A		19 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS
HVAC	300 VA	100.00%	300 VA	
Lighting	2387 VA	100.00%	2387 VA	**CONNECTED LOAD:** 7638 VA
Other	1080 VA	100.00%	1080 VA	**ESTIMATED DEMAND:** 7638 VA
RCPT	2700 VA	100.00%	2700 VA	**CONNECTED CURRENT:** 21 A
				EST. DEMAND CURRENT: 21 A

NOTES:

PANELBOARD: P-AV

LOCATION:
MOUNTING: SURFACE NEMA 1 — **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MAIN DEVICE: 250 A MAIN CB — **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
BUS AMPS: 400 AMPS — **SPECIAL:** PANEL PROVIDED BY AV INTEGRATOR

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
(IG) AV RCPT ORCH. PIT	20 A	1	P-AV:1	0.7	0.4					P-AV:2	1	20 A	(IG) AV RCPT STAGE
(IG) AV RCPT STAGE	20 A	1	P-AV:3			0.4	1.2			P-AV:4	1	20 A	(IG) STAGE FRONT RACK
(IG) AV RCPT STAGE	20 A	1	P-AV:5					0.4	0.7	P-AV:6	1	20 A	(IG) AV RCPT AUDI. FLOOR
(IG) AV MAIN RACK	30 A	1	P-AV:7	1.2	1.2					P-AV:8	1	20 A	(IG) AV MAIN RACK
(IG) AV MAIN RACK	30 A	1	P-AV:9			1.2	1.2			P-AV:10	1	20 A	(IG) AV MAIN RACK
(IG) AV MAIN RACK	30 A	1	P-AV:11					1.2	1.2	P-AV:12	1	20 A	(IG) AV MAIN RACK
(IG) AV RCPT AUDITORIUM	20 A	1	P-AV:13	0.7	0.4					P-AV:14	1	20 A	(IG) AV RCPT SCREEN
(IG) FRONT RACK MIX	20 A	1	P-AV:15			1.2	0.2			P-AV:16	1	20 A	(IG) AV RCPT SCREEN
(IG) AV RCPT SCREEN	20 A	1	P-AV:17					0.7	0.6	P-AV:18	1	20 A	(IG) PROJECTOR & CAM. ST
(IG) RCPT STUDIO THR.	20 A	1	P-AV:19	1.1	1.2					P-AV:20	1	20 A	(IG) AV MAIN RACK
(IG) SCREEN -STUDIO...	20 A	1	P-AV:21			0.4	1.2			P-AV:22	1	20 A	(IG) AV MAIN RACK
(IG) AV MAIN RACK	20 A	1	P-AV:23					1.2	1.2	P-AV:24	1	20 A	(IG) AV MAIN RACK
(IG) STAGE FRONT RACK	20 A	1	P-AV:25	1.2	1.2					P-AV:26	1	20 A	(IG) AV FRONT RACK MIX
(IG) AV RCPT ORCH. PIT	20 A	1	P-AV:27			0.4	0.2			P-AV:28	1	20 A	(IG) AV RCPT SCREEN
(IG) AV RCPT STAGE	20 A	1	P-AV:29					0.7	0.2	P-AV:30	1	20 A	(IG) AV RCPT SCREEN
P-AV2	100 A	3	P-AV:31	5.0	1.2					P-AV:32	1	20 A	(IG) AV MAIN RACK
--	--	--	P-AV:33			3.1	1.2			P-AV:34	1	20 A	(IG) AV MAIN RACK
--	--	--	P-AV:35					3.0	1.2	P-AV:36	1	20 A	(IG) AV MAIN RACK
P-AV3	100 A	3	P-AV:37	3.3	4.8					P-AV:38	3	100 A	AV COMPANY SWITCH
--	--	--	P-AV:39			3.4	4.8			P-AV:40	--	--	--
--	--	--	P-AV:41					1.7	4.8	P-AV:42	--	--	--
			TOTAL LOAD:	24 kVA		20 kVA		19 kVA					
			TOTAL AMPS:	198 A		167 A		157 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS
Other	3600 VA	100.00%	3600 VA	
Power	16810 VA	100.00%	16810 VA	**CONNECTED LOAD:** 62290 VA
RCPT	22680 VA	72.05%	16340 VA	**ESTIMATED DEMAND:** 55950 VA
SPEC	2400 VA	100.00%	2400 VA	**CONNECTED CURRENT:** 173 A
				EST. DEMAND CURRENT: 155 A

NOTES: SCHEDULE SHOWN FOR CIRCUIT BREAKER INFORMATION. (IG)- PROVIDE ISOLATED GROUND

PANELBOARD: P-AV2

LOCATION:
MOUNTING: SURFACE NEMA 1 — **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MAIN DEVICE: 100 A MAIN CB — **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
BUS AMPS: 225 AMPS — **SPECIAL:** NEW PANEL - 200% RATED NEUTRAL AND ISOLATED GROUND BUS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
(IG) AV MAIN RACK	30 A	1	P-AV2:1	1.2	0.7					P-AV2:2	1	20 A	(IG) AV RCPT ST
(IG) AV RCPT ST	20 A	1	P-AV2:3			0.7	1.1			P-AV2:4	1	20 A	(IG) AV RCPT ST
(IG) RCPT GALLERY I/O	20 A	1	P-AV2:5					0.7	0.7	P-AV2:6	1	20 A	(IG) RCPT GALLERY I/O
(IG) AV RACK ST	20 A	1	P-AV2:7	1.2	1.2					P-AV2:8	1	20 A	(IG) AV RACK ST
(IG) RCPT-STAGE I/O	20 A	1	P-AV2:9			0.2	0.4			P-AV2:10	1	20 A	(IG) AV MAIN RACK
(IG) AV RACK	20 A	1	P-AV2:11					1.2	0.4	P-AV2:12	1	20 A	(IG) RCPT -CAT WALK
(IG) RCPT -CAT WALK	20 A	1	P-AV2:13	0.4	0.4					P-AV2:14	1	20 A	(IG) RCPT -CAT WALK
(IG) RCPT -CAT WALK	20 A	1	P-AV2:15			0.4	0.4			P-AV2:16	1	20 A	(IG) RCPT -CAT WALK
Spare	20 A	1	P-AV2:17					0.0	0.0	P-AV2:18	1	20 A	Spare
Spare	20 A	1	P-AV2:19	0.0	0.0					P-AV2:20	1	20 A	Spare
Spare	20 A	1	P-AV2:21			0.0	0.0			P-AV2:22	1	20 A	Spare
Spare	20 A	1	P-AV2:23					0.0	0.0	P-AV2:24	1	20 A	Spare
Spare	20 A	1	P-AV2:25	0.0	0.0					P-AV2:26	1	20 A	Spare
Spare	20 A	1	P-AV2:27			0.0	0.0			P-AV2:28	1	20 A	Spare
Spare	20 A	1	P-AV2:29					0.0	0.0	P-AV2:30	1	20 A	Spare
Spare	20 A	1	P-AV2:31	0.0	0.0					P-AV2:32	1	20 A	Spare
Spare	20 A	1	P-AV2:33			0.0	0.0			P-AV2:34	1	20 A	Spare
Spare	20 A	1	P-AV2:35					0.0	0.0	P-AV2:36	1	20 A	Spare
Spare	20 A	1	P-AV2:37	0.0	0.0					P-AV2:38	1	20 A	Spare
Spare	20 A	1	P-AV2:39			0.0	0.0			P-AV2:40	1	20 A	Spare
Spare	20 A	1	P-AV2:41					0.0	0.0	P-AV2:42	1	20 A	Spare
			TOTAL LOAD:	5 kVA		3 kVA		3 kVA					
			TOTAL AMPS:	42 A		26 A		25 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS
Other	1200 VA	100.00%	1200 VA	
RCPT	8700 VA	100.00%	8700 VA	**CONNECTED LOAD:** 11100 VA
				ESTIMATED DEMAND: 11100 VA
				CONNECTED CURRENT: 31 A
				EST. DEMAND CURRENT: 31 A

NOTES: (IG)= PROVIDE ISOLATED GROUND

PANELBOARD: P-AV3

LOCATION: CONTROL ROOM 2-612 — **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA1 — **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 100 A MAIN CB — **SPECIAL:** NEW PANEL - 200% RATED NEUTRAL WITH ISOLATED GROUND BUS
BUS AMPS: 225 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
(IG) PROJECTOR	20 A	1	P-AV3:1	1.0	0.6					P-AV3:2	1	20 A	(IG) RCPT CONTROL ROOM
(IG) RCPT CONTROL...	20 A	1	P-AV3:3			0.4	0.6			P-AV3:4	1	20 A	(IG) RCPT CONTROL ROOM
(IG) RCPT THEATRE AV	20 A	1	P-AV3:5					0.2	0.2	P-AV3:6	1	20 A	(IG) RCPT THEATRE AV
(IG) RCPT CONTROL...	20 A	1	P-AV3:7	0.4	1.2					P-AV3:8	1	20 A	(IG) AV RACK POWER
(IG) AV SPEC. RCPT	30 A	2	P-AV3:

PANELBOARD: PAD-4

LOCATION: **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 100 A MAIN CB **SPECIAL:** NEW PANEL PROVIDE 200% RATED NEUTRAL
BUS AMPS: 225 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
RCPT-STORAGE 605	20 A	1	PAD-4:1	1.6 0.4			PAD-4:2	1	20 A	RCPT- THEATRE CONTROL
DFSS-1	35 A	2	PAD-4:3		2.6 0.9		PAD-4:4	1	20 A	CCP-2 PUMP
--	--	--	PAD-4:5			2.6 0.9	PAD-4:6	1	20 A	CCP-3 PUMP
CCP-7 PUMP	20 A	1	PAD-4:7	0.9 0.9			PAD-4:8	1	20 A	CCP-4 PUMP
CCP-5 PUMP	20 A	1	PAD-4:9		0.9 1.2		PAD-4:10	1	20 A	EF-1 EXHAUST FAN
EF-2 EXHAUST FAN	20 A	1	PAD-4:11			0.7 1.2	PAD-4:12	1	20 A	EF-3 EXHAUST FAN
EF-4 EXHAUST FAN	20 A	1	PAD-4:13	1.2 0.2			PAD-4:14	1	20 A	ELEVATOR FAN
ELEVATOR CONV.	20 A	1	PAD-4:15		0.2 0.2		PAD-4:16	1	20 A	ELEVATOR SHAFT LIGHTS
LIGHTING -2ND MEZZ	20 A	1	PAD-4:17			0.6 0.3	PAD-4:18	1	20 A	CAT WALK 1 CONV. RCPT
CAT WALK 1 CONV. RCPT	20 A	1	PAD-4:19	0.3 0.3			PAD-4:20	1	20 A	CAT WALK 1 CONV. RCPT
CAT WALK 1 CONV. RCPT	20 A	1	PAD-4:21		0.3 0.3		PAD-4:22	1	20 A	CAT WALK 1 CONV. RCPT
CAT WALK 2,3 CONV....	20 A	1	PAD-4:23			0.3 0.3	PAD-4:24	1	20 A	CAT WALK 2,3 CONV. RCPT
CAT WALK 2,3 CONV....	20 A	1	PAD-4:25	0.3 0.3			PAD-4:26	1	20 A	CAT WALK 2,3 CONV. RCPT
CAT WALK 2,3 CONV....	20 A	1	PAD-4:27		0.3 0.3		PAD-4:28	1	20 A	CAT WALK 2,3 CONV. RCPT
CAT WALK 2,3 CONV....	20 A	1	PAD-4:29			0.3 0.3	PAD-4:30	1	20 A	CAT WALK 2,3 CONV. RCPT
ENTRANCE HIGH LIGHTS	20 A	1	PAD-4:31	0.6 0.0			PAD-4:32	1	20 A	CAT WALK 2,3 CONV. RCPT
Spare	20 A	1	PAD-4:33		0.0 0.5		PAD-4:34	1	20 A	TRACK LIGHTS CONTROL
Spare	20 A	1	PAD-4:35			0.0 0.0	PAD-4:36	1	20 A	Spare
Spare	20 A	1	PAD-4:37	0.0 0.0			PAD-4:38	1	20 A	Spare
Spare	20 A	1	PAD-4:39		0.0 0.0		PAD-4:40	1	20 A	Spare
Spare	20 A	1	PAD-4:41			0.0 0.0	PAD-4:42	1	20 A	Spare
			TOTAL LOAD:	7 kVA	8 kVA	7 kVA				
			TOTAL AMPS:	57 A	64 A	63 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	8807 VA	100.00%	8807 VA		
Lighting	1010 VA	100.00%	1010 VA	CONNECTED LOAD:	21889 VA
Other	5200 VA	100.00%	5200 VA	ESTIMATED DEMAND:	21917 VA
RCPT	2160 VA	100.00%	2160 VA	CONNECTED CURRENT:	61 A
LTIES	113 VA	125.00%	141 VA	EST. DEMAND CURRENT:	61 A

NOTES:

PANELBOARD: PAD-3

LOCATION: TOILET 1-605 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 150 A MAIN CB **SPECIAL:** NEW PANEL- PROVIDE 200% RATED NEUTRAL
BUS AMPS: 225 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
CONVENIENCE RCPT STG	20 A	1	PAD-3:1	0.3 0.3			PAD-3:2	1	20 A	CONVENIENCE RCPT STG
CONVENIENCE RCPT STG	20 A	1	PAD-3:3		0.3 0.3		PAD-3:4	1	20 A	CONVENIENCE RCPT STG
CONVENIENCE RCPT STG	20 A	1	PAD-3:5			0.3 0.3	PAD-3:6	1	20 A	CONVENIENCE RCPT STG
CONVENIENCE RCPT STG	20 A	1	PAD-3:7	0.3 0.5			PAD-3:8	1	20 A	REHERSAL PANEL
CONV. RCPT -GRIDIRON	20 A	1	PAD-3:9		0.3 0.3		PAD-3:10	1	20 A	CONV. RCPT -GRIDIRON
CONV. RCPT -GRIDIRON	20 A	1	PAD-3:11			0.3 0.3	PAD-3:12	1	20 A	CONV. RCPT -GRIDIRON
CONV. RCPT -GRIDIRON	20 A	1	PAD-3:13	0.3 0.3			PAD-3:14	1	20 A	CONV. RCPT -GRIDIRON
CONV. RCPT -GRIDIRON	20 A	1	PAD-3:15		0.3 0.3		PAD-3:16	1	20 A	CONV. RCPT -GRIDIRON
CONV. RCPT -GRIDIRON	20 A	1	PAD-3:17			0.3 0.3	PAD-3:18	1	20 A	CONV. RCPT -GRIDIRON
CONV. RCPT -GRIDIRON	20 A	1	PAD-3:19	0.3 0.3			PAD-3:20	1	20 A	CONV. RCPT -GRIDIRON
CONV. RCPT -GRIDIRON	20 A	1	PAD-3:21		0.3 0.3		PAD-3:22	1	20 A	CONV. RCPT -GRIDIRON
CONV. RCPT -GRIDIRON	20 A	1	PAD-3:23			0.3 0.3	PAD-3:24	1	20 A	CONV. RCPT -GRIDIRON
CONV RCPT-BLACK BOX	20 A	1	PAD-3:25	0.3 0.3			PAD-3:26	1	20 A	CONV RCPT-BLACK BOX
CONV RCPT-BLACK BOX	20 A	1	PAD-3:27		0.3 0.3		PAD-3:28	1	20 A	CONV RCPT-BLACK BOX
CONV RCPT-BLACK BOX	20 A	1	PAD-3:29			0.3 0.3	PAD-3:30	1	20 A	CONV RCPT-BLACK BOX
SIGNAL PROCESSING...	20 A	1	PAD-3:31	1.2 1.2			PAD-3:32	1	20 A	SIGNAL PROCESSING RACK
SIGNAL PROCESSING...	20 A	1	PAD-3:33		1.2 1.2		PAD-3:34	1	20 A	SIGNAL PROCESSING RACK
Spare	20 A	1	PAD-3:35			0.0 0.0	PAD-3:36	1	20 A	AUDI MOTORIZED SCREEN
Spare	20 A	1	PAD-3:37	0.0 0.0			PAD-3:38	1	20 A	Spare
Spare	20 A	1	PAD-3:39		0.0 0.0		PAD-3:40	1	20 A	Spare
Spare	20 A	1	PAD-3:41			0.0 0.0	PAD-3:42	1	20 A	Spare
			TOTAL LOAD:	6 kVA	5 kVA	3 kVA				
			TOTAL AMPS:	50 A	48 A	25 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
Other	4800 VA	100.00%	4800 VA		
SPEC	0 VA	0.00%	0 VA	CONNECTED LOAD:	14000 VA
				ESTIMATED DEMAND:	14000 VA
				CONNECTED CURRENT:	39 A
				EST. DEMAND CURRENT:	39 A

NOTES:

PANELBOARD: PAD-2

LOCATION: ELEC 1-614 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 150 A MAIN CB **SPECIAL:** NEW PANEL
BUS AMPS: 225 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
CORD REELS-613	20 A	1	PAD-2:1	0.4 0.4			PAD-2:2	1	20 A	CORD REELS-613
CORD REELS-613	20 A	1	PAD-2:3		0.4 0.4		PAD-2:4	1	20 A	CORD REELS-613
MITER SAW -SCENE SHOP	20 A	1	PAD-2:5			1.0 0.9	PAD-2:6	1	20 A	COILING DOOR-613
ROUTER TABLE -SCENE...	20 A	1	PAD-2:7	0.2 1.0			PAD-2:8	1	20 A	PANEL SAW - SCENE SHOP
TABLE SAW	20 A	1	PAD-2:9		1.7 1.2		PAD-2:10	1	20 A	PANEL SAW-SCENE SHOP
RCPT-CLASSROOM 623	20 A	1	PAD-2:11			0.5 1.8	PAD-2:12	3	30 A	AXYZ CNC ROUTER
ST PROJECTOR-623	20 A	1	PAD-2:13	0.5 1.8			PAD-2:14	--	--	--
RCPT-613 CONVENIENCE	20 A	1	PAD-2:15		1.3 1.8		PAD-2:16	--	--	--
RCPT-CORRIDOR 624	20 A	1	PAD-2:17			0.7 0.9	PAD-2:18	1	20 A	RCPT-CLASSROOM 623
BAND SAW -SCENE SHOP	20 A	1	PAD-2:19	0.8 0.4			PAD-2:20	1	20 A	PAINT SHAKER
MOBILE COMPRESSOR	30 A	3	PAD-2:21		0.4 1.0		PAD-2:22	1	20 A	RADIAL ARM SAW
--	--	--	PAD-2:23			0.4 3.9	PAD-2:24	3	60 A	AXYZ CNC BLOWER
--	--	--	PAD-2:25	0.4 3.9			PAD-2:26	--	--	--
CCP-6	20 A	1	PAD-2:27		0.9 3.9		PAD-2:28	--	--	--
Spare	20 A	1	PAD-2:29			0.0 0.0	PAD-2:30	1	20 A	Spare
Spare	20 A	1	PAD-2:31	0.0 0.0			PAD-2:32	1	20 A	Spare
Spare	20 A	1	PAD-2:33		0.0 0.0		PAD-2:34	1	20 A	Spare
Spare	20 A	1	PAD-2:35			0.0 0.0	PAD-2:36	1	20 A	Spare
Spare	20 A	1	PAD-2:37	0.0 2.5			PAD-2:38	3	60 A	PAD-2B (BASEMENT PANEL)
Spare	20 A	1	PAD-2:39		0.0 2.8		PAD-2:40	--	--	--
Spare	20 A	1	PAD-2:41			0.0 1.5	PAD-2:42	--	--	--
			TOTAL LOAD:	12 kVA	16 kVA	12 kVA				
			TOTAL AMPS:	102 A	130 A	97 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	17868 VA	100.00%	17868 VA		
Lighting	280 VA	100.00%	280 VA	CONNECTED LOAD:	39329 VA
Motor	1920 VA	112.50%	2160 VA	ESTIMATED DEMAND:	38149 VA
Power	3241 VA	100.00%	3241 VA	CONNECTED CURRENT:	109 A
RCPT	12840 VA	88.94%	11420 VA	EST. DEMAND CURRENT:	106 A
SPEC	1200 VA	100.00%	1200 VA		

NOTES:

PANELBOARD: PAD-2B

LOCATION: **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 60 A MCB **SPECIAL:** NEW PANEL
BUS AMPS: 100 AMPS

LOAD DESCRIPTION	BKR	P	CKT	A	B	C	CKT	P	BKR	LOAD DESCRIPTION
ELEVATOR SUMP	20 A	1	PAD-2B:1	1.2 0.4			PAD-2B:2	1	20 A	RCPT-ELEVATOR
RCPT-721, 720, 723	20 A	1	PAD-2B:3		0.9 0.7		PAD-2B:4	1	20 A	RCPT-STORAGE
RCPT-ARBOR PIT	20 A	1	PAD-2B:5			0.4 0.0	PAD-2B:6	1	20 A	Spare
SUMP PUMP ALARM	20 A	1	PAD-2B:7	0.2 0.3			PAD-2B:8	1	20 A	RCPT -CONVENIENCE
RCPT -CONVENIENCE	20 A	1	PAD-2B:9		0.3 0.3		PAD-2B:10	1	20 A	RCPT -CONVENIENCE
RCPT -CONVENIENCE	20 A	1	PAD-2B:11			0.3 0.3	PAD-2B:12	1	20 A	RCPT -CONVENIENCE
SUMP PUMP	20 A	3	PAD-2B:13	0.3 0.2			PAD-2B:14	1	20 A	S1 TYPE LIGHTS
--	--	--	PAD-2B:15		0.3 0.3		PAD-2B:16	1	20 A	LOWER LEVEL SS LIGHTS
--	--	--	PAD-2B:17			0.3 0.3	PAD-2B:18	1	20 A	STORAGE LIGHTS
Spare	20 A	1	PAD-2B:19	0.0 0.0			PAD-2B:20	1	20 A	Spare
Spare	20 A	1	PAD-2B:21		0.0 0.0		PAD-2B:22	1	20 A	Spare
Spare	20 A	1	PAD-2B:23			0.0 0.0	PAD-2B:24	1	20 A	Spare
Spare	20 A	1	PAD-2B:25	0.0 0.0			PAD-2B:26	1	20 A	Spare
Spare	20 A	1	PAD-2B:27		0.0 0.0		PAD-2B:28	1	20 A	Spare
Spare	20 A	1	PAD-2B:29			0.0 0.0	PAD-2B:30	1	20 A	Spare
			TOTAL LOAD:	3 kVA	3 kVA	2 kVA				
			TOTAL AMPS:	22 A	25 A	13 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
Lighting	280 VA	100.00%	280 VA		
Power	901 VA	100.00%	901 VA	CONNECTED LOAD:	6881 VA
RCPT	3720 VA	100.00%	3720 VA	ESTIMATED DEMAND:	6881 VA
				CONNECTED CURRENT:	19 A
				EST. DEMAND CURRENT:	19 A

NOTES:

PANELBOARD: PAD-1

LOCATION: ELEC 1-614 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 150 A MAIN CB **SPECIAL:** NEW PANEL
BUS AMPS: 225 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
RCPT-605,605,606	20 A	1	PAD-1:1	1.6 0.4			PAD-1:2	2	20 A	CUH-1
Spare	20 A	1	PAD-1:3		0.0 0.4		PAD-1:4	--	--	--
SECURITY ROOM	20 A	1	PAD-1:5			0.4 0.6	PAD-1:6	2	20 A	CUH-3
RCPT- 611,615,614,610	20 A	1	PAD-1:7	1.4 0.6			PAD-1:8	--	--	--
RCPT-DRESSING ROOM...	20 A	1	PAD-1:9		0.2 1.1		PAD-1:10	1	20 A	RCPT-EVENT CORRIDOR
RCPT-DRESSING ROOM...	20 A	1	PAD-1:11			0.2 0.2	PAD-1:12	1	20 A	RCPT-DRESSING ROOM 618
RCPT-621 VANITY	20 A	1	PAD-1:13	0.4 0.2			PAD-1:14	1	20 A	RCPT-DRESSING ROOM 621
RCPT-621 VANITY	20 A	1	PAD-1:15		0.4 1.1		PAD-1:16	1	20 A	RCPT-CONV. 618,621
RCPT-618 VANITY	20 A	1	PAD-1:17			0.4 0.4	PAD-1:18	1	20 A	RCPT-621 VANITY
RCPT-618 VANITY	20 A	1	PAD-1:19	0.4 0.4			PAD-1:20	1	20 A	RCPT-621 VANITY
BLACK BOX THEATRE...	20 A	1	PAD-1:21		0.3 0.4		PAD-1:22	1	20 A	RCPT-618 VANITY
BLACK BOX THEATRE...	20 A	1	PAD-1:23			0.3 0.4	PAD-1:24	1	20 A	RCPT-618 VANITY
BLACK BOX THEATRE...	20 A	1	PAD-1:25	0.3 0.3			PAD-1:26	1	20 A	BLACK BOX THEATRE RCPT
BLACK BOX THEATRE...	20 A	1	PAD-1:27		0.3 0.3		PAD-1:28	1	20 A	BLACK BOX THEATRE RCPT
BLACK BOX THEATRE...	20 A	1	PAD-1:29			0.2 0.5	PAD-1:30	1	20 A	Lighting - Dwelling Unit
OFFICE- 609	20 A	1	PAD-1:31	1.1 0.4			PAD-1:32	1	20 A	RCPT-618 VANITY
RCPT-618 VANITY	20 A	1	PAD-1:33		0.4 0.4		PAD-1:34	1	20 A	RCPT-618 VANITY
RCPT-618 VANITY	20 A	1	PAD-1:35			0.4 0.4	PAD-1:36	1	20 A	RCPT-621 VANITY
RCPT-621 VANITY	20 A	1	PAD-1:37	0.4 5.2			PAD-1:38	3	100 A	PAD-1B
RCPT-621 VANITY	20 A	1	PAD-1:39		0.4 3.4		PAD-1:40	--	--	--
RCPT-621 VANITY	20 A	1	PAD-1:41			0.4 2.8	PAD-1:42	--	--	--
			TOTAL LOAD:	13 kVA	9 kVA	7 kVA				
			TOTAL AMPS:	110 A	76 A	61 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	2080 VA	100.00%	2080 VA		
Lighting	4336 VA	100.00%	4336 VA	CONNECTED LOAD:	29127 VA
RCPT	15660 VA	81.93%	12830 VA	ESTIMATED DEMAND:	26298 VA
SPEC	0 VA	0.00%	0 VA	CONNECTED CURRENT:	81 A
				EST. DEMAND CURRENT:	73 A

NOTES:

PANELBOARD: PAD-1B

LOCATION: ELEC 1-614 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 100 A MLO **SPECIAL:** NEW PANEL
BUS AMPS: 125 AMPS

LOAD DESCRIPTION	BKR	P	CKT	A	B	C	CKT	P	BKR	LOAD DESCRIPTION
LIGHTS- 605,606,607,609	20 A	1	PAD-1B:1	1.0 0.6			PAD-1B:2	1	20 A	LIGHTS-602 CORRIDOR
LIGHTS-608,611	20 A	1	PAD-1B:3		0.3 0.6		PAD-1B:4	1	20 A	LIGHTS-602 CORRIDOR
LIGHTS- B42 CORRIDOR	20 A	1	PAD-1B:5			0.6 0.1	PAD-1B:6	1	20 A	LIGHTS- 602 CORRIDOR
LIGHTS-B42 CORRIDOR	20 A	1	PAD-1B:7	0.7 0.1			PAD-1B:8	1	20 A	LIGHTS- 618, 621
LIGHTS-627 CORRIDOR	20 A	1	PAD-1B:9		0.4 0.5		PAD-1B:10	1	20 A	LIGHTS- 627 CORRIDOR
Spare	20 A	1	PAD-1B:11			0.0 0.2	PAD-1B:12	1	20 A	LIGHTS ELEVATOR SHAFT
LIGHTS- 613	20 A	1	PAD-1B:13	1.0 0.2			PAD-1B:14	1	20 A	DOWN LIGHT
DRESSING RM 618	20 A	1	PAD-1B:15		0.2 0.2		PAD-1B:16	1	20 A	DRESSING RM 618
DRESSING RM 621	20 A	1	PAD-1B:17			0.2 0.2	PAD-1B:18	1	20 A	DRESSING RM 621
LIGHTS-DRESSING 1-618	20 A	1	PAD-1B:19	0.3 0.3			PAD-1B:20	1	20 A	DRESSING RM VANITY 618
LIGHTS- DRESSING 1-621	20 A	1	PAD-1B:21		0.3 0.3		PAD-1B:22	1	20 A	DRESSING RM VANITY 621
LIGHTS- CORRIDOR 1-611	20 A	1	PAD-1B:23			0.6 0.2	PAD-1B:24	1	20 A	STAGE EDGE LIGHTS
THEATRE CLASSROOM...	20 A	1	PAD-1B:25	0.4 0.3			PAD-1B:26	1	20 A	AUDI STAGE STARI LIGHTS
ROLLER SHADE	20 A	1	PAD-1B:27		0.0 0.4		PAD-1B:28	1	20 A	STORAGE 615
Spare	20 A	1	PAD-1B:29			0.0 0.4	PAD-1B:30	1	20 A	STORAGE 615
Spare	20 A	1	PAD-1B:31	0.0 0.4			PAD-1B:32	1	20 A	STORAGE 615
Spare	20 A	1	PAD-1B:33		0.0 0.4		PAD-1B:34	1	20 A	STORAGE 615
Spare	20 A	1	PAD-1B:35			0.0 0.4	PAD-1B:36	1	20 A	STORAGE 615
Spare	20 A	1	PAD-1B:37	0.0 0.0			PAD-1B:38	1	20 A	Spare
Spare	20 A	1	PAD-1B:39		0.0 0.0		PAD-1B:40	1	20 A	Spare
Spare	20 A	1	PAD-1B:41			0.0 0.0	PAD-1B:42	1	20 A	Spare
			TOTAL LOAD:	5 kVA	3 kVA	3 kVA				
			TOTAL AMPS:	44 A	29 A	24 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
Lighting	4336 VA	100.00%	4336 VA		
RCPT	2520 VA	100.00%	2520 VA	CONNECTED LOAD:	11414 VA
SPEC	0 VA	0.00%	0 VA	ESTIMATED DEMAND:	11414 VA
				CONNECTED CURRENT:	32 A
				EST. DEMAND CURRENT:	32 A

NOTES:

DISTRIBUTION PANEL: MDP-AD2

LOCATION: 39 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MAIN DEVICE: 1000 A MCB 36 **A.I.C....** 65000 AMPS SYMETRICAL
BUS AMPS: 1200 AMPS **SPECIAL:** NEW PANEL-PROVIDE 200% NEUTRAL AND ISOLATED GROUND BUS

SECTION No. 1

CKT	FRAME	POLES	RATING	KVA	DESCRIPTION/NAMEPLATE	NOTES
MDP-AD2:1	100 A	3	100 A	12.6 kVA	DMX RELAY RACKS -1 AUDITORIUM	
MDP-AD2:2	100 A	3	100 A	12.6 kVA	DMX RELAY RACK-2 AUDITORIUM	
MDP-AD2:3	100 A	3	100 A	12.6 kVA	DMX RELAY RACK-3 AUDITORIUM	
MDP-AD2:4	100 A	3	100 A	12.6 kVA	DMX RELAY RACKS BLACK BOX	
MDP-AD2:5	400 A	3	400 A	90.0 kVA	CSW-101	
MDP-AD2:6	400 A	3	200 A	45.0 kVA	CSW-102	
MDP-AD2:7	400 A	3	200 A	45.0 kVA	CSW-201	
MDP-AD2:8	--	3	60 A	0.1 kVA	SURGE PROTECTION DEVICE	
MDP-AD2:9						
MDP-AD2:10						
MDP-AD2:11						
MDP-AD2:12						
MDP-AD2:13						
MDP-AD2:14						
MDP-AD2:15						
MDP-AD2:16						
MDP-AD2:17						
MDP-AD2:18						
MDP-AD2:19						
MDP-AD2:20						
MDP-AD2:21						
MDP-AD2:22						
MDP-AD2:23						
MDP-AD2:24						
MDP-AD2:25						
MDP-AD2:26						

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
				CONN. LOAD:	230500 VA
				EST. DEMAND LOAD:	230500 VA
				CONN. CURRENT:	640 A
				EST. DEMAND...	640 A

NOTES:

PANELBOARD: EMLP-3

LOCATION: ELEC 1-342 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 60 A MCB **SPECIAL:** NEW PANEL
BUS AMPS: 100 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
LITES-EXIT SIGNS	20 A	1	EMLP-3:1	0.0 0.2			EMLP-3:2	1	20 A	Lighting-EM
Lighting	20 A	1	EMLP-3:3		0.6 0.5		EMLP-3:4	1	20 A	Lighting-EM
COMMONS HIGH LIGHTS	20 A	1	EMLP-3:5			1.0 0.0	EMLP-3:6	1	20 A	EXIT LIGHTS- AUDITORIUM
			EMLP-3:7				EMLP-3:8			
			EMLP-3:9				EMLP-3:10			
			EMLP-3:11				EMLP-3:12			
			EMLP-3:13				EMLP-3:14			
			EMLP-3:15				EMLP-3:16			
			EMLP-3:17				EMLP-3:18			
			EMLP-3:19				EMLP-3:20			
Spare	20 A	1	EMLP-3:21		0.0 0.0		EMLP-3:22	1	20 A	Spare
Spare	20 A	1	EMLP-3:23			0.0 0.0	EMLP-3:24	1	20 A	Spare
Spare	20 A	1	EMLP-3:25	0.0 0.0			EMLP-3:26	1	20 A	Spare
Spare	20 A	1	EMLP-3:27		0.0 0.0		EMLP-3:28	1	20 A	Spare
Spare	20 A	1	EMLP-3:29			0.0 0.0	EMLP-3:30	1	20 A	Spare
Existing load	20 A	1	EMLP-3:31	0.8 0.8			EMLP-3:32	1	20 A	Existing load
Existing load	20 A	1	EMLP-3:33		0.8 0.8		EMLP-3:34	1	20 A	Existing load
Existing load	20 A	1	EMLP-3:35			0.8 0.8	EMLP-3:36	1	20 A	Existing load
			TOTAL LOAD:	2 kVA	3 kVA	3 kVA				
			TOTAL AMPS:	15 A	23 A	23 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
Lighting	1091 VA	100.00%	1091 VA		
LITES	45 VA	125.00%	56 VA	CONNECTED LOAD:	7079 VA
				ESTIMATED DEMAND:	7090 VA
				CONNECTED CURRENT:	20 A
				EST. DEMAND CURRENT:	20 A

NOTES:

PANELBOARD: EM-AD

LOCATION: ELEC 1-614 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 150 A MCB **SPECIAL:** NEW PANEL
BUS AMPS: 200 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA	PHASE B kVA	PHASE C kVA	CKT	P	BKR	LOAD DESCRIPTION
EM-AD2	60 A	3	EM-AD:1	6.2 0.6			EM-AD:2	1	20 A	COILING DOOR-603
--	--	--	EM-AD:3		7.2 0.0		EM-AD:4	1	20 A	SPEC
--	--	--	EM-AD:5			6.1 0.7	EM-AD:6	1	20 A	RCPT
LIGHTS-EVENT CORRIDOR	20 A	1	EM-AD:7	0.7 0.2			EM-AD:8	1	20 A	LIGHTS-TOILETS
LIGHTS - DRESSING AREA	20 A	1	EM-AD:9		0.5 0.3		EM-AD:10	1	20 A	LIGHTS-B42 CORRIDOR
Lighting - Dwelling Unit	20 A	1	EM-AD:11			0.2 1.0	EM-AD:12	1	20 A	LIGHTS-613
DOWN LIGHTS	20 A	1	EM-AD:13	0.1 0.5			EM-AD:14	1	20 A	AUDITORIUM AISLE LIGHTS

PANELBOARD: PCL-1

LOCATION: STORAGE 1-202 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 400 A MAIN CB **SPECIAL:** NEW PANEL
BUS AMPS: 400 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
PCL-2	150 A	3	PCL-1:1	2.7	6.0					PCL-1:2	3	225 A	LP1-2A
--	--	--	PCL-1:3			1.1	6.0			PCL-1:4	--	--	--
--	--	--	PCL-1:5					1.8	6.0	PCL-1:6	--	--	--
EXISTING REFEED CKT	20 A	1	PCL-1:7	0.2	6.0					PCL-1:8	3	225 A	LP1-3A
EXISTING REFEED CKT	20 A	1	PCL-1:9			0.3	6.0			PCL-1:10	--	--	--
EXISTING REFEED CKT	20 A	1	PCL-1:11					0.2	6.0	PCL-1:12	--	--	--
EXISTING REFEED CKT	20 A	1	PCL-1:13	0.3	0.3					PCL-1:14	1	20 A	EXISTING REFEED CKT
EXISTING REFEED CKT	20 A	1	PCL-1:15			0.2	0.3			PCL-1:16	1	20 A	EXISTING REFEED CKT
EXISTING REFEED CKT	20 A	1	PCL-1:17					0.3	0.3	PCL-1:18	1	20 A	EXISTING REFEED CKT
EXISTING REFEED CKT	20 A	1	PCL-1:19	0.2	0.3					PCL-1:20	1	20 A	EXISTING REFEED CKT
EXISTING REFEED CKT	20 A	1	PCL-1:21			0.0	0.3			PCL-1:22	1	20 A	EXISTING REFEED CKT
Spare	20 A	1	PCL-1:23					0.0	0.0	PCL-1:24	1	20 A	Spare
Spare	20 A	1	PCL-1:25	0.0	0.0					PCL-1:26	1	20 A	Spare
Spare	20 A	1	PCL-1:27			0.0	0.0			PCL-1:28	1	20 A	Spare
Spare	20 A	1	PCL-1:29					0.0	0.0	PCL-1:30	1	20 A	Spare
Spare	20 A	1	PCL-1:31	0.0	0.0					PCL-1:32	1	20 A	Spare
Spare	20 A	1	PCL-1:33			0.0	0.0			PCL-1:34	1	20 A	Spare
Spare	20 A	1	PCL-1:35					0.0	0.0	PCL-1:36	1	20 A	Spare
Spare	20 A	1	PCL-1:37	0.0	0.0					PCL-1:38	1	20 A	Spare
Spare	20 A	1	PCL-1:39			0.0	0.0			PCL-1:40	1	20 A	Spare
Spare	20 A	1	PCL-1:41					0.0	0.0	PCL-1:42	1	20 A	Spare
			TOTAL LOAD:	16 kVA		14 kVA		15 kVA					
			TOTAL AMPS:	134 A		118 A		122 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	1500 VA	100.00%	1500 VA		
RCPT	4080 VA	100.00%	4080 VA	**CONNECTED LOAD:**	44780 VA
				ESTIMATED DEMAND:	44780 VA
				CONNECTED CURRENT:	124 A
				EST. DEMAND CURRENT:	124 A

NOTES:

PANELBOARD: PCL-2

LOCATION: STORAGE 1-202 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 150 A MAIN CB **SPECIAL:** NEW PANEL
BUS AMPS: 225 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
ELEVATOR SUMP PUMP	20 A	1	PCL-2:1	0.5	1.5					PCL-2:2	1	20 A	EBB-1 HEATER
ELEV/EXT CONV. RCPT	20 A	1	PCL-2:3			0.4	0.7			PCL-2:4	1	20 A	LIBRARY TV
SHORT THROW...	20 A	1	PCL-2:5					0.2	1.6	PCL-2:6	1	20 A	LIBRARY RCPT
PRINTER LIBRARY	20 A	1	PCL-2:7	0.4	0.4					PCL-2:8	1	20 A	PRINTER LIBRARY
Spare	20 A	1	PCL-2:9			0.0	0.0			PCL-2:10	1	20 A	Spare
Spare	20 A	1	PCL-2:11					0.0	0.0	PCL-2:12	1	20 A	Spare
Spare	20 A	1	PCL-2:13	0.0	0.0					PCL-2:14	1	20 A	Spare
Spare	20 A	1	PCL-2:15			0.0	0.0			PCL-2:16	1	20 A	Spare
Spare	20 A	1	PCL-2:17					0.0	0.0	PCL-2:18	1	20 A	Spare
Spare	20 A	1	PCL-2:19	0.0	0.0					PCL-2:20	1	20 A	Spare
Spare	20 A	1	PCL-2:21			0.0	0.0			PCL-2:22	1	20 A	Spare
Spare	20 A	1	PCL-2:23					0.0	0.0	PCL-2:24	1	20 A	Spare
Spare	20 A	1	PCL-2:25	0.0	0.0					PCL-2:26	1	20 A	Spare
Spare	20 A	1	PCL-2:27			0.0	0.0			PCL-2:28	1	20 A	Spare
Spare	20 A	1	PCL-2:29					0.0	0.0	PCL-2:30	1	20 A	Spare
Spare	20 A	1	PCL-2:31	0.0	0.0					PCL-2:32	1	20 A	Spare
Spare	20 A	1	PCL-2:33			0.0	0.0			PCL-2:34	1	20 A	Spare
Spare	20 A	1	PCL-2:35					0.0	0.0	PCL-2:36	1	20 A	Spare
Spare	20 A	1	PCL-2:37	0.0	0.0					PCL-2:38	1	20 A	Spare
Spare	20 A	1	PCL-2:39			0.0	0.0			PCL-2:40	1	20 A	Spare
Spare	20 A	1	PCL-2:41					0.0	0.0	PCL-2:42	1	20 A	Spare
			TOTAL LOAD:	3 kVA		1 kVA		2 kVA					
			TOTAL AMPS:	23 A		9 A		16 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	1500 VA	100.00%	1500 VA		
RCPT	4080 VA	100.00%	4080 VA	**CONNECTED LOAD:**	5580 VA
				ESTIMATED DEMAND:	5580 VA
				CONNECTED CURRENT:	15 A
				EST. DEMAND CURRENT:	15 A

NOTES:

PANELBOARD: EMLP-1

LOCATION: ELECTRICAL ROOM 1-168 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 100 A MAIN CB **SPECIAL:** EXISTING PANEL
BUS AMPS: 100 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
(E)EM LIGHTING -STAIR	20 A	1	EMLP-1:1	0.4	0.6					EMLP-1:2	1	20 A	(E) EM LIGHTING
(E) EM LIGHTING	20 A	1	EMLP-1:3			0.6	0.6			EMLP-1:4	1	20 A	(E) EM LIGHTING
(E) EXIS STAIR EM...	20 A	1	EMLP-1:5					0.4	0.6	EMLP-1:6	1	20 A	(E) EM LIGHTING
(E) EM LIGHTING	20 A	1	EMLP-1:7	0.6	0.8					EMLP-1:8	1	20 A	(E) SYSTEM 600 AIR CONDI.
(E) EXISTING LOAD	20 A	1	EMLP-1:9			0.5	0.4			EMLP-1:10	1	20 A	(E) TTB RECEPT
(E) EM LIGHTING	20 A	1	EMLP-1:11					0.6	0.4	EMLP-1:12	1	20 A	(E) TTB RECEPT
(E) EM RCPT	20 A	1	EMLP-1:13	0.4	0.6					EMLP-1:14	1	20 A	(E) CLOCK TRANSFORMER
(E) EM RCPT	20 A	1	EMLP-1:15			0.4	0.4			EMLP-1:16	1	20 A	(E) TTB RECEPT
(E) 108 NORTH OUTLET	20 A	1	EMLP-1:17					0.2	0.4	EMLP-1:18	1	20 A	(E) TTB RECEPT
(E) PUBLIC ADDRESS	20 A	1	EMLP-1:19	0.6	0.4					EMLP-1:20	1	20 A	(E) EXISTING LOAD
(E) PUBLIC ADDRESS	20 A	1	EMLP-1:21			0.6	1.2			EMLP-1:22	1	20 A	IDF-156
AV HEAD END(N)	20 A	1	EMLP-1:23					0.5	0.2	EMLP-1:24	1	20 A	DOOR ACCESS POWER
IDF	20 A	1	EMLP-1:25	1.2	0.1					EMLP-1:26	1	20 A	EXIT LIGHTS
LITES	20 A	1	EMLP-1:27			0.0	1.2			EMLP-1:28	1	20 A	RCPT
SECURITY WORKING...	20 A	1	EMLP-1:29					0.4	0.2	EMLP-1:30	1	20 A	DOOR - VESTIBULE 008
DOOR-VESTIBULE 008	20 A	1	EMLP-1:31	0.2	0.4					EMLP-1:32	1	20 A	EM LIGHTING (N)
LITES-EXIT SIGN (N)	20 A	1	EMLP-1:33			0.0	0.3			EMLP-1:34	1	20 A	ELEVATOR CAB LTG (N)
LIGHTS- EM LIBRARY (N)	20 A	1	EMLP-1:35					0.9	0.2	EMLP-1:36	1	20 A	ELEVATOR FAN (N)
LIGHTS-EM IT AREA (N)	20 A	1	EMLP-1:37	0.4	2.6					EMLP-1:38	3	40 A	(E) EMLP-2
LIGHTS-EM LIBRARY (N)	20 A	1	EMLP-1:39			0.5	1.1			EMLP-1:40	--	--	--
IT AREA IDF CABINET (N)	20 A	1	EMLP-1:41					0.6	1.9	EMLP-1:42	--	--	--
			TOTAL LOAD:	9 kVA		8 kVA		7 kVA					
			TOTAL AMPS:	78 A		67 A		61 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
Lighting	2760 VA	100.00%	2760 VA		
Motor	180 VA	125.00%	225 VA	**CONNECTED LOAD:**	24526 VA
Power	1188 VA	100.00%	1188 VA	**ESTIMATED DEMAND:**	24601 VA
RCPT	5640 VA	100.00%	5640 VA	**CONNECTED CURRENT:**	68 A
LITES	121 VA	125.00%	152 VA	**EST. DEMAND CURRENT:**	68 A

NOTES: NEW PANEL.(E) EXISTING LOAD. (N)- PROVIDE NEW CIRCUIT BREAKERS.

PANELBOARD: EMLP-2

LOCATION: ELEC 1-117 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: RECESSED NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 60 A MAIN CB **SPECIAL:**
BUS AMPS: 100 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
EXISTING LOAD	20 A	1	EMLP-2:1	0.2	0.6					EMLP-2:2	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	EMLP-2:3			0.2	0.6			EMLP-2:4	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	EMLP-2:5					0.6	0.6	EMLP-2:6	1	20 A	EXISTING LOAD
NEW LOAD	20 A	1	EMLP-2:7	0.6	0.6					EMLP-2:8	1	20 A	NEW LOAD
DOOR ACCESS CONTROL	20 A	1	EMLP-2:9			0.4	0.0			EMLP-2:10	1	20 A	LITES-EXIT (N)
LITES- CORRDIOR 300	20 A	1	EMLP-2:11					0.6	0.2	EMLP-2:12	1	20 A	EM LIGHTS CORRIDOR 300...
IT IDF CABINET 529 (N)	20 A	1	EMLP-2:13	0.6	0.0					EMLP-2:14	1	20 A	Spare
Spare	20 A	1	EMLP-2:15			0.0	0.0			EMLP-2:16	1	20 A	Spare
Spare	20 A	1	EMLP-2:17					0.0	0.0	EMLP-2:18	1	20 A	Spare
Spare	20 A	1	EMLP-2:19	0.0	0.0					EMLP-2:20	1	20 A	Spare
Spare	20 A	1	EMLP-2:21			0.0	0.0			EMLP-2:22	1	20 A	Spare
Spare	20 A	1	EMLP-2:23					0.0	0.0	EMLP-2:24	1	20 A	Spare
Spare	20 A	1	EMLP-2:25	0.0	0.0					EMLP-2:26	1	20 A	Spare
Spare	20 A	1	EMLP-2:27			0.0	0.0			EMLP-2:28	1	20 A	Spare
Spare	20 A	1	EMLP-2:29					0.0	0.0	EMLP-2:30	1	20 A	Spare
			TOTAL LOAD:	3 kVA		1 kVA		2 kVA					
			TOTAL AMPS:	23 A		10 A		17 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
Lighting	722 VA	100.00%	722 VA		
Power	360 VA	100.00%	360 VA	**CONNECTED LOAD:**	5658 VA
RCPT	600 VA	100.00%	600 VA	**ESTIMATED DEMAND:**	5661 VA
LITES	10 VA	125.00%	13 VA	**CONNECTED CURRENT:**	16 A
				EST. DEMAND CURRENT:	16 A

NOTES: NEW PANEL, EXISTING TUB. EXISTING FEEDS AND LOADS TO BE RECONNECTED TO THE NEW PANEL IN THE SAME LOCATION -...
(N) PROVIDE NEW CIRCUIT.

PANELBOARD: LP-69

LOCATION: ELECTRICAL ROOM 1-168 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 200 A MAIN CB **SPECIAL:**
BUS AMPS: 225 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
EXISTING LOAD	20 A	2	LP-69:1	1.6	0.7					LP-69:2	1	20 A	EXISTING LOAD
--	--	--	LP-69:3			1.6	0.7			LP-69:4	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP-69:5					0.7	0.7	LP-69:6	1	20 A	EXISTING LOAD
LTG COMMONS/GRP RM (N)	20 A	1	LP-69:7	0.6	0.7					LP-69:8	1	20 A	EXISTING LOAD
			LP-69:9				0.7			LP-69:10	1	20 A	EXISTING LOAD
			LP-69:11						0.7	LP-69:12	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP-69:13	0.7	0.6					LP-69:14	1	20 A	REFRIGERATOR-307(N/A)
EXISTING LOAD	20 A	1	LP-69:15			0.7	1.0			LP-69:16	1	20 A	MICROWAVE - 307(N/A)
EXISTING LOAD	20 A	1	LP-69:17					0.7	0.5	LP-69:18	3	15 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LP-69:19	0.7	0.5					LP-69:20	--	--	--
Space	--	--	LP-69:21			0.0	0.5			LP-69:22	--	--	--
EXISTING LOAD	50 A	3	LP-69:23					4.2	4.2	LP-69:24	3	45 A	EXISTING LOAD
--	--	--	LP-69:25	4.2	4.2					LP-69:26	--	--	--
--	--	--	LP-69:27			4.2	4.2			LP-69:28	--	--	--
RCPT-CLASSROOM 307...	20 A	1	LP-69:29					1.3	0.8	LP-69:30	1	20 A	UV-1-307 CLASSROOM 307(N)
CCU-1-308 (N/A)	20 A	2	LP-69:31	0.2	0.4					LP-69:32	1	20 A	CLASSROOM-307...
--	--	--	LP-69:33			0.2	0.3			LP-69:34	2	20 A	FPB-1-204 (N/A)
RCPT- COMMONS (N)	20 A	1	LP-69:35					1.8	0.3	LP-69:36	--	--	--
CUH (N)	20 A	2	LP-69:37	0.3	1.1					LP-69:38	1	20 A	RCPT- SMALL GRP 302,303...
--	--	--	LP-69:39			0.3	2.5			LP-69:40	2	60 A	EXISTING LOAD
RCPT-SMALL GRP 301 (N)	20 A	1	LP-69:41					0.9	2.5	LP-69:42	--	--	--
			TOTAL LOAD:	16 kVA		17 kVA		19 kVA					
			TOTAL AMPS:	137 A		141 A		161 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	2292 VA	100.00%	2292 VA		
Lighting	406 VA	100.00%	406 VA	**CONNECTED LOAD:**	52449 VA
RCPT	6960 VA	100.00%	6960 VA	**ESTIMATED DEMAND:**	52449 VA
				CONNECTED CURRENT:	146 A
				EST. DEMAND CURRENT:	146 A

NOTES: EXISTING PANEL. PROVIDE NEW CIRCUIT BREAKERS FOR THE NEW ADDED LOAD. PROVIDE NEW UPDATED PANELBOARD...
(N) - PROVIDE NEW CIRCUIT BREAKERS.

PANELBOARD: LPM2-1-A1

LOCATION: STORAGE 1-515 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 200 A MCB **SPECIAL:** EXISTING PANEL
BUS AMPS: 200 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
EXISTING LOAD	20 A	1	LPM2-1-A1:1	0.7	0.7					LPM2-1-A1:2	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPM2-1-A1:3			0.7	0.7			LPM2-1-A1:4	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPM2-1-A1:5					0.7	0.7	LPM2-1-A1:6	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPM2-1-A1:7	0.7	0.7					LPM2-1-A1:8	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPM2-1-A1:9			0.7	0.7			LPM2-1-A1...	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPM2-1-A1...					0.0	0.0	LPM2-1-A1...	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPM2-1-A1...	0.7	0.7					LPM2-1-A1...	1	20 A	EXISTING LOAD
Spare	20 A	1	LPM2-1-A1...			0.0	0.7			LPM2-1-A1...	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPM2-1-A1...					0.7	0.7	LPM2-1-A1...	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPM2-1-A1...	0.7	0.7					LPM2-1-A1...	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPM2-1-A1...			0.7	0.7			LPM2-1-A1...	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPM2-1-A1...					0.7	0.7	LPM2-1-A1...	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPM2-1-A1...	0.7	0.7					LPM2-1-A1...	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPM2-1-A1...			0.7	0.7			LPM2-1-A1...	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPM2-1-A1...					0.7	0.7	LPM2-1-A1...	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPM2-1-A1...	0.7	0.7					LPM2-1-A1...	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPM2-1-A1...			0.7	0.7			LPM2-1-A1...	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPM2-1-A1...					0.7	0.7	LPM2-1-A1...	1	20 A	EXISTING LOAD
LIGHTS -CAFETERIA (N)	20 A	1	LPM2-1-A1...	1.2	1.1					LPM2-1-A1...	1	20 A	LIGHTS-CAFETERIA 100 (N)
LIGHTS -CAFETERIA (N)	20 A	1	LPM2-1-A1...			1.2	1.1			LPM2-1-A1...	1	20 A	LIGHTS- CAFETERIA 100 (N)
LIGHTS -CAFETERIA (N)	20 A	1	LPM2-1-A1...					1.2	0.7	LPM2-1-A1...	1	20 A	LITES- COMMUNITY RM (N)
			TOTAL LOAD:	11 kVA		10 kVA		9 kVA					
			TOTAL AMPS:	90 A		85 A		74 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
Lighting	2834 VA	100.00%	2834 VA		
				CONNECTED LOAD:	29591 VA
				ESTIMATED DEMAND:	29591 VA
				CONNECTED CURRENT:	82 A
				EST. DEMAND CURRENT:	82 A

(N) : PROVIDE NEW CIRCUIT BREAKER AND NEW CIRCUIT FOR LIGHITNG.

PANELBOARD: LPY-2A1

LOCATION: JANITOR 2-123 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 100 A MCB **SPECIAL:** EXISTING PANEL
BUS AMPS: 100 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
EXISTING LOAD	20 A	1	LPY-2A1:1	0.4	0.4					LPY-2A1:2	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPY-2A1:3			0.4	0.4			LPY-2A1:4	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPY-2A1:5					0.4	0.4	LPY-2A1:6	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPY-2A1:7	0.4	0.4					LPY-2A1:8	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPY-2A1:9			0.4	0.4			LPY-2A1:10	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPY-2A1:11					0.4	0.4	LPY-2A1:12	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPY-2A1:13	0.4	0.4					LPY-2A1:14	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPY-2A1:15			0.4	0.4			LPY-2A1:16	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	LPY-2A1:17					0.4	0.4	LPY-2A1:18	1	20 A	EXISTING LOAD
EXISTING LOAD	30 A	2	LPY-2A1:19	0.5	0.4					LPY-2A1:20	1	20 A	EXISTING LOAD
--	--	--	LPY-2A1:21			0.5	0.4			LPY-2A1:22	1	20 A	EXISTING LOAD
RCPT-350,351 (N)	20 A	1	LPY-2A1:23					1.1	0.2	LPY-2A1:24	1	20 A	TV SCRRENS -STUDY (N)
LIGHTS- CORRIDOR 350...	20 A	1	LPY-2A1:25	0.6	0.9					LPY-2A1:26	3	40 A	LPY-3A1 (N)
ELEVATOR SHAFT LTG (N)	20 A	1	LPY-2A1:27			0.5	1.4			LPY-2A1:28	--	--	--
			LPY-2A1:29						0.8	LPY-2A1:30	--	--	--
			TOTAL LOAD:	5 kVA		5 kVA		4 kVA					
			TOTAL AMPS:	40 A		44 A		37 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	1040 VA	100.00%	1040 VA		
Lighting	830 VA	100.00%	830 VA	**CONNECTED LOAD:**	14393 VA
RCPT	2880 VA	100.00%	2880 VA	**ESTIMATED DEMAND:**	14393 VA
				CONNECTED CURRENT:	40 A
				EST. DEMAND CURRENT:	40 A

NOTES:(N) PROVIDE NEW CIRCUIT BREAKER. PROVIDE NEW TYPED PANELBOARD DIRECTORY.

PANELBOARD: MDP-K2

LOCATION: MECH 2-903 **VOLTAGE:** 480/277 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 14,000 AMPS SYMMETRICAL
MAIN DEVICE: 400 A MAIN CB **SPECIAL:** EXISTING PANEL
BUS AMPS: 400 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
EXISTING S-10	150 A	3	MDP-K2:1	37.4	6.9					MDP-K2:2	3	35 A	EXISTING S-11
--	--	--	MDP-K2:3			37.4	6.9			MDP-K2:4	--	--	--
--	--	--	MDP-K2:5					37.4	6.9	MDP-K2:6	--	--	--
RTU-1 (N)	60 A	3	MDP-K2:7	13.2	5.0					MDP-K2:8	3	25 A	EXISTING S-12
--	--	--	MDP-K2:9			13.2	5.0			MDP-K2:10	--	--	--
--	--	--	MDP-K2:11					13.2	5.0	MDP-K2:12	--	--	--
EXISTING S-3A	80 A	3	MDP-K2:13	16.0	3.6					MDP-K2:14	3	20 A	EXISTING S-2A
--	--	--	MDP-K2:15			16.0	3.6			MDP-K2:16	--	--	--
--	--	--	MDP-K2:17					16.0	3.6	MDP-K2:18	--	--	--
EXISTING LOAD	20 A	3	MDP-K2:19	2.0	2.3					MDP-K2:20	3	20 A	EXISTING P-3
--	--	--	MDP-K2:21			2.0	2.3			MDP-K2:22	--	--	--
--	--	--	MDP-K2:23					2.0	2.3	MDP-K2:24	--	--	--
Space	--	--	MDP-K2:25	0.0	2.3					MDP-K2:26	3	20 A	EXISTING P-5
Space	--	--	MDP-K2:27			0.0	2.3			MDP-K2:28	--	--	--
Space	--	--	MDP-K2:29					0.0	2.3	MDP-K2:30	--	--	--
			MDP-K2:31		0.0					MDP-K2:32	--	--	Space
			MDP-K2:33				0.0			MDP-K2:34	--	--	Space
			MDP-K2:35						0.0	MDP-K2:36	--	--	Space
			TOTAL LOAD:	89 kVA		89 kVA		89 kVA					
			TOTAL AMPS:	320 A		320 A		320 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	39656 VA	100.00%	39656 VA		
				CONNECTED LOAD:	266016 VA
				ESTIMATED DEMAND:	266016 VA
				CONNECTED CURRENT:	320 A
				EST. DEMAND CURRENT:	320 A

NOTES: EXISTING PANEL. (N) PROVIDE NEW CIRCUIT BREAKER

PANELBOARD: MDP-M2

LOCATION: MECH 2-500 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 500 A MAIN CB **SPECIAL:**
BUS AMPS: 600 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
LPM2-1A2 (EXISTING)	225 A	3	MDP-M2:1	12.5	12.5					MDP-M2:2	3	225 A	LPM2-1A3 (EXISTING)
--	--	--	MDP-M2:3			12.5	12.5			MDP-M2:4	--	--	--
--	--	--	MDP-M2:5					13.5	12.5	MDP-M2:6	--	--	--
LPM2-1A1 (EXISTING)	150 A	3	MDP-M2:7	9.0						MDP-M2:8			
--	--	--	MDP-M2:9			9.0				MDP-M2:10			
--	--	--	MDP-M2:11					9.0		MDP-M2:12			
CAFE LIGHTS (EXISTING)	150 A	3	MDP-M2:13	9.0	0.0					MDP-M2:14	3	150 A	Spare
--	--	--	MDP-M2:15			9.0	0.0			MDP-M2:16	--	--	--
--	--	--	MDP-M2:17					9.0	0.0	MDP-M2:18	--	--	--
			MDP-M2:19							MDP-M2:20			
			MDP-M2:21							MDP-M2:22			
			MDP-M2:23							MDP-M2:24			
			MDP-M2:25							MDP-M2:26			
			MDP-M2:27							MDP-M2:28			
			MDP-M2:29							MDP-M2:30			
			MDP-M2:31							MDP-M2:32			
			MDP-M2:33							MDP-M2:34			
			MDP-M2:35							MDP-M2:36			
			MDP-M2:37							MDP-M2:38			
			MDP-M2:39							MDP-M2:40			
			MDP-M2:41							MDP-M2:42			
			TOTAL LOAD:	43 kVA		43 kVA		44 kVA					
			TOTAL AMPS:	358 A		358 A		367 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
				CONNECTED LOAD:	130000 VA
				ESTIMATED DEMAND:	130000 VA
				CONNECTED CURRENT:	361 A
				EST. DEMAND CURRENT:	361 A

NOTES:

PANELBOARD: PAR-7

LOCATION: ELEC. ROOM 1-352 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 100 A MCB **SPECIAL:** NEW PANEL
BUS AMPS: 100 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
LTG- CORRDIOR...	20 A	1	PAR-7:1	0.4	0.2					PAR-7:2	1	20 A	LIGHTING KITCHEN(E)
LTG- STORAGE 346,349(E)	20 A	1	PAR-7:3			0.2	0.4			PAR-7:4	1	20 A	WATER FOUNTAIN CORR.(E)
EDH-1(E)	30 A	1	PAR-7:5					2.5	1.2	PAR-7:6	1	20 A	LIGHTING CORRIDOR(E)
CLOUD CEILING LIGHT(E)	20 A	1	PAR-7:7	0.9	0.3					PAR-7:8	1	20 A	LIGHTING CORRIDOR(E)
RCPT-428 OFFICE (N)	20 A	1	PAR-7:9			1.1	1.1			PAR-7:10	1	20 A	RCPT-428 OFFICE (N)
RCPT-428 OFFICE (N)	20 A	1	PAR-7:11					0.4	0.5	PAR-7:12	1	20 A	RCPT- 1-343 BLDG SERV.(N)
RCPT- 1-343 BLDG...	20 A	1	PAR-7:13	0.7	1.1					PAR-7:14	1	20 A	RCPT-CONV.(N)
RCPT	20 A	1	PAR-7:15			1.4	0.0			PAR-7:16	1	20 A	Spare
Spare	20 A	1	PAR-7:17					0.0	0.0	PAR-7:18	1	20 A	Spare
Spare	20 A	1	PAR-7:19	0.0	0.0					PAR-7:20	1	20 A	Spare
Spare	20 A	1	PAR-7:21			0.0	0.0			PAR-7:22	1	20 A	Spare
Spare	20 A	1	PAR-7:23					0.0	0.0	PAR-7:24	1	20 A	Spare
Spare	20 A	1	PAR-7:25	0.0	0.0					PAR-7:26	1	20 A	Spare
Spare	20 A	1	PAR-7:27			0.0	0.0			PAR-7:28	1	20 A	Spare
Spare	20 A	1	PAR-7:29					0.0	0.0	PAR-7:30	1	20 A	Spare
Spare	20 A	1	PAR-7:31	0.0	0.0					PAR-7:32	1	20 A	Spare
Spare	20 A	1	PAR-7:33			0.0	0.0			PAR-7:34	1	20 A	Spare
Spare	20 A	1	PAR-7:35					0.0	0.0	PAR-7:36	1	20 A	Spare
Spare	20 A	1	PAR-7:37	0.0	0.0					PAR-7:38	1	20 A	Spare
Spare	20 A	1	PAR-7:39			0.0	0.0			PAR-7:40	1	20 A	Spare
Spare	20 A	1	PAR-7:41					0.0	0.0	PAR-7:42	1	20 A	Spare
			TOTAL LOAD:	4 kVA		4 kVA		5 kVA					
			TOTAL AMPS:	30 A		36 A		39 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	2460 VA	100.00%	2460 VA		
Lighting	900 VA	100.00%	900 VA	**CONNECTED LOAD:**	12310 VA
Other	400 VA	100.00%	400 VA	**ESTIMATED DEMAND:**	12310 VA
RCPT	6660 VA	100.00%	6660 VA	**CONNECTED CURRENT:**	34 A
				EST. DEMAND CURRENT:	34 A

NOTES: (E) EXISTING TO REMAIN. (N) NEW CIRCUIT.

DISTRIBUTION PANEL: MDP-P

LOCATION: ELECTRICAL ROOM 1-168 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MAIN DEVICE: 500 A MCB 39 **A.I.C....** 65000.00
BUS AMPS: 600 AMPS **SPECIAL:** EXISTING PANEL

SECTION No. 1

CKT	FRAME	POLES	RATING	KVA	DESCRIPTION/NAMEPLATE	NOTES
MDP-P:1	225 A	3	150 A	29.0 kVA	PCP-1 (NEW PANEL)	
MDP-P:2	225 A	3	225 A	41.0 kVA	PC-1A (EXISTING LOAD)	
MDP-P:3	--	3	150 A	18.0 kVA	LPP-2A1 (EXISTING LOAD)	
MDP-P:4	--	3	150 A	18.0 kVA	LPH-2B1 (EXISTING LOAD)	
MDP-P:5	--	3	150 A	20.0 kVA	LPP-1C1 (EXISTING LOAD)	
MDP-P:6	--	3	60 A	0.0 kVA	Spare	
MDP-P:7	--	1	30 A	0.1 kVA	EXISTING SPD	
MDP-P:8						
MDP-P:9						
MDP-P:10						
MDP-P:11						
MDP-P:12						
MDP-P:13						
MDP-P:14						
MDP-P:15						
MDP-P:16						
MDP-P:17						
MDP-P:18						
MDP-P:19						
MDP-P:20						
MDP-P:21						
MDP-P:22						
MDP-P:23						
MDP-P:24						
MDP-P:25						
MDP-P:26						

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	4495 VA	100.00%	4495 VA		
Lighting	10914 VA	100.00%	10914 VA		
RCPT	54102 VA	59.24%	32051 VA		
				CONN. LOAD:	126124 VA
				EST. DEMAND LOAD:	104073 VA
				CONN. CURRENT:	350 A
				EST. DEMAND...	289 A

NOTES:

PANELBOARD: MDP-X

LOCATION: JANITOR 2-123 **VOLTAGE:** 480/277 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 14,000 AMPS SYMMETRICAL
MAIN DEVICE: 300 A MAIN CB **SPECIAL:**
BUS AMPS: 300 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
EXISTING RTU	110 A	3	MDP-X:1	24.4	13.3					MDP-X:2	3	60 A	EXISTING RTU
--	--	--	MDP-X:3			24.4	13.3			MDP-X:4	--	--	--
--	--	--	MDP-X:5					24.4	13.3	MDP-X:6	--	--	--
EXISTING RTU	70 A	3	MDP-X:7	15.5	11.0					MDP-X:8	3	50 A	EXISTING RTU
--	--	--	MDP-X:9			15.5	11.0			MDP-X:10	--	--	--
--	--	--	MDP-X:11					15.5	11.0	MDP-X:12	--	--	--
EXISTING RTU	25 A	3	MDP-X:13	5.5	5.5					MDP-X:14	3	25 A	EXISTING RTU
--	--	--	MDP-X:15			5.5	5.5			MDP-X:16	--	--	--
--	--	--	MDP-X:17					5.5	5.5	MDP-X:18	--	--	--
Spare	20 A	3	MDP-X:19	4.4	10.0					MDP-X:20	3	15 A	Spare
--	--	--	MDP-X:21			4.4	10.0			MDP-X:22	--	--	--
--	--	--	MDP-X:23					4.4	10.0	MDP-X:24	--	--	--
Spare	15 A	3	MDP-X:25	0.0	0.0					MDP-X:26	3	40 A	Spare
--	--	--	MDP-X:27			0.0	0.0			MDP-X:28	--	--	--
--	--	--	MDP-X:29					0.0	0.0	MDP-X:30	--	--	--
			MDP-X:31							MDP-X:32			
			MDP-X:33							MDP-X:34			
			MDP-X:35							MDP-X:36			
			MDP-X:37							MDP-X:38			
			MDP-X:39							MDP-X:40			
			MDP-X:41							MDP-X:42			
			TOTAL LOAD:	90 kVA		90 kVA		90 kVA					
			TOTAL AMPS:	323 A		323 A		323 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
				CONNECTED LOAD:	268650 VA
				ESTIMATED DEMAND:	268650 VA
				CONNECTED CURRENT:	323 A
				EST. DEMAND CURRENT:	323 A

NOTES:

PANELBOARD: PC-1B

LOCATION: ELECTRICAL ROOM 1-168 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 100 A MLO **SPECIAL:** EXISTING PANEL
BUS AMPS: 100 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
Lighting-corridor 163	20 A	1	PC-1B:1	0.3	0.6					PC-1B:2	1	20 A	Lites-164,155,154,153,144,165
Lites- 161,162,167,166,170	20 A	1	PC-1B:3			0.4	0.4			PC-1B:4	1	20 A	Lites- 149,150,151,152
Lites-157,160,159,158	20 A	1	PC-1B:5					0.4	0.5	PC-1B:6	1	20 A	Lites- 148 Reception/ Waiting
Lites-172,173, Vestibule	20 A	1	PC-1B:7	0.7	0.9					PC-1B:8	1	20 A	RCPT-OFFICE 1-143
RCPT-OFFICE 1-142	20 A	1	PC-1B:9			0.9	0.2			PC-1B:10	1	20 A	lights- corridor 003 (N)
			PC-1B:11							PC-1B:12			
			PC-1B:13							PC-1B:14			
Spare	20 A	1	PC-1B:15			0.0	0.0			PC-1B:16	1	20 A	Spare
Spare	20 A	1	PC-1B:17					0.0	0.0	PC-1B:18	1	20 A	Spare
Spare	20 A	1	PC-1B:19	0.0	0.0					PC-1B:20	1	20 A	Spare
Spare	20 A	1	PC-1B:21			0.0	0.0			PC-1B:22	1	20 A	Spare
Spare	20 A	1	PC-1B:23					0.0	0.0	PC-1B:24	1	20 A	Spare
Spare	20 A	1	PC-1B:25	0.0	0.0					PC-1B:26	1	20 A	Spare
Spare	20 A	1	PC-1B:27			0.0	0.0			PC-1B:28	1	20 A	Spare
Spare	20 A	1	PC-1B:29					0.0	0.0	PC-1B:30	1	20 A	Spare
Spare	20 A	1	PC-1B:31	0.0	0.0					PC-1B:32	1	20 A	Spare
Spare	20 A	1	PC-1B:33			0.0	0.0			PC-1B:34	1	20 A	Spare
Spare	20 A	1	PC-1B:35					0.0	0.0	PC-1B:36	1	20 A	Spare
Spare	20 A	1	PC-1B:37	0.0	0.0					PC-1B:38	1	20 A	Spare
Spare	20 A	1	PC-1B:39			0.0	0.0			PC-1B:40	1	20 A	Spare
Spare	20 A	1	PC-1B:41					0.0	0.0	PC-1B:42	1	20 A	Spare
			TOTAL LOAD:	3 kVA		2 kVA		1 kVA					
			TOTAL AMPS:	22 A		17 A		7 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
Lighting	3158 VA	100.00%	3158 VA		
RCPT	1800 VA	100.00%	1800 VA	**CONNECTED LOAD:**	5273 VA
				ESTIMATED DEMAND:	5273 VA
				CONNECTED CURRENT:	15 A
				EST. DEMAND CURRENT:	15 A

NOTES: (N)

PANELBOARD: SP-2B

LOCATION: ELEC 2-319 **VOLTAGE:** 120/208 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 225 A MAIN CB **SPECIAL:** EXISTING PANEL
BUS AMPS: 225 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
EXISTING LOAD	20 A	1	SP-2B:1	0.7	0.7					SP-2B:2	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	SP-2B:3			0.7	0.7			SP-2B:4	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	SP-2B:5					0.7	0.7	SP-2B:6	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	SP-2B:7	0.7	0.7					SP-2B:8	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	SP-2B:9			0.7	0.7			SP-2B:10	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	SP-2B:11					0.7	0.7	SP-2B:12	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	SP-2B:13	0.7	0.7					SP-2B:14	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	SP-2B:15			0.7	0.7			SP-2B:16	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	SP-2B:17					0.7	0.7	SP-2B:18	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	SP-2B:19	0.7	0.7					SP-2B:20	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	SP-2B:21			0.7	0.7			SP-2B:22	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	SP-2B:23					0.7	0.7	SP-2B:24	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	SP-2B:25	0.7	0.7					SP-2B:26	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	SP-2B:27			0.7	0.9			SP-2B:28	1	20 A	RCPT-LC, STAIRS (N)
TV SCREENS -320 (N)	20 A	1	SP-2B:29					0.6	0.4	SP-2B:30	1	20 A	LIGHTS- STUDY (N)
CASSETTE UNIT (N)	20 A	1	SP-2B:31	1.2	2.6					SP-2B:32	2	30 A	DFSS-2 (N)
			SP-2B:33				2.6			SP-2B:34	--	--	--
			SP-2B:35							SP-2B:36			
			SP-2B:37							SP-2B:38			
			SP-2B:39							SP-2B:40			
			SP-2B:41							SP-2B:42			
			TOTAL LOAD:	11 kVA		10 kVA		7 kVA					
			TOTAL AMPS:	94 A		86 A		55 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	6400 VA	100.00%	6400 VA		
Lighting	250 VA	100.00%	250 VA	**CONNECTED LOAD:**	27164 VA
RCPT	1500 VA	100.00%	1500 VA	**ESTIMATED DEMAND:**	27164 VA
				CONNECTED CURRENT:	75 A
				EST. DEMAND CURRENT:	75 A

NOTES: EXISTING PANEL. (N)(PROVIDE NEW CIRCUIT BREAKER.

PANELBOARD: MDP-Z

LOCATION: OFFICE 3-100 **VOLTAGE:** 480/277 Wye V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 22,000 AMPS SYMMETRICAL
MAIN DEVICE: 225 A MAIN CB **SPECIAL:**
BUS AMPS: 225 AMPS

LOAD DESCRIPTION	BKR	P	CKT	PHASE A kVA		PHASE B kVA		PHASE C kVA		CKT	P	BKR	LOAD DESCRIPTION
RTU-1 (EXISTING IN PH-C)	60 A	3	MDP-Z:1	13.3	13.3					MDP-Z:2	3	60 A	RTU-2 (EXISTING IN PH-C)
--	--	--	MDP-Z:3			13.3	13.3			MDP-Z:4	--	--	--
--	--	--	MDP-Z:5					13.3	13.3	MDP-Z:6	--	--	--
RTU-4 (ER)	40 A	3	MDP-Z:7	8.0	5.0					MDP-Z:8	3	25 A	RTU-6 (ER)
--	--	--	MDP-Z:9			8.0	5.0			MDP-Z:10	--	--	--
--	--	--	MDP-Z:11					8.0	5.0	MDP-Z:12	--	--	--
RTU-19 (ER)	40 A	3	MDP-Z:13	8.0	0.0					MDP-Z:14	1	20 A	Spare
--	--	--	MDP-Z:15			8.0	0.0			MDP-Z:16	1	20 A	Spare
--	--	--	MDP-Z:17					8.0	0.0	MDP-Z:18	1	20 A	Spare
Space	--	--	MDP-Z:19	0.0	0.0					MDP-Z:20	1	20 A	Spare
Space	--	--	MDP-Z:21			0.0	0.0			MDP-Z:22	1	20 A	Spare
Space	--	--	MDP-Z:23					0.0	0.0	MDP-Z:24	1	20 A	Spare
Space	--	--	MDP-Z:25	0.0	0.0					MDP-Z:26	1	20 A	Spare
Space	--	--	MDP-Z:27			0.0	0.0			MDP-Z:28	1	20 A	Spare
Space	--	--	MDP-Z:29					0.0	0.0	MDP-Z:30	1	20 A	Spare
Space	--	--	MDP-Z:31	0.0	0.0					MDP-Z:32	1	20 A	Spare
Space	--	--	MDP-Z:33			0.0	0.0			MDP-Z:34	1	20 A	Spare
Space	--	--	MDP-Z:35					0.0	0.0	MDP-Z:36	1	20 A	Spare
Space	--	--	MDP-Z:37	0.0	0.0					MDP-Z:38	3	30 A	SURGE PROTECTION
Space	--	--	MDP-Z:39			0.0	0.0			MDP-Z:40	--	--	--
Space	--	--	MDP-Z:41					0.0	0.0	MDP-Z:42	--	--	--
			TOTAL LOAD:	48 kVA		48 kVA		48 kVA					
			TOTAL AMPS:	172 A		172 A		172 A					

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	79811 VA	100.00%	79811 VA		
				CONNECTED LOAD:	142751 VA
				ESTIMATED DEMAND:	142751 VA
				CONNECTED CURRENT:	172 A
				EST. DEMAND CURRENT:	172 A

NOTES: NEW PANEL. (EXISTING IN PHASE-C) . (ER- EXISTING LOAD TO BE REFEED FROM NEW CIRCUIT BREAKERS, PROVIDE NEW CB)

DISTRICT 99
COMMUNITY HIGH SCHOOL DISTRICT 99

Wight

Wight & Company
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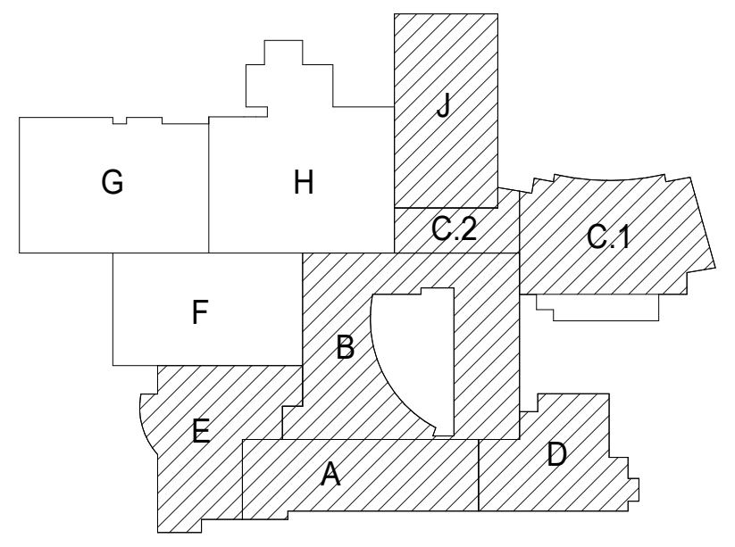


NORTH

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

SCHEDULES

Project Number:
5274-42
Drawn By:
Author
Sheet:

E6.04c

ADVANCE LIGHTING CONTROL SEQUENCE OF OPERATION

ROOM TYPE	SEQUENCE OF OPERATION
OFFICES WITH DAYLIGHTING, SMALL GROUP, COMPUTER LAB, IT TECH SUPPORT	1) OCCUPANCY OPERATION IS IN VACANCY MODE (MANUAL ON/AUTO OFF) 2) OCCUPANCY SENSORS DIM TO OFF TO BE SET AT 20 MINS / IDLE TIME TO DIM TO 50% IS AT 10 MINS 3) DAYLIGHT HARVESTING TO MAINTAIN LIGHT LEVEL TO ADEQUATELY ILLUMINATE THE SPACE IN DAYLIGHTING ZONES 4) MANUAL ON/OFF RAISE/LOWER 5) SWITCH PRIORITY LEFT AT PERMANENT SO LIGHTS WILL MANUAL ON WHERE LIGHT LEVELS WERE LEFT AT BY END USER. 6) ALL EM FIXTURES LIGHTING TO BE CONTROLLED AND IF POWER LOSS THE FIXTURES WILL BYPASS ANY OFF OR DIM LEVEL TO 100% PER UL924
OFFICES WITHOUT DAYLIGHTING / STUDY/ MOTHERS/ SENSORY FRIENDS	1) OCCUPANCY OPERATION IS IN VACANCY MODE (MANUAL ON/AUTO OFF) 2) OCCUPANCY SENSORS DIM TO OFF TO BE SET AT 20 MINS / IDLE TIME TO DIM TO 50% IS AT 10 MINS 3) MANUAL ON/OFF RAISE/LOWER 4) SWITCH PRIORITY LEFT AT PERMANENT SO LIGHTS WILL MANUAL ON WHERE LIGHT LEVELS WERE LEFT AT BY END USER. 5) ALL EM FIXTURES LIGHTING TO BE CONTROLLED AND IF POWER LOSS THE FIXTURES WILL BYPASS ANY OFF OR DIM LEVEL TO 100% PER UL924
CONFERENCE ROOMS/ MULTIPURPOSE ROOM	1) OCCUPANCY OPERATION IS IN VACANCY MODE (MANUAL ON/AUTO OFF) TO 30 FC 2) OCCUPANCY SENSORS DIM TO OFF TO BE SET AT 20 MINS / IDLE TIME TO DIM TO 50% IS AT 10 MINS 3) DAYLIGHT HARVESTING TO MAINTAIN LIGHT LEVEL TO ADEQUATELY ILLUMINATE THE SPACE IN DAYLIGHTING ZONES 4) MANUAL ON/OFF RAISE/LOWER WITH 2 SCENES. 5) SWITCH PRIORITY CHANGED TO TEMPORARY OVERRIDE SO LIGHTS MANUAL TURN ON TO 30FC. 6) 2 SCENES SET FOR SPACE 1) AV HIGH =AV ZONE OFF AND ROOM AT 50% 2) AV ZONE OFF AND ROOM AT 5% 7) ALL EM FIXTURES LIGHTING TO BE CONTROLLED AND IF POWER LOSS THE FIXTURES WILL BYPASS ANY OFF OR DIM LEVEL TO 100% PER UL924
CLASSROOM ROOMS	1) OCCUPANCY OPERATION IS IN VACANCY MODE (MANUAL ON/AUTO OFF) TO 30 FC 2) OCCUPANCY SENSORS DIM TO OFF TO BE SET AT 20 MINS / IDLE TIME TO DIM TO 50% IS AT 10 MINS 3) DAYLIGHT HARVESTING TO MAINTAIN LIGHT LEVEL TO ADEQUATELY ILLUMINATE THE SPACE IN DAYLIGHTING ZONES 4) MANUAL ON/OFF RAISE/LOWER WITH 2 SCENES 5) SWITCH PRIORITY CHANGED TO TEMPORARY OVERRIDE SO LIGHTS MANUAL TURN ON TO 30FC. 6) 4 SCENES SET FOR SPACE 1) AV HIGH =AV ZONE OFF AND ROOM AT 50% 2) AV ZONE OFF AND ROOM AT 5% 7) ALL EM FIXTURES LIGHTING TO BE CONTROLLED AND IF POWER LOSS THE FIXTURES WILL BYPASS ANY OFF OR DIM LEVEL TO 100% PER UL924
OPEN OFFICE / TEEN/ GRAPHICS	1) WHEN OCCUPANCY IS SENSED, LIGHTS WILL TURN ON TO 30 FC. 2) OCCUPANCY SENSORS DIM TO OFF TO BE SET AT 20 MINS / IDLE TIME TO DIM TO 50% IS AT 10 MINS 3) MANUAL ON/OFF ONLY, ON SET TO 30FC 4) SWITCH PRIORITY CHANGED TO TEMPORARY OVERRIDE SO LIGHTS MANUAL TURN ON TO 30FC. 5) DAYLIGHT HARVESTING TO MAINTAIN LIGHT LEVEL TO ADEQUATELY ILLUMINATE THE SPACE IN DAYLIGHTING ZONES 6) ALL EM FIXTURES LIGHTING TO BE CONTROLLED AND IF POWER LOSS THE FIXTURES WILL BYPASS ANY OFF OR DIM LEVEL TO 100% PER UL924
CORRIDORS, LOBBY	1) LIGHTS WILL TURN ON TO 25FC WHEN OCCUPANCY IS SENSED, ONLY EM LIGHT WILL STAY OF AFTER SCHOOL HOURS AS NIGHT LIGHT 2) ON/OFF MANUAL CONTROL BY KEY SWITCH AT THE END OF THE CORRIDOR. 3) ALL EM FIXTURES LIGHTING TO BE CONTROLLED AND IF POWER LOSS THE FIXTURES WILL BYPASS ANY OFF OR DIM LEVEL TO 100% PER UL924 4) DAYLIGHT HARVESTING TO MAINTAIN LIGHT LEVEL TO ADEQUATELY ILLUMINATE THE SPACE IN DAYLIGHTING ZONES WHERE DAY LIGHTING AVAILIBLE 5) ALL THE F-6 TYPE OF SUN LIGHTS IN GROUP IN THE MAIN COMMONS CORRIDOR TO BE DIMMED AS A ZONE SEPERATE FROM THE F-1 TYPE OF 2X2 LIGHTS.
CAFETERIA	1) LIGHTS WILL TURN ON TO 30FC WHEN OCCUPANCY IS SENSED, ONLY EM LIGHT WILL STAY OF AFTER SCHOOL HOURS AS NIGHT LIGHT 2) MASTER CONTROL TOUCH SCREEN IN THE CAFETERIA AREA. - CONTROL SCREEN TO HAVE 4 CHANNELS FOR THE CAFETERIA AREA (A- SUN LIGHTS -CAFE, B-2X2 LIGHTS CAFE, C-HIGH CEILING FOR COMMONS, D-LOW CEILING LIGHTS FOR COMMONS) - CONTROL SCREEN TO HAVE 4 SCENES FOR CAFETERIA AREA (A- 80% INTENSITY FOR SUN LIGHTS AND 50% FOR 2X2, B- 50% FOR 2X2 AND 80% FOR SUN LIGHTS, C- 100% OF SUN AND 100% FOR 2X2, D- ALL OFF) 3) ALL EM FIXTURES LIGHTING TO BE CONTROLLED AND IF POWER LOSS THE FIXTURES WILL BYPASS ANY OFF OR DIM LEVEL TO 100% PER UL924
TOILETS AND RESTROOMS	1) WHEN OCCUPANCY IS SENSED, LIGHTS WILL TURN ON TO 20FC. 2) OCCUPANCY SENSORS DIM TO OFF TO BE SET AT 20 MINS / IDLE TIME TO DIM TO 50% IS AT 10 MINS 3) ALL EM FIXTURES LIGHTING TO BE CONTROLLED AND IF POWER LOSS THE FIXTURES WILL BYPASS ANY OFF OR DIM LEVEL TO 100% PER UL924 4) CONTROL EXHAUST FANS IF PRESENT. COORDINATE WITH HVAC DRAWINGS FOR PROVISION OF AUXILLARY CONTACTS FOR CONTROL. 5) MANUAL ON/OFF VIA KEY SWITCH.
STORAGE SPACE, CAFE, ELECTRICAL, MECH, KITCHENETTE	1) WHEN OCCUPANCY IS SENSED, LIGHTS WILL TURN ON TO 20FC. 2) OCCUPANCY SENSORS DIM TO OFF TO BE SET AT 20 MINS / IDLE TIME TO DIM TO 50% IS AT 10 MINS 3) ALL EM FIXTURES LIGHTING TO BE CONTROLLED AND IF POWER LOSS THE FIXTURES WILL BYPASS ANY OFF OR DIM LEVEL TO 100% PER UL924 4) CONTROL EXHAUST FANS IF PRESENT.COORDINATE WITH HVAC DRAWINGS FOR PROVISION OF AUXILLARY CONTACTS FOR CONTROL. 5) MANUAL ON/OFF RAISE/LOWER
LARGE MEETING ROOM	1) OCCUPANCY OPERATION IS IN VACANCY MODE (MANUAL ON/AUTO OFF) TO 30 FC 2) OCCUPANCY SENSORS DIM TO OFF TO BE SET AT 20 MINS / IDLE TIME TO DIM TO 50% IS AT 10 MINS 3) DAYLIGHT HARVESTING TO MAINTAIN LIGHT LEVEL TO ADEQUATELY ILLUMINATE THE SPACE IN DAYLIGHTING ZONES 4) SCENES SET FOR SPACE 1) AV HIGH =AV ZONE OFF AND ROOM AT 50% 2) AV ZONE OFF AND ROOM AT 5% 5) SWITCH PRIORITY CHANGED TO TEMPORARY OVERRIDE SO LIGHTS MANUAL TURN ON TO 30FC. 6) 4 SCENES SET FOR SPACE 1) AV HIGH =AV ZONE OFF AND ROOM AT 50% 2) AV ZONE OFF AND ROOM AT 5% 3) AV ZONE OFF ROOM LIGHTS AT 5% AND COVE LIGHT AT 20% 4) AV ZONE ON AT 50% REST OF THE ROOM LIGHTS AT 10% 7) ALL EM FIXTURES LIGHTING TO BE CONTROLLED AND IF POWER LOSS THE FIXTURES WILL BYPASS ANY OFF OR DIM LEVEL TO 100% PER UL924 8) ALL THE CONTROLS FOR THE LARGE MEETING ROOM TO BE THROUGH THE LED SCREEN, KEY SWITCH TO OVERRIDE ON/OFF OF ALL THE LIGHTS IN THE ROOM.
LEARNING COMMONS	1) OCCUPANCY OPERATION IS IN VACANCY MODE (MANUAL ON/AUTO OFF) TO 30 FC 2) OCCUPANCY SENSORS DIM TO OFF TO BE SET AT 20 MINS / IDLE TIME TO DIM TO 50% IS AT 10 MINS 3) DAYLIGHT HARVESTING TO MAINTAIN LIGHT LEVEL TO ADEQUATELY ILLUMINATE THE SPACE IN DAYLIGHTING ZONES 4) SWITCHING ON/OFF MANUAL CONTROL OF THE LIGHTS IN THE SPACE THROUGH A PASSWORD PROTECTED LED TOUCH SCREEN. LED SCREEN TO BE A PROGRAMMABLE MULTI SCENE LED. 5) MASTER CONTROL TOUCH SCREEN IN MAIN LOBBY OR BEHIND RECEPTION TO CONTROL LIGHTS - CONTROL SCREEN TO HAVE 2 CHANNELS FOR THE COMMONS AREA (C-HIGH CEILING FOR COMMONS, D-LOW CEILING LIGHTS FOR COMMONS) - CONTROL SCREEN TO HAVE 4 SCENES FOR COMMONS AREA (A- 100% INTENSITY FOR HIGH CEILING LIGHTS AND 100% FOR LOW CEILING LIGHTS , B- 80% FOR HIGH CEILING AND 80% FOR LOW CELING, C- 80% FOR HIGH CEILING AND 50% FOR LOW CEILING , D- ALL OFF) - ALL THE F-6 TYPE OF SUN LIGHT COMBINATIONS TO BE CAPABLE TO DIMMED SEPERATE FROM THE F-1 TYPE OF LIGHTS IN THE LOW CEILING COMMONS. 6) ALL EM FIXTURES LIGHTING TO BE CONTROLLED AND IF POWER LOSS THE FIXTURES WILL BYPASS ANY OFF OR DIM LEVEL TO 100% PER UL924
LEARNING RESOURCE CENTER/ LIBRARY	1) LIGHTS IN THE LIBRARY TO REMAIN ON DURING SCHOOL HOURS. 2) OCCUPANCY SENSORS IN VACANCY MODE TO DIM THE LIGHTS TO 50% WHEN NO OCCUPANCY IS SENSED, BACK TO SET INTENSITY ONCE OCCUPANCY IS SENSED. 3) MASTER CONTROL TOUCH SCREEN NEAR THE LIBRARIANS DESK. - CONTROL SCREEN TO HAVE 5 CHANNELS FOR THE CAFETERIA AREA (A- LIBRARIANS DESK AREA -CAFE, B-LIBRARY SEATING AREA 1 , C- LIBRARY SEATING AREA 2, D-BOOKS AREA, E- HIGH CEILING AREA) - CONTROL SCREEN TO HAVE 4 SCENES FOR THE LIBRAR YAREA (A- ALL LIGHTS ON AT 100%, B-ALL LIGHTS ON AT 80%, C- ALL LIGHTS ON AT 50%, D- ALL LIGHTS OFF) 4) NO OCCUPANCY TO SLOW FADE THE LIGHTS TO 50% DURING SCHOOL HOURS WITHIN 25 MINS. NO OCCUPANCY AFTER SCHOOL HOURS TO TURN OFF THE LIGHTS, EM TO REMAIN ON AS NIGH LIGHTS. 5) DAYLIGHT HARVESTING TO MAINTAIN LIGHT LEVEL TO ADEQUATELY ILLUMINATE THE SPACE IN DAYLIGHTING ZONES 6) SWITCHING ON/OFF MANUAL CONTROL OF THE LIGHTS IN THE SPACE THROUGH A PASSWORD PROTECTED LED TOUCH SCREEN. LED SCREEN TO BE A PROGRAMMABLE MULTI SCENE LED. LIBRARY TO HAVE 5 SCENES. 7) MANUAL ON/OFF ALSO VIA KEY SWITCH.
STAIRS	1) LIGHTS TO REMAIN ON AT ALL THE TIME.

ALL ROOMS DIM EVEN IF IT HAS A ON/OFF ONLY SWITCH, TUNE THE LIGHT LEVEL FOR ENERGY SAVING LEVEL.

FACTORY PROGRAMMING AND CALIBRATION OF LIGHTING LEVELS AND CONTROL SEQUENCES

3 MONTH FACTORY FOLLOWUP TRAINING AND TUNING VISIT TO DIAL IN LIGHT LEVELS AND ADDRESS ANY FURTHER CONTROL OPTIONS.

THESE DRAWINGS DO NOT SHOWN ALL REQUIRED PARTS LIKE POWER PACKS/ RELAYS ETC. FOR COMPLETE WORKING SYSTEM, CONTRACTOR SHALL PROVIDE SHOP DRAWINGS PER SPECIFICATION AND GUIDELINE.

SHOP DRAWINGS SHALL INCLUDE OCCUPANCY AND DAYLIGHT ZONE COVERAGE MAPS TO VERIFY PROPER OPERATION. CONTRACTOR SHALL BE REPONSIBLE FOR COMPLETE WORKING SYSTEM TO MEET IECC 2015 AND PART EVEN ITS NOT SHOWN IN THESE DRAWINGS.

ALL FIXTURES SHALL BE ZONED FOR THE USE LISTED BELOW BUT NOT LIMITED TO;
- CLASSROOMS, CONFERENCE ROOMS, MUSIC ROOMS, SCIENCE ROOMS SHALL BE 2 ZONES
- ACCENT LIGHTS FOR CABINETS
- CORRIDORS
- EXTERIOR LIGHTS
- PARKING LOT LIGHTS
- GROW LIGHTS
- CAN LIGHTS ABOVE SEATING
- PENDANT LIGHTS IN STUDENT COMMON AREA

LIGHTING FIXTURE SCHEDULE

TYPE MARK	DESCRIPTION	MOUNTING	LAMP	WATTAGE	VOLTAGE	MANUFACTURER/ CATALOG NUMBER	APPROVED EQUAL 1	APPROVED EQUAL 2	NOTES
F-1	2X2 LED LOW PROFILE	RECESSED	LED	26 W	MVOLT	LITHONIA / EPANL 22 4000L-40LHE 35K-3500K-120-277V-0-10V	VENTURE LED	TRULY GREEN ECO PANEL	DRIVER TO BE 0-10V DIMMING
F-1B	2X2 LED LOW PROFILE	RECESSED	LED	40 W	MVOLT	LITHONIA / EPANL 22 4800L 35K-3500K-120-277V-0-10V	VENTURE LED	TRULY GREEN ECO PANEL	DRIVER TO BE 0-10V DIMMING
F-2	2X4 LED LOW PROFILE	RECESSED	LED	40 W	MVOLT	LITHONIA / EPANL 24 48L 35K-3500K-120-277V-0-10V	VENTURE LED	TRULY GREEN ECO PANEL	DRIVER TO BE 0-10V DIMMING
F-4	RECESSED DOWNLIGHT	RECESSED	LED	29 W	MVOLT	GOTHAM 4" EVO / EVO-35/25-4AR-MWD-LSS-MVOLT-EZ1	INDY SDSQ4	PORTFOLIO LSDQ4A	PROVIDE DRY WALL FLANGE WHERE DRWALL CEILING. REFER TO ARCHITECTURAL DRAWING FOR CEILING TYPES
F-4B	RECESSED DOWNLIGHT	RECESSED	LED	29 W	MVOLT	GOTHAM 4" EVO / EVO-40/20-4AR-MWD-LSS-MVOLT-EZ1	INDY SDSQ4	PORTFOLIO LSDQ4A	PROVIDE DRY WALL FLANGE WHERE DRWALL CEILING. REFER TO ARCHITECTURAL DRAWING FOR CEILING TYPES
F-5	LED STRIPLIGHT	PENDANT	LED	34 W	MVOLT	LITHONIA / ZLIN LED STRILIGHT- L48- SMR- 5000LM-FST-MVOLT-3500K-90CRI-WH	HUBBELL MPS		INCLUDE PENDANT MOUNTING KIT.
F-6A	LINEAR SEMI DIRECT	SURFACE	LED	18 W	UNV	PRUDENTIAL SNAP / S1-LED35K-SO-2-SAL-TMW-UNV-DM01	AXIS PRIME SQUARE		PROVIDE BOTH MOUNTING TYPES X1(FOR EXPOSED T-BAR) AND X3 (FOR HARD CEILING) FOR LIGHTING FIXTURES MOUNTED ON BOTH TYPE OF CEILINGS. CONTRACTOR TO VERFIY THE EXACT QUANTITIES FROM ARCHITECTS REFLECTED CEILING PLANS.
F-6B	LINEAR SEMI DIRECT	SURFACE	LED	36 W	UNV	PRUDENTIAL SNAP / S1-LED35K-SO-4-SAL-TMW-UNV-DM01	AXIS PRIME SQUARE		PROVIDE BOTH MOUNTING TYPES X1(FOR EXPOSED T-BAR) AND X3 (FOR HARD CEILING) FOR LIGHTING FIXTURES MOUNTED ON BOTH TYPE OF CEILINGS. CONTRACTOR TO VERFIY THE EXACT QUANTITIES FROM ARCHITECTS REFLECTED CEILING PLANS.
F-6C	LINEAR SEMI DIRECT	SURFACE	LED	54 W	UNV	PRUDENTIAL SNAP / S1-LED35K-SO-6-SAL-TMW-UNV-DM01	AXIS PRIME SQUARE		PROVIDE BOTH MOUNTING TYPES X1(FOR EXPOSED T-BAR) AND X3 (FOR HARD CEILING) FOR LIGHTING FIXTURES MOUNTED ON BOTH TYPE OF CEILINGS. CONTRACTOR TO VERFIY THE EXACT QUANTITIES FROM ARCHITECTS REFLECTED CEILING PLANS.
F-6D	LINEAR SEMI DIRECT	SURFACE	LED	72 W	UNV	PRUDENTIAL SNAP / S1-LED35K-SO-8-SAL-TMW-UNV-DM01	AXIS PRIME SQUARE		PROVIDE BOTH MOUNTING TYPES X1(FOR EXPOSED T-BAR) AND X3 (FOR HARD CEILING) FOR LIGHTING FIXTURES MOUNTED ON BOTH TYPE OF CEILINGS. CONTRACTOR TO VERFIY THE EXACT QUANTITIES FROM ARCHITECTS REFLECTED CEILING PLANS.
F-7	2X2 LED	RECESSED	LED	32 W	MVOLT	LITHONIA / 2BLT2-40L-ADPT-MVOLT-EZ1-LP935	FINELITE HPR	METALUX CZ	
F-15	EXTERIOR WALL LIGHT	SURFACE MOUNT	LED	19.5 W	MVOLT	BEGA / 22 433-2S-3W-LED-4000K-MVOLT			REFER TO ARCHITECTS DRAWING FOR EXACT MOUNTING REQUIREMENTS. FINISH PER ARCHITECTS SELECTION.
F-18	LINEAR PENDANT DIRECT/ INDIRECT DIMMABLE	PENDANT	LED	39 W	MVOLT	AXIS BEAM 4/ BBDLED-300UP/750DOWN-90-35-SO-4-W-UNV-DP	WILLIAM MX4UD		DRIVER TO BE 0-10V DIMMING. REFER TO ARCHITECTURAL DRAWINGS FOR SUSPENSION LENGTH. VERIFY FIXTURE LENGTH WITH THE ARCHITECT PRIOR TO ORDER.
F-24	NOT USED	-	-	-	-	-	-	-	39
F-25A	RECESSED LINEAR LED	RECESSED/ FLUSH	LED	24 W	UNV	MARK SLOT 4 LED/ SL4L-4FT-FLP-TG-90CRI-35K-600LMF-MIN10-120V-ZT	H.E WILLIAMS L4 SERIES	NULITE REGOLO 4	4' LIGHTING FIXTURE.
F-25B	RECESSED LINEAR LED	RECESSED/ FLUSH	LED	36 W	UNV	MARK SLOT 4 LED/ SL4L-6FT-FLP-TG-90CRI-35K-600LMF-MIN10-120V-ZT	H.E WILLIAMS L4 SERIES	NULITE REGOLO 4	6' LIGHTING FIXTURE.
F-29	LUMENCOVE 2.0	SURFACE UP	LED	96 W	UNV	LUMENPULSE/ LCS2HO-120V-96-35K-CL-WH-DIM-8 FEET LENGTH			0-10V DIMMING DRIVER, FINISH PER ARCHITECTS SELECTION. HIGH OUTPUT LUMEN FIXTURE. REFER TO ARCHITECTS DRAWING FOR EXACT MOUNTING LOCATION, AND POINTING ANGLE.
F-29B	LUMENCOVE 2.0	SURFACE UP	LED	96 W	UNV	LUMENPULSE/ LCS2HO-120V-72-35K-CL-WH-DIM-6 FEET LENGTH			0-10V DIMMING DRIVER, FINISH PER ARCHITECTS SELECTION. HIGH OUTPUT LUMEN FIXTURE. REFER TO ARCHITECTS DRAWING FOR EXACT MOUNTING LOCATION, AND POINTING ANGLE.
F-30	GOTHAM 6" INCOTO CYLINDER	PENDANT	LED	104 W	UNV	GOTHAM/CL CYL-3500K-8500 LUMENS-GAR-LSS-60D-MVOLT-EZB-PM-DWHG			REFER TO ARCHITECTURAL DRAWING FOR EXACT MOUNTING ELEVATION FOR THE FIXTURES.
F-31	ECOSENSE TROVE L50 GRAZE LIGHT FOR INTERIOR	PER ARHC. DETAIL	LED	20 W	UNV	ECOSENSE TROV/ L50-I- LENGTH PER ARCH DRAWINGS- 06-35-90-MVOLT			PROVIDE FINE ADJUSTABLE BRACKET, MOUNTING PER ARCHITECTURAL DETAILS.
EX1	EXIT SIGN LIGHT	RECESSED	LED	5 W	MVOLT	LITHONIA EDG/EDGR-BRUSHED ALUMINUM- 1/2- RMR-EL			90 MINUTE BATTERY BACK-UP. PROVIDE CHEVRONS PER DRAWING.
EX2	EXIT SIGN LIGHT-AUDITORIUM	SURFACE	LED	5 W	MVOLT	LITHONIA EDG-BRUSHED ALUMINIUM-1-GMR-EL			90 MINUTE BATTERY BACK-UP. GREEN COLOR IN AUDITORIUM.

NOTE :
1) REFER TO ARCHITECTURAL DRAWINGS AND DETAILS FOR EXACT LENGTH, QUANTITY, AND MOUNTING TYPE OF THE LIGHT FIXTURES.
2) ALL THE LIGHTING FIXTURES 0-10V DIMMING.
3) FIXTURES LISTED IN THE SCHEDULE ARE BASIS OF DESING, ANY SUBSTITUTION SHALL BE APPROVED BY THE ARCHITECT AND THE ENGINEER.
4) CONTRACTOR SHALL SEE ARCHITECTURAL DRAWINGS FOR HEIGHTS, LOCATIONS, AND QUANTITIES. IF ANY CONFLICT, CONTRACTOR SHALL PROVIDE AND INSTALL PER ARCHITECTURAL DRAWINGS AND USE ELECTRICAL DRAWINGS FOR CIRCUITING AND SWITCHING.
5) CONTRACTOR SHALL REVIEW ARCHITECTURAL DRAWINGS FOR CEILING TYPES, FIXTURES SHALL BE ORDERED WITH PROPER TRIM MATCHING THE CEILING TYPES.
6) ACUITY NLIGHT CONTROL SYSTEM IS BASIS OF DESIGN, CONTRACTOR SHALL PROVIDE ALL WORKING PARTS NECESSARY FOR COMPLETE WORKING SYSTEM INCLUDING FACTORY START UP AND OWNER TRAINING.
7) LIGHTING CONTROL DEVICES SHOWN ARE FOR GRAPHICAL PURPOSE ONLY, CONTRACTOR SHALL FOLLOW MANUFACTURER REQUIREMENTS, ADJUST SENSOR AS REQUIRED.
8) CONTINUOUS LINEAR FIXTURES SHALL HAVE CONTINUOUS LENSES. CONTRACTOR SHALL PROVOIDE FACTORY SHOP DRAWINGS FOR EACH TYPE PRIOR TO ORDER.
9) ALL THE SWITCHES IN THE CORRIDOR SHALL BE KEYED TYPE SWITCHES.
10) EXTERIOR LIGHTS SHALL BE CONTROLLED BY TIME CLOCK. 39
11) REFER TO THEATRE CONSULTANTS LIGHTING FIXTURE SCHEDULE FOR ALL THE THEATRE LIGHTS AND ADDITIONAL INFORMATION.
12) ALL THE LIGHTING FIXTURES IN THE LD SERIES DRAWINGS FOR THE THEATRE NEED TO BE CIRCUITED AND CONTROLLED PER THEATRE CONSULTANTS SCHEDULES. REFER TO THEATRE CONSULTANT DRAWINGS FOR DETAILS AND ADDITIONAL SCOPE OF WORK.

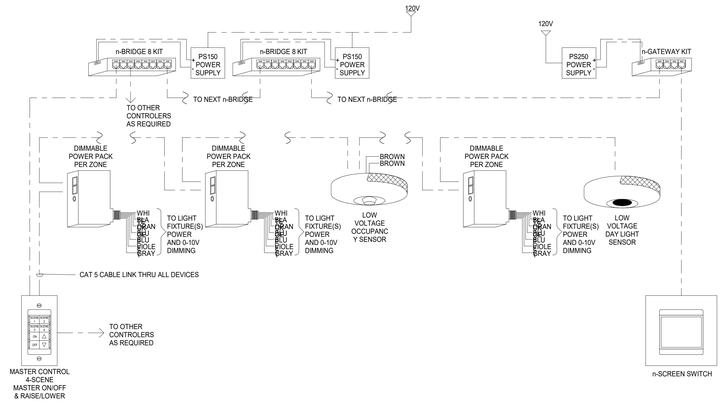
LIGHTING CONTROL SYMBOL LEGEND

$^{A}S_{S}$	nWSX PDT LV - WALL SWITCH DECORATOR SENSOR, PASSIVE INFRARED, LOW VOLTAGE
$^{B}S_{S}$	nWSX PDT LV DX - WALL SWITCH DECORATOR SENSOR, DUAL TECHNOLOGY, DIMMING, LOW VOLTAGE
$^{K}S_{S}$	nPOD KEY - KEYED WALL SWITCH, LOW VOLTAGE
$^{C}S_{S}$	nPODM - 1 CHANNEL ON/OFF TOGGLE, LOW VOLTAGE
$^{D}S_{S}$	nPODM DX - 1 CHANNEL ON/OFF TOGGLE WITH DIMMING, LOW VOLTAGE
$^{2S}S_{S}$	nPODM 2S DX - 2 CHANNEL ON/OFF TOGGLE WITH DIMMING, LOW VOLTAGE
$^{4S}S_{S}$	nPODM 4S DX - 4 CHANNEL ON/OFF TOGGLE WITH DIMMING, LOW VOLTAGE
G_{S}	nGWY2 L400 KIT WITH nGWY2 CTRL L400 UNIT, nGATEWAY 2 GFX, PS250 (250mA POWER SUPPLY), SENSORVIEW SOFTWARE
nPP 16	nPP16 - POWER/RELAY PACK:16A 120/277VAC
nPP 16D	nPP16 D - POWER/RELAY PACK:16A 120/277VAC WITH 0-10VDC DIMMING
nPP 16E	nPP16 (D) ER - EMERGENCY POWER/RELAY PACK:16A 120/277VAC WITH 0-10VDC DIMMING
nPP 16P	nSPS PCD - SECONDARY POWER/RELAY PACK:16A 120/277VAC, TYPE(S) : 2-WIRE, 3-WIRE, MAGNETIC LOW OR ELECTRONIC LOW VOLTAGE(120V) DIMMING.
^{A}OS	nCM PDT 9 RJB - SMALL MOTION 360 SENSOR, CEILING MOUNT,REAR RJ-45 PORT, DUAL TECHNOLOGY (PDT), LOW VOLTAGE
^{B}OS	nCM PDT 10 RJB - LARGE MOTION 360 SENSOR, CEILING MOUNT,REAR RJ-45 PORT, DUAL TECHNOLOGY (PDT), LOW VOLTAGE
^{C}OS	nCM 6 RJB - HIGH MOUNT 360 SENSOR, CEILING MOUNT,REAR RJ-45 PORT, LOW VOLTAGE
$^{D}OS_{DX}$	nCM PDT 9 RJB ADCX - SMALL MOTION 360 SENSOR, CEILING MOUNT,REAR RJ-45 PORT, DUAL TECHNOLOGY, LOW VOLTAGE, AUTO DIMMING CONTROL
$^{E}OS_{DX}$	nCM PDT 10 RJB ADCX - LARGE MOTION 360 SENSOR, CEILING MOUNT,REAR RJ-45 PORT, DUAL TECHNOLOGY, LOW VOLTAGE, AUTO DIMMING CONTROL
^{F}OS	nWV PDT 16 KIT - 120 WIDE VIEW SENSOR, DUAL TECHNOLOGY, LOW VOLTAGE WITH WV BR BRACKET
DS	nCM ACDX RJB - DAY LIGHT SENSOR ONLY, AUTO DIMMING CONTROL, CEILING MOUNT,REAR RJ-45 PORT, LOW VOLTAGE
^{6}OS	NCM 6 LOW VOLTAGE CEILING MOUNT SENSOR, HIGH BAY 360 DEGREE LENS
nPP ELV	ELV, NSP5 PCD ELV 120 SECONDARY RELAY PACK, PHASE CONTROL DIMMING, ELECTRONIC LOW VOLTAGE, 120VAC
nPS 80	nPS 80 NPS 80 POWER SUPPLY , 80 mA
nAR 40	nAR 40 NLIGHT AUXILLARY RELAY
TS	nLIGHT UNI TOUCH SCREEN WALL SWITCH nPADTOUCH WH (PROVIDE 120V POWER SUPPLY)
	nLIGHT - nWVPDT16 CORNER MOUNTED OCCUPANCY SENSOR. COORDINATE WITH MANUFACTURER FOR EXACT MOUNTING HEIGHT

NOTE: POWER PACKS AND RELAYS ARE NOT SHOWN ON THE DRAWINGS. CONTRACTOR TO PROVIDE PER MANUFACTURER REQUIREMENTS.

NOTE: POWER PACKS AND RELAYS ARE NOT SHOWN ON THE DRAWINGS. CONTRACTOR TO PROVIDE PER MANUFACTURER REQUIREMENTS.

- ACUITY CONTROL/N-LIGHT SYSTEM IS BASIS OF DESIGN. ANY SUBSITUTIONS SHALL BE PRE-APPROVED BY ARCHITECT/ENGINEER.
- CONTRACTOR SHALL COMMISION THE LIGHTING SYSTEM WITH 3RD PARTY CONSULTANT
- CONTRACTOR SHALL INCLUDE PROGRAMMING AND USER TRAINING FOR THE LIGHTING CONTROL SYSTEM.
- CONTROL SYSTEM SHALL MEET IECC 2015 ENERGY CODE IN ALL SCOPE OF WORK. SEE DESIGN GUIDE LINES IN DETAILS
- ALL PARTS AND WIRING NOT SHOWN IN DRAWINGS, CONTRACTOR SHALL PROVIDE AND INSTALL COMPLETE WORKING SYSTEM, INCLUDING ALL DEVICES, WIRING REQUIRED BY MANUFACTURER AND COMMISIONING AS REQUIRED BY IECC 2015.
- POWER PACK RELAYS ARE NOT SHOWN ON THIS DRAWING. THE POWER PACKS CAN BE LOCATED IN THE NEAREST ACCESSIBLE CEILING.
- PROVIDE NAR40 AUXILLARY CONTACT RELAYS FOR CONTROL OF EXHAUST FANS. REFER TO HVAC DRAWINGS AND DETAILS FOR EXACT QUANTITY AND LOCATION OF THE RELAYS FOR CONTROL.



4 N-LIGHT CONTROL- REFERENCE DETAIL
N.T.S.

NOTES:

1. DETAILS SHALL BE USED AS GUIDE LINE PURPOSE
2. N-LIGHT SYSTEM IS BASES OF DESIGN, CONTRACTOR SHALL PROVIDE AND INSTALL ALL REQUIRED PARTS PER DESIGN INTENT AND MANUFACTURER REQUIREMENTS
3. DESIGN INTENT AND SWITHING AND SENSORS SHOWNED IN THE LIGHTING PLAN, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH ALL REQUIRED PARTS. INITIAL BUDDING SHALL INCLUDE ALL MATERIAL AND LABOR COST.
4. CONTRACTOR SHALL PROVIDE 120V OR 277V POWER TO ALL NETWORKING DEVICES WHERE REQUIRED BY MANUFACTURER
5. SYSTEM SHALL BE TESTED, CALIBRATED. AND COMMISIONED.
6. FINAL LIGHTING LEVEL AND SCENE SHALL BE SET WITH ARCHITECT AND OWNER. CONTRACTOR SHALL MAKE SUCH ARRANGEMENT

DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

Wight & Company
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2500 North Frontage Road
Darien, IL 60561
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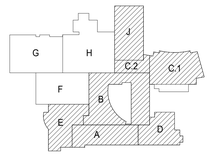


NORTH

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BGB	12.11.2019
	ISSUED FOR BID GROUP B - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019

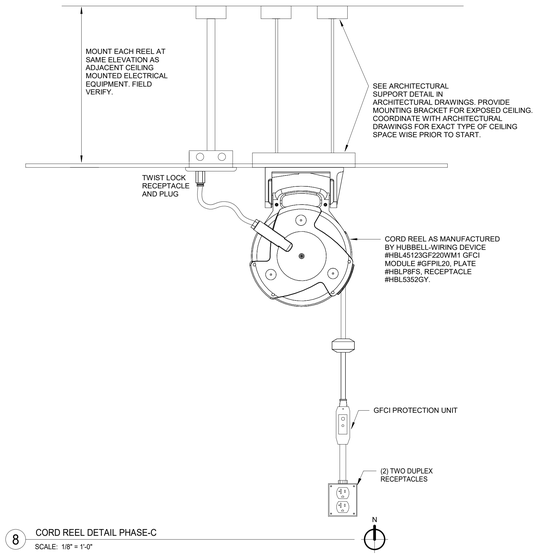
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

LIGHTING SCHEDULES

Project Number:
5274-42
Drawn By:
Author
Sheet:

E6.05C



8 CORD REEL DETAIL PHASE-C

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

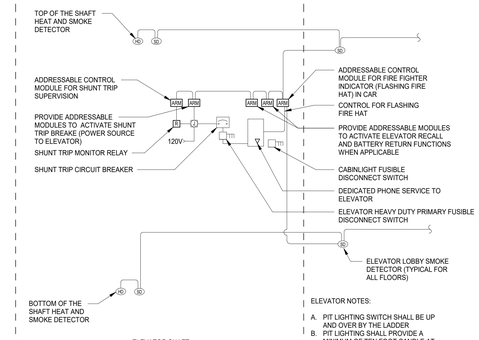
NEC-ELECTRICAL CODE FEEDER SCHEDULE

OCP AMPS	TABLE#1 3W + G			TABLE#2 4W + G		
	PHASE	GROUND	CONDUIT	PHASE	GROUND	CONDUIT
15	3 #12	1 #12	3/4"	4 #12	1 #12	3/4"
20	3 #12	1 #12	3/4"	4 #12	1 #12	3/4"
25	3 #10	1 #10	3/4"	4 #10	1 #10	3/4"
30	3 #10	1 #10	3/4"	4 #10	1 #10	3/4"
35	3 #8	1 #10	3/4"	4 #8	1 #10	3/4"
40	3 #8	1 #10	3/4"	4 #8	1 #10	3/4"
45	3 #6	1 #10	3/4"	4 #6	1 #10	1"
50	3 #6	1 #10	3/4"	4 #6	1 #10	1"
60	3 #4	1 #10	1"	4 #4	1 #10	1-1/4"
70	3 #4	1 #8	1"	4 #4	1 #8	1-1/2"
80	3 #3	1 #8	1-1/4"	4 #3	1 #8	1-1/2"
90	3 #2	1 #8	1-1/4"	4 #2	1 #8	1-1/2"
100	3 #3	1 #8	1-1/4"	4 #3	1 #8	1-1/2"
110	3 #2	1 #6	1-1/2"	4 #2	1 #6	1-1/2"
125	3 #1	1 #6	1-1/2"	4 #1	1 #6	1-1/2"
150	3 #1/0	1 #6	2"	4 #1/0	1 #6	2"
175	3 #2/0	1 #6	2"	4 #2/0	1 #6	2"
200	3 #3/0	1 #6	2"	4 #3/0	1 #6	2-1/2"
225	3 #4/0	1 #4	2-1/2"	4 #4/0	1 #4	2-1/2"
250	3 #250 KCMIL	1 #4	2-1/2"	4 #250 KCMIL	1 #4	2-1/2"
300	3 #350 KCMIL	1 #4	3"	4 #350 KCMIL	1 #4	3-1/2"
400	3 #600 KCMIL	1 #3	3"	4 #600 KCMIL	1 #3	3-1/2"
450	(2) 3 #4/0	1 #2	3" (EA)	(2) 4 #4/0	1 #2	3" (EA)
500	(2) 3 #250 KCMIL	1 #2	3" (EA)	(2) 4 #250 KCMIL	1 #2	3" (EA)
600	(2) 3 #350 KCMIL	1 #1	4" (EA)	(2) 4 #300 KCMIL	1 #1	4" (EA)
800	(2) 3 #600 KCMIL	1 #1/0	4" (EA)	(2) 4 #600 KCMIL	1 #1/0	4" (EA)
1000	(3) 3 #400 KCMIL	1 #2/0	4" (EA)	(3) 4 #400 KCMIL	1 #2/0	4" (EA)

THE TABLE IS BASED ON NEC-2017, TABLE 310.15(B)(16) FOR CABLE SIZES AND 250.122 FOR GROUNDING SIZE. 75DEGREE COPPER. GROUNDING SIZES ARE ONLY FOR EQUIPMENT AND NOT FOR SERVICE.

4 NEC WIRING SCHEDULE PHASE-C

N.T.S.



ELEVATOR NOTES:

A. PIT LIGHTING SWITCH SHALL BE UP AND OVER BY THE LADDER
B. PIT LIGHTING SHALL PROVIDE A MINIMUM OF TEN FOOT CANDLE AT THE PIT FLOOR AND AT THE PIT PLATFORM, WHEN PROVIDED
C. PROVIDE DEDICATED PHONE LAND LINE, COORDINATE WITH LOCAL AUTHORITIES
D. PROVIDE FIRE SMOKE SENSORS INTO ELEVATOR CONTROLLER WITH ALTERNATE FLOOR SENSORS, SHAFT, MACHINE ROOM AND ALL LOBBIES
E. PROVIDE FUSED MAINLINE DISCONNECT FOR ELEVATOR EQUIPMENT
F. PROVIDE SEPARATE FUSED LOCKABLE DISCONNECT SWITCH FOR CABIN LIGHTING
G. ELEVATOR SHUNT TRIP SHALL BE ACTIVATED PRIOR TO IN ONSET OF WATER FROM SPRINKLERS

NOTE:
VERIFY REQUIRED POWER CONNECTION, FIRE ALARM DEVICES AND LOCATION WITH TRACTION ELEVATOR WITHOUT MACHINE ROOM

DETAILS ARE SCHEMATIC AS IN NATURE, CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY EQUIPMENT FOR COMPLETE WORKING SYSTEM

ELEVATOR EQUIPMENT ROOM, PROVIDE WORK AS FOLLOWS:

A. PROVIDE TWO FOR FOOT LONG , LED STRIPLIGHT. FIXTURE TO MATCH BUILDING STANDARD. PROVIDE A SEPARATE DEDICATED BRANCH CIRCUIT FOR MACHINE ROOM SPACE LIGHTING AND RECEPTACLE PER NFPA 70, 1996, 620-23 TO LOCAL 120 VOLT PANELBOARD
B. PROVIDE A CEILING MOUNTED DUAL CONTACT SMOKE DETECTOR WITH ONE CONTACT WIRED TO THE LOCAL FIRE ALARM ZONE AND THE OTHER TO OPERATE THE ELEVATOR RECALL FUNCTION. THE ELEVATOR MANUFACTURER REQUIRES WIRING FROM THE SMOKE DETECTORS TO MACHINE ROOM CONTROLLER. PROVIDE A SET OF FORM "C" CONTACTS (NORMALLY OPEN - COMMON - NORMALLY CLOSED) FROM THE SMOKE DETECTOR AT DESIGNATED FIREMAN'S LANDING AND ONE SET OF FORM "C" CONTACTS REPRESENTING ALL OTHER SMOKE DETECTORS IN THE SYSTEM. REFERENCE ASME A17.1B - 1995 SAFETY CODE FOR ELEVATORS AND ESCALATORS RULE 211.3B.
C. PROVIDE A DUPLEX RECEPTACLE, GFCI TYPE. PROVIDE A SEPARATE DEDICATED BRANCH CIRCUIT FOR MACHINE ROOM SPACE LIGHTING AND RECEPTACLE PER NFPA 70, 1996, 620-23 TO LOCAL 120 VOLT PANELBOARD.
D. PROVIDE A SEPARATE DEDICATED BRANCH CIRCUIT FOR CAR LIGHTS AND RECEPTACLES. A DISCONNECT MEANS SHALL BE PROVIDED FOR CIRCUIT . THE DISCONNECT MEANS SHALL BE CAPABLE OF BEING LOCKED IN THE OPEN POSITION PER NFPA 70, 1996, 620-22 AND 620-53 HOMERUN CIRCUIT TO LOCAL 120 VOLT PANELBOARD.
E. PROVIDE TELEPHONE JACK AND PLATE OVER EXISTING OPENING WITH TELEPHONE CABLE BACK TO NETWORK POINT OF PRESENCE (NETPOP) FOR DIRECT CONNECTION TO A 24 HOUR EMERGENCY MONITORING SERVICE.
F. PROVIDE A 30 AMP(SIZE PER MANUFACTURER REQUIREMENTS), 3 POLE, 600 VOLT, FUSIBLE SAFETY SWITCH WITH FLEXIBLE CONNECTION TO ELEVATOR CONTROLLER. PROVIDE FUSES (LPN-RK) SIZED PER EQUIPMENT MANUFACTURERS RECOMMENDATION. PROVIDE SELECTIVE COORDINATION OF FUSES PER NFPA 70, 620-6

AT ELEVATOR SHAFT AND PIT, PROVIDE WORK AS FOLLOWS:

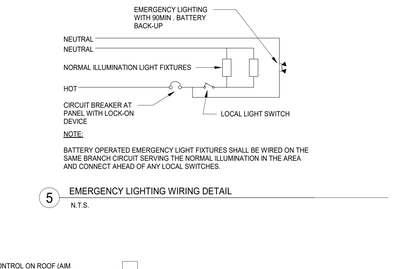
A. IN PIT PROVIDE LIGHTING SWITCH AND PIT LIGHTING FIXTURE (JELLY JAR) WITH WIRE GUARD, LED LAMP. PROVIDE A SEPARATE DEDICATED BRANCH CIRCUIT FOR HOISTWAY PIT LIGHTING AND RECEPTACLE PER NFPA 70, 1996, 620-24 TO LOCAL 120 VOLT PANELBOARD.
B. PROVIDE A DUAL CONTACT SMOKE DETECTOR AT TOP OF SHAFT WITH ONE CONTACT WIRED TO THE LOCAL FIRE ALARM ZONE AND THE OTHER TO OPERATE THE ELEVATOR RECALL FUNCTION. THE ELEVATOR MANUFACTURER REQUIRES WIRING FROM THE SMOKE DETECTORS TO MACHINE ROOM CONTROLLER. PROVIDE A SET OF FORM "C" CONTACTS (NORMALLY OPEN - COMMON - NORMALLY CLOSED) FROM THE SMOKE DETECTOR AT DESIGNATED FIREMAN'S LANDING AND ONE SET OF FORM "C" CONTACTS REPRESENTING ALL OTHER SMOKE DETECTORS IN THE SYSTEM. REFERENCE ASME A17.1B - 1995 SAFETY CODE FOR ELEVATORS AND ESCALATORS RULE 211.3B.

AT ELEVATOR VESTIBULES, PROVIDE WORK AS FOLLOWS:

A. PROVIDE A CEILING MOUNTED DUAL CONTACT SMOKE DETECTOR WITH ONE CONTACT WIRED TO THE LOCAL FIREALARM ZONE AND THE OTHER TO OPERATE THE ELEVATOR RECALL FUNCTION. THE ELEVATOR MANUFACTURER REQUIRES WIRING FROM THE SMOKE DETECTORS TO MACHINE ROOM CONTROLLER. PROVIDE A SET OF FORM "C" CONTACTS (NORMALLY OPEN - COMMON - NORMALLY CLOSED) FROM THE SMOKE DETECTOR AT DESIGNATED FIREMAN'S LANDING AND ONE SET OF FORM "C" CONTACTS REPRESENTING ALL OTHER SMOKE DETECTORS IN THE SYSTEM. REFERENCE ASME A17.1B - 1995 SAFETY CODE FOR ELEVATORS AND ESCALATORS RULE 211.3B.

7 ELEVATOR DETAILS

N.T.S.

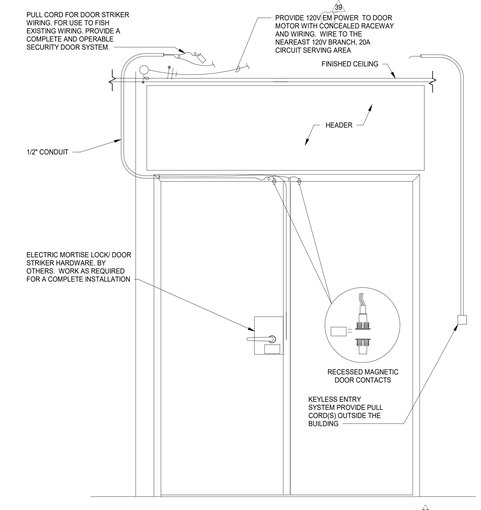


NOTE:

BATTERY OPERATED EMERGENCY LIGHT FIXTURES SHALL BE WIRED ON THE SAME BRANCH CIRCUIT SERVING THE NORMAL ILLUMINATION IN THE AREA AND CONNECT AHEAD OF ANY LOCAL SWITCHES.

5 EMERGENCY LIGHTING WIRING DETAIL

N.T.S.



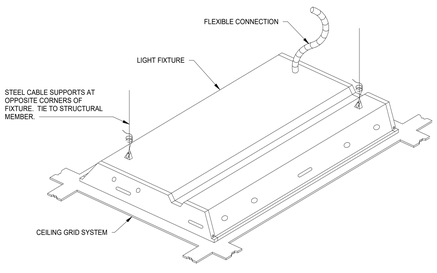
CR = CARD READER. REFER TO LOW VOLTAGE SECURITY AND ACCESS CONTROL DRAWINGS FOR MORE DETAILS

NOTES:

1. ELECTRIC STRIKES, DOOR RELEASE, AND DOOR CONTACTS BY OTHERS.
2. E.C. TO PROVIDE JUNCTION BOXES, CONDUIT AND 120V POWER AND COMPLETE CONNECTION.

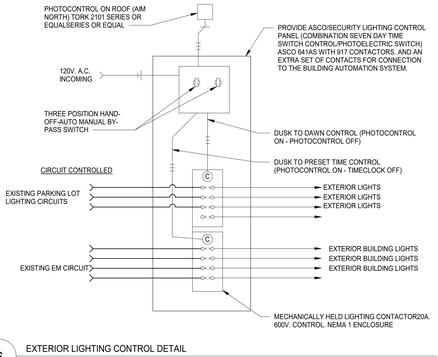
2 TYPICAL MAGNETIC DOOR CONTACT DETAIL

N.T.S.



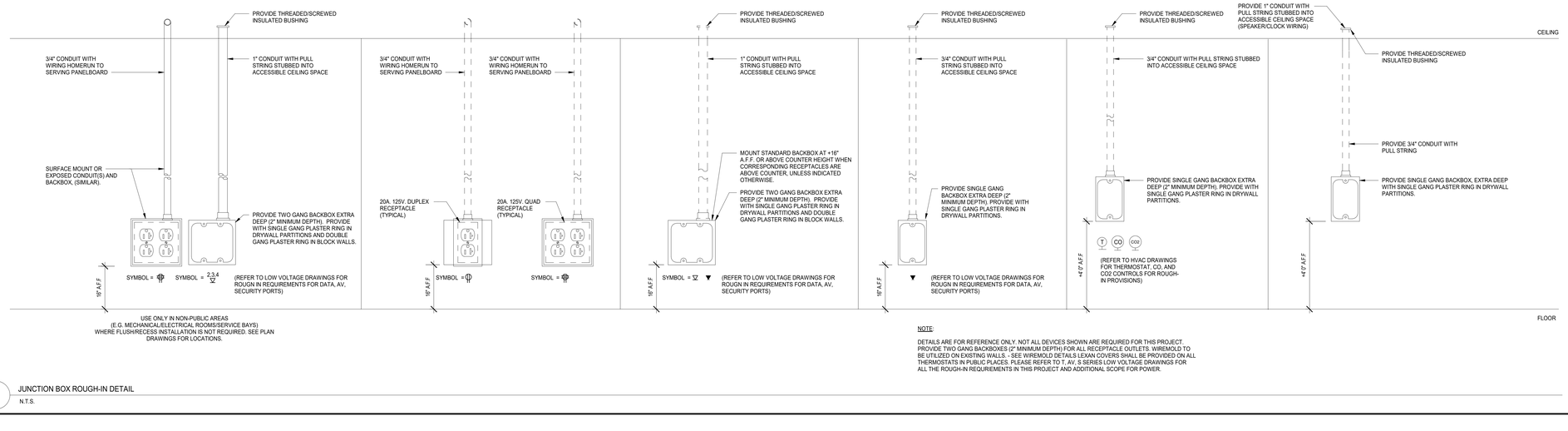
3 LIGHT FIXTURE SUPPORT DETAIL

N.T.S.



6 EXTERIOR LIGHTING CONTROL DETAIL

N.T.S.



NOTE:

DETAILS ARE FOR REFERENCE ONLY. NOT ALL DEVICES SHOWN ARE REQUIRED FOR THIS PROJECT PROVIDE TWO GANG BACKBOXES (2" MINIMUM DEPTH) FOR ALL RECEPTACLE OUTLETS. WIREMOLD TO BE UTILIZED ON EXISTING WALLS. - SEE WIREMOLD DETAILS LEXAN COVERS SHALL BE PROVIDED ON ALL THERMOSTATS IN PUBLIC PLACES. PLEASE REFER TO T, AV, S SERIES LOW VOLTAGE DRAWINGS FOR ALL THE ROUGH-IN REQUIREMENTS IN THIS PROJECT AND ADDITIONAL SCOPE FOR POWER.

1 JUNCTION BOX ROUGH-IN DETAIL

N.T.S.

DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

Wight

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NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
36	ISSUED FOR ADDENDUM 2 - BG8	12.04.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	ISSUED FOR 90%CD - PHASE C	11.01.2019
	ISSUED FOR 75%CD - PHASE C	10.14.2019
	ISSUED FOR 50%CD - PHASE C	10.02.2019
	ISSUED FOR 25%CD - PHASE C	08.30.2019
	ISSUED FOR 100% DD	07.12.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

DETAILS

Project Number:
5274-42
Drawn By:
Author
Sheet:

E7.01c

ZONE NAME	CKT NAME	FXT TYPE	FIXT QTY	FIXT WATT	TOTAL WATT	DIMMED 20A 120V QTY	DIMMED 20A 120V DMX ADDRESS FROM:	DIMMED 20A 120V DMX ADDRESS TO:	SWITCHED 20A 120V QTY	SWITCHED 20A 120V DMX ADDRESS FROM:	SWITCHED 20A 120V DMX ADDRESS TO:	DATA REQ	EM ZONE	COMMENTS
ORCHESTRA LIGHTS														
SHELL 1	OL-1	S51	9	110W	990							DMX		CORD AND PLUG FIXTURE CONNECTED TO PB-151
SHELL 1	OL-2	S51	9	110W	990							DMX		CORD AND PLUG FIXTURE CONNECTED TO PB-151
SHELL 2	OL-3	S51	9	110W	990							DMX		CORD AND PLUG FIXTURE CONNECTED TO PB-152
SHELL 2	OL-4	S51	9	110W	990							DMX		CORD AND PLUG FIXTURE CONNECTED TO PB-152
SHELL 3	OL-5	S51	7	110W	770							DMX		CORD AND PLUG FIXTURE CONNECTED TO PB-153
SHELL 3	OL-6	S51	7	110W	770							DMX		CORD AND PLUG FIXTURE CONNECTED TO PB-153
FOH CATWALK 1	OL-7	S51	11	110W	1210							DMX		CORD AND PLUG FIXTURE CONNECTED TO PB-118 AND PB-121
FOH CATWALK 1	OL-8	S51	11	110W	1210							DMX		CORD AND PLUG FIXTURE CONNECTED TO PB-119 AND PB-122
FOH CATWALK 2	OL-9	S18	2	575W	1150									CORD AND PLUG FIXTURE CONNECTED TO PB-123 AND PB-124
FOH CATWALK 2	OL-10	S18	2	575W	1150									CORD AND PLUG FIXTURE CONNECTED TO PB-125 AND PB-126
FOH CATWALK 2	OL-11	S18	2	575W	1150									CORD AND PLUG FIXTURE CONNECTED TO PB-127 AND PB-128
FOH CATWALK 3	OL-12	S18	2	575W	1150									CORD AND PLUG FIXTURE CONNECTED TO PB-130 AND PB-131
FOH CATWALK 3	OL-13	S18	2	575W	1150									CORD AND PLUG FIXTURE CONNECTED TO PB-132 AND PB-133
FOH CATWALK 3	OL-14	S18	2	575W	1150									CORD AND PLUG FIXTURE CONNECTED TO PB-135 AND PB-136
WORK LIGHTS														
PIT LEVEL ACCESS - NORTH & SOUTH STA	WL-101	S1 S16 S19	4 2 5	26W 28W 36W	340W				1	268			YES	
PIT LEVEL ACCESS - ELEVATOR CORRIDO	WL-102	S19	3	36W	108W				1	268				
ORCHESTRA PIT	WL-103	S17 S19	4 2	40W 36W	232W				1	269				
ARBOR PIT	WL-104	S1	4	26W	104W				1	270				
VESTIBULE 1-608 & 1-625 OVERHEAD	WL-105	S15-2	4	47W	188W				1	271		0-10V	YES	
WINGS OVERHEAD	WL-106	S14	6	104W	624W				1	272		0-10V	YES	
TECHNICAL GALLERIES	WL-107	S1 S16	7 10	26W 28W	462W				1	273			YES	
PINRAIL GALLERIES OVERHEAD	WL-108	S4	6	22W	132W				1	274		0-10V	YES	
CATWALKS	WL-109	S1	24	26W	624W				1	273			YES	
CATWALKS	WL-110	S1	34	26W	884W				1	274				
LOADING GALLERY	WL-111	S1	4	26W	824W				1	275			YES	
GRIDIRON OVERHEAD		S17	18	40W										
GRIDIRON OVERHEAD	WL-112	S17	17	40W	680W				1	276				
CONTROL BOOTH OVERHEAD	WL-113	S20-1	4	24W	96W				1	277		DMX	YES	
CONTROL BOOTH TRACK	WL-114A	S9	1	600W	600W				1	278		DMX		BRANCH CIRCUIT CONTROL BY REMOTE ZONE CONTROLLER RZC-101
FOLLOWSPOT BOOTH TRACK	WL-114B	S9	1	600W	600W									BRANCH CIRCUIT CONTROL BY REMOTE ZONE CONTROLLER RZC-102
CORRIDOR 1-611 RUN LIGHTS	WL-115	S2	9	15W	135W				1	279		0-10V		
STAGE RUN LIGHTS	WL-116	S2	6	15W	90W				1	280		0-10V		
CATWALK RUNNING STEPLIGHTS	WL-117	S8	17	3W	51W				1	281				
RIGGING WARNING LIGHT	WL-118	S25	3	15W	45W				1	282				
RIGGING INDEX LIGHT	WL-119	S12	1	575W	575W				1	283				PROVIDED AND INSTALLED BY DIVISION 11
FOH CATWALK 1	WL-120	S3	3	575W	1725									CORD AND PLUG FIXTURE CONNECTED TO PB-119 AND PB-121
BALCONY RAIL	WL-121	S3	3	575W	1725									CORD AND PLUG FIXTURE CONNECTED TO PB-114 AND PB-116
PIN RAIL GALLERY RIGHT	WL-122	S11	3	100W	300W									CORD AND PLUG FIXTURE CONNECTED TO PB-143 AND PB-144
PIN RAIL GALLERY LEFT	WL-123	S11	3	100W	300W									CORD AND PLUG FIXTURE CONNECTED TO PB-145 AND PB-146
ELECTRIC #1	WL-124	S11	5	100W	500									CORD AND PLUG FIXTURE CONNECTED TO PS-101
ELECTRIC #3	WL-125	S11	12	100W	1200W									CORD AND PLUG FIXTURE CONNECTED TO PS-103
HOUSE LIGHTS														
VESTIBULE 1-637 & 1-644 OVERHEAD	HL-101A	S20-1	2	24W										
VOM OVERHEAD	HL-101B	S20-1	2	24W										
VESTIBULE 1-630 & 1-633 OVERHEAD	HL-101C	S20-1	2	24W	480W				1.00	284		DMX	YES	
VESTIBULE 1-631	HL-101D	S23	1	24W										
VESTIBULE 2-607 & 2-611	HL-101F	S20-1	5	24W										
VESTIBULE 3-607 & 3-XXX	HL-101G	S20-1	8	24W										
AUDITORIUM ROW 1 INNER	HL-102A	S21-1	3	82W										
AUDITORIUM ROW 1 OUTER	HL-102B	S21-1	2	82W										
AUDITORIUM ROW 2	HL-102C	S21-2	3	82W	1312W				1.00	285		DMX		
AUDITORIUM ROW 6 INNER	HL-102D	S21-5	6	82W										
AUDITORIUM ROW 6 OUTER	HL-102F	S21-5	2	82W										
AUDITORIUM ROW 3	HL-103A	S21-2	3	82W										
AUDITORIUM ROW 4 INNER	HL-103B	S21-3	3	96W										
AUDITORIUM ROW 4 OUTER	HL-103C	S21-3	4	96W	1494W				1.00	286		DMX	YES	
AUDITORIUM ROW 5 INNER	HL-103D	S21-4	4	96W										
AUDITORIUM ROW 5 OUTER	HL-103F	S21-4	2	96W										
PARTERRE BOX WALLWASH	HL-104A	S26	8	22W										
PARTERRE ROW 1	HL-104B	S20-2	6	29W										
PARTERRE ROW 2	HL-104C	S20-1	8	24W	910W				1.00	287		DMX		
PARTERRE ROW 2 OUTER	HL-104D	S20-1	2	24W										
PARTERRE ROW 3	HL-104F	S20-1	6	24W										
PARTERRE ROW 4 - REAR WALLWASH	HL-104G	S26	8	22W										
PARTERRE BOX WALLWASH	HL-105A	S26	4	22W										
PARTERRE ROW 1	HL-105B	S20-2	4	29W	504W				1.00	288		DMX	YES	
PARTERRE ROW 2	HL-105C	S20-1	5	24W										
PARTERRE ROW 3	HL-105D	S20-1	2	24W										
PARTERRE ROW 4 - REAR WALLWASH	HL-105F	S26	6	22W										
CHEEK WALL ACCENT	HL-106	S27							1.00	289		DMX		

8 SCHEDULE: LIGHTING FIXTURES
SCALE: NONE

39

LOCATION	DEVICE NUMBER		BOX MOUNTING	LABEL	CONTROL TYPE	COMMENTS
ORCHESTRA PIT	EP	101	RECESSED	TBA	5-BUTTON	PROVIDE FLUSH LATCHING
ORCHESTRA PIT	EP	102	RECESSED	TBA	5-BUTTON	PROVIDE FLUSH LATCHING
ORCHESTRA PIT ELEVATOR	EP	103	RECESSED	TBA	5-BUTTON	PROVIDE FLUSH LATCHING
ARBOR PIT	EP	104	SURFACE	TBA	5-BUTTON	
DOWN STAGE LEFT	SMP	101	INTEGRATED	TBA	TOUCHSCREEN WITH 10 BUTTONS	INTEGRATED INTO SMP-101
DOWN STAGE RIGHT	EP	106	SURFACE	TBA	5-BUTTON	PROVIDE LATCHING COVER
UP STAGE LEFT	EP	107	SURFACE	TBA	5-BUTTON	PROVIDE LATCHING COVER
UP STAGE RIGHT	EP	108	SURFACE	TBA	5-BUTTON	PROVIDE LATCHING COVER
HOUSE RIGHT POCHE LEVEL 1	EP	109	SURFACE	TBA	5-BUTTON	
HOUSE RIGHT SOUND & LIGHT LOCK	EP	110	RECESSED	TBA	5-BUTTON	PROVIDE FLUSH LATCHING COVER
HOUSE LEFT STAGE SOUND & LIGHT LOCK	EP	111	SURFACE	TBA	5-BUTTON	PROVIDE FLUSH LATCHING COVER
HOUSE LEFT POCHE LEVEL 1	EP	112	SURFACE	TBA	5-BUTTON	
HOUSE LEFT SOUND & LIGHT LOCK	EP	113	RECESSED	TBA	5-BUTTON	PROVIDE FLUSH LATCHING COVER
HOUSE RIGHT MAIN FLOOR REAR SOUND & LIGHT LOCK	EP	114	RECESSED	TBA	5-BUTTON	PROVIDE FLUSH LATCHING COVER
HOUSE LEFT MAIN FLOOR REAR SOUND & LIGHT LOCK	EP	115	RECESSED	TBA	5-BUTTON	PROVIDE FLUSH LATCHING COVER
UP STAGE LEFT SOUND & LIGHT LOCK	EP	116	SUFACE	TBA	5-BUTTON	
UP STAGE RIGHT SOUND & LIGHT LOCK	EP	117	SUFACE	TBA	5-BUTTON	
HOUSE RIGHT PARTERRE REAR SOUND AND LIGHT LOCK	EP	118	RECESSED	TBA	5-BUTTON	PROVIDE FLUSH LATCHING COVER
HOUSE LEFT PARTERRE REAR SOUND & LIGHT LOCK	EP	119	RECESSED	TBA	5-BUTTON	PROVIDE FLUSH LATCHING COVER
CONTROL ROOM	EP	120	FLUSH	TBA	5-BUTTON, 1-SLIDER	
HOUSE RIGHT TECHNICAL MEZZANINE	EP	121	SURFACE	TBA	5-BUTTON	
HOUSE LEFT TECHNICAL MEZZANINE	EP	122	SURFACE	TBA	5-BUTTON	
HOUSE RIGHT BALCONY SOUND & LIGHT LOCK	EP	123	RECESSED	TBA	5-BUTTON	PROVIDE FLUSH LATCHING COVER
HOUSE LEFT BALCONY SOUND & LIGHT LOCK	EP	124	RECESSED	TBA	5-BUTTON	PROVIDE FLUSH LATCHING COVER
HOUSE RIGHT CATWALK ACCESS	EP	125	SURFACE	TBA	5-BUTTON	
HOUSE LEFT CATWALK ACCESS	EP	126	SURFACE	TBA	5-BUTTON	
STAGE LEFT PIN RAIL GALLERY	EP	127	SURFACE	TBA	5-BUTTON, 1-SLIDER	
STAGE LEFT PIN RAIL GALLERY (LOADING GALLERY ACCESS)	EP	128	PIPE	TBA	5-BUTTON	
STAGE RIGHT PIN RAIL GALLERY	EP	129	SURACE	TBA	5-BUTTON, 1-SLIDER	
FOLLOW SPOT ROOM	EP	130	FLUSH	TBA	5-BUTTON, 1-SLIDER	
FOLLOW SPOT ROOM	EP	131	FLUSH	TBA	5-BUTTON	
LOADING GALLERY	EP	132	PIPE	TBA	5-BUTTON	

3 SCHEDULE: ENTRY PANELS
SCALE: NONE

LOCATION:	DEVICE NUMBER		MOUNTING	CONNECTOR	LENGTH	DIMMED POWER: PRODUCTION 120V 20A QTY	DIMMED POWER: PRODUCTION 120V 20A DMX ADDRESS FROM:	DIMMED POWER: PRODUCTION 120V 20A DMX ADDRESS TO:	DIMMED POWER: PRODUCTION 120V 50A QTY	DIMMED POWER: PRODUCTION 120V 50A DMX ADDRESS FROM:	DIMMED POWER: PRODUCTION 120V 50A DMX ADDRESS TO:	DIMMED POWER: ORCHESTRA 120V 20A QTY	DIMMED POWER: ORCHESTRA 120V 20A DMX ADDRESS FROM:	DIMMED POWER: ORCHESTRA 120V 20A DMX ADDRESS TO:	DIMMED POWER: WORKS 120V 20A QTY	DIMMED POWER: WORKS 120V 20A DMX ADDRESS FROM:	DIMMED POWER: WORKS 120V 20A DMX ADDRESS TO:	SWITCHED POWER: PRODUCTION 120V 20A QTY	SWITCHED POWER: PRODUCTION 120V 20A DMX ADDRESS FROM:	SWITCHED POWER: PRODUCTION 120V 20A DMX ADDRESS TO:	SWITCHED POWER: ORCHESTRA 120V 20A QTY	SWITCHED POWER: ORCHESTRA 120V 20A DMX ADDRESS FROM:	SWITCHED POWER: ORCHESTRA 120V 20A DMX ADDRESS TO:	SWITCHED POWER: WORKS 120V 20A QTY	SWITCHED POWER: WORKS 120V 20A DMX ADDRESS FROM:	SWITCHED POWER: WORKS 120V 20A DMX ADDRESS TO:	SWITCHED POWER: PRODUCTION 208V 20A QTY	SWITCHED POWER: PRODUCTION 208V 20A DMX ADDRESS FROM:	SWITCHED POWER: PRODUCTION 208V 20A DMX ADDRESS TO:	CONTROL RECEPTACLES: NET JACK	CONTROL RECEPTACLES: DMX OUT	CONTROL RECEPTACLES: AUX. CTRL CONSL	CONTROL RECEPTACLES: POWER 120V DPLX	DEST SPR	COMMENTS
DOWNSTAGE LEFT	PB	101	SURFACE	PANEL		4	1	4										1	193												1	1			101	
DOWNSTAGE RIGHT	PB	102	SURFACE	PANEL		4	5	8										1	194												1	1	1		101	
UPSTAGE LEFT	PB	103	SURFACE	PANEL		4	9	12										3	195	197									1	290		1	1			101	
UPSTAGE RIGHT	PB	104	SURFACE	PANEL		4	13	16										3	198	200									1	290		1	1			101	
ANTEPRO RIGHT UPPER	PB	105	SURFACE	PANEL		6	17	22										1	201										1	291			1			101	
ANTEPRO RIGHT LOWER	PB	106	SURFACE	PANEL		6	17	22										1	201										1	291		1	1			101	
ANTEPRO LEFT UPPER	PB	107	SURFACE	PANEL		6	23	28										1	202										1	292			1			101	
ANTEPRO LEFT LOWER	PB	108	SURFACE	PANEL		6	23	28										1	202										1	292		1	1			101	
BOX BOOM RIGHT UPPER	PB	109	SURFACE	PIGTAIL		6	29	34										1	203										1	291			1			101	
BOX BOOM RIGHT LOWER	PB	110	SURFACE	PIGTAIL		6	29	34										1	203										1	291		1	1			101	
BOX BOOM LEFT UPPER	PB	111	SURFACE	PIGTAIL		6	35	40										1	204										1	292			1			101	
BOX BOOM LEFT LOWER	PB	112	SURFACE	PIGTAIL		6	35	40										1	204										1	292		1	1			101	
BALCONY RAIL	PB	113	FLUSH	PANEL		3	41	43										1	205										1	293		1	1			101	
BALCONY RAIL	PB	114	FLUSH	PANEL		3	44	46										1	205										1	293			1			102	
BALCONY RAIL	PB	115	FLUSH	PANEL		3	47	49										1	206										1	293		1	1			102	
BALCONY RAIL	PB	116	FLUSH	PANEL		3	50	52										1	207										1	293			1			102	
BALCONY RAIL	PB	117	FLUSH	PANEL		3	53	55										1	207										1	293		1	1			102	
1ST CATWALK	PB	118	PIPE	PIGTAIL		3	56	58										1	208		1	254									1	1			101	
1ST CATWALK	PB	119	PIPE	PIGTAIL		3	59	61										1	208		1	254		1	262		1	294				1			101	
1ST CATWALK	PB	120	PIPE	PIGTAIL		3	62	64										1	209												1	1			101	
1ST CATWALK	PB	121	PIPE	PIGTAIL		3	65	67										1	210		1	255		1	262		1	294				1			101	
1ST CATWALK	PB	122	PIPE	PIGTAIL		3	68	70										1	210		1	255									1	1			101	
2ND CATWALK	PB	123	PIPE	PIGTAIL		2	71	72				1	187					1	211												1	1			102	
2ND CATWALK	PB	124	PIPE	PIGTAIL		3	73	75				1	187					1	211																	
2ND CATWALK	PB	125	PIPE	PIGTAIL		2	76	77				1	188					1	212						263		1	295							102	
2ND CATWALK	PB	126	PIPE	PIGTAIL		3	78	80				1	188					1	212												1	1			102	
2ND CATWALK	PB	127	PIPE	PIGTAIL		2	81	82				1	189					1	212						263		1	295							102	
2ND CATWALK	PB	128	PIPE	PIGTAIL		3	83	85				1	189					1	213																	102	
2ND CATWALK	PB	129	PIPE	PIGTAIL		2	86	87				1	189					1	213												1	1			102	
3RD CATWALK	PB	130	PIPE	PIGTAIL		1	88					1	190					1	214												1	1			102	
3RD CATWALK	PB	131	PIPE	PIGTAIL		2	89	90				1	190					1	214																	102	
3RD CATWALK	PB	132	PIPE	PIGTAIL		2	91	92				1	191					1	215																	102	
3RD CATWALK	PB	133	PIPE	PIGTAIL		3	93	95				1	191					1	215												1	1			102	
3RD CATWALK	PB	134	PIPE	PIGTAIL		2	96	97				1	191					1	215																	102	
3RD CATWALK	PB	135	PIPE	PIGTAIL		2	98	99				1	192					1	216																	102	
3RD CATWALK	PB	136	PIPE	PIGTAIL		1	100					1	192					1	216												1	1			102	
4TH CATWALK	PB	137	PIPE	PANEL		2	101	102										1	217												1	1			102	
4TH CATWALK	PB	138	PIPE	PANEL		2	101	102										1	217												1	1			102	
FOLLOW SPOT ROOM	PB	139	FLUSH	PANEL		2	101	102										1	217												1				101	
CONTROL ROOM	PB	140	FLUSH	PANEL														1	218																	101	
1ST ELECTRIC (GB-1)	PS	101	PIPE	PIGTAIL	68'-0"	22	103	124										6	219	224				1	264		1	296			1	3			101	
2ND ELECTRIC (GB-2)	PS	102	PIPE	PIGTAIL	68'-0"	18	125	142										6	225	230							1	297			1	3			101	
3RD ELECTRIC (GB-3)	PS	103	PIPE	PIGTAIL	68'-0"	18	143	160										6	231	236				1	265		1	298			1	3			101	
4TH ELECTRIC (GB-4)	PS	105	PIPE	PIGTAIL	68'-0"	18	161	178										6	237	242							1	299			1	3			101	
CYC ELECTRIC (GB-5)	PS	106	PIPE	PIGTAIL	68'-0"													6	243	248											1	3			101	
ORCHESTRA	PB	141	RECESSED	PANEL		2	1 AND 5											1	249												1				101	
ORCHESTRA	PB	142	RECESSED	PANEL		2	1 AND 5											1	249												1				101	
PIN RAIL GALLERY LEFT	PB	143	PIPE	PANEL		4	179	182										1	250					1	266						1				101	
PIN RAIL GALLERY LEFT	PB	144	PIPE	PANEL		4	179	182										1	251					1	266						1				101	
PIN RAIL GALLERY RIGHT	PB	145	PIPE	PANEL		4	183	186										1	252					1	266						1				101	
PIN RAIL GALLERY RIGHT	PB	146	PIPE	PANEL		4	183	186										1	253					1	266						1				101	
GRIDIRON DOWNSTAGE LEFT	PB	147	SURFACE	PANEL		4	179	182										2	250	251							2	296	297		1				101	
GRIDIRON DOWNSTAGE RIGHT	PB	148	SURFACE	PANEL		4	179	182										2	250	251							2	296	297		1				101	
GRIDIRON UPSTAGE LEFT	PB	149	SURFACE	PANEL		4	183	186										2	252	253							2	298	299		1				101	
GRIDIRON UPSTAGE RIGHT	PB	150	SURFACE	PANEL		4	183	186										2	252	253							2	298	299		1				101	
SHELL 1 (GB-1)	PB	151	PIPE	PANEL																	2	256	257								1				101	
SHELL 2 (GB-3)	PB	152	PIPE	PANEL																	2	258	259								1				101	
SHELL 3 (GB-4)	PB	153	PIPE	PANEL																	2	260	261								1				101	
MIX POSITION	CRP	101	FLUSH	PANEL																											2		1	2	102	
CONTROL BOOTH	CRP	102	FLUSH	PANEL																											2		1	2	102	
MAIN FLOOR SEATING	RHP	101	FLOOR	PANEL																											2		1	2	102	

1 SCHEDULE: WIRING DEVICES
SCALE: NONE

DISTRICT 99
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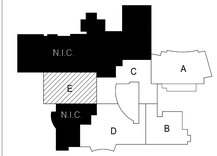

NORTH

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NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
-	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
-	ISSUED FOR 90% CD - PHASE C	11.01.2019
-	ISSUED FOR 75% CD - PHASE C	10.14.2019
-	ISSUED FOR 25% CD - PHASE C	08.30.2019
-	ISSUED FOR 100% DD - PHASE C	07.12.2019

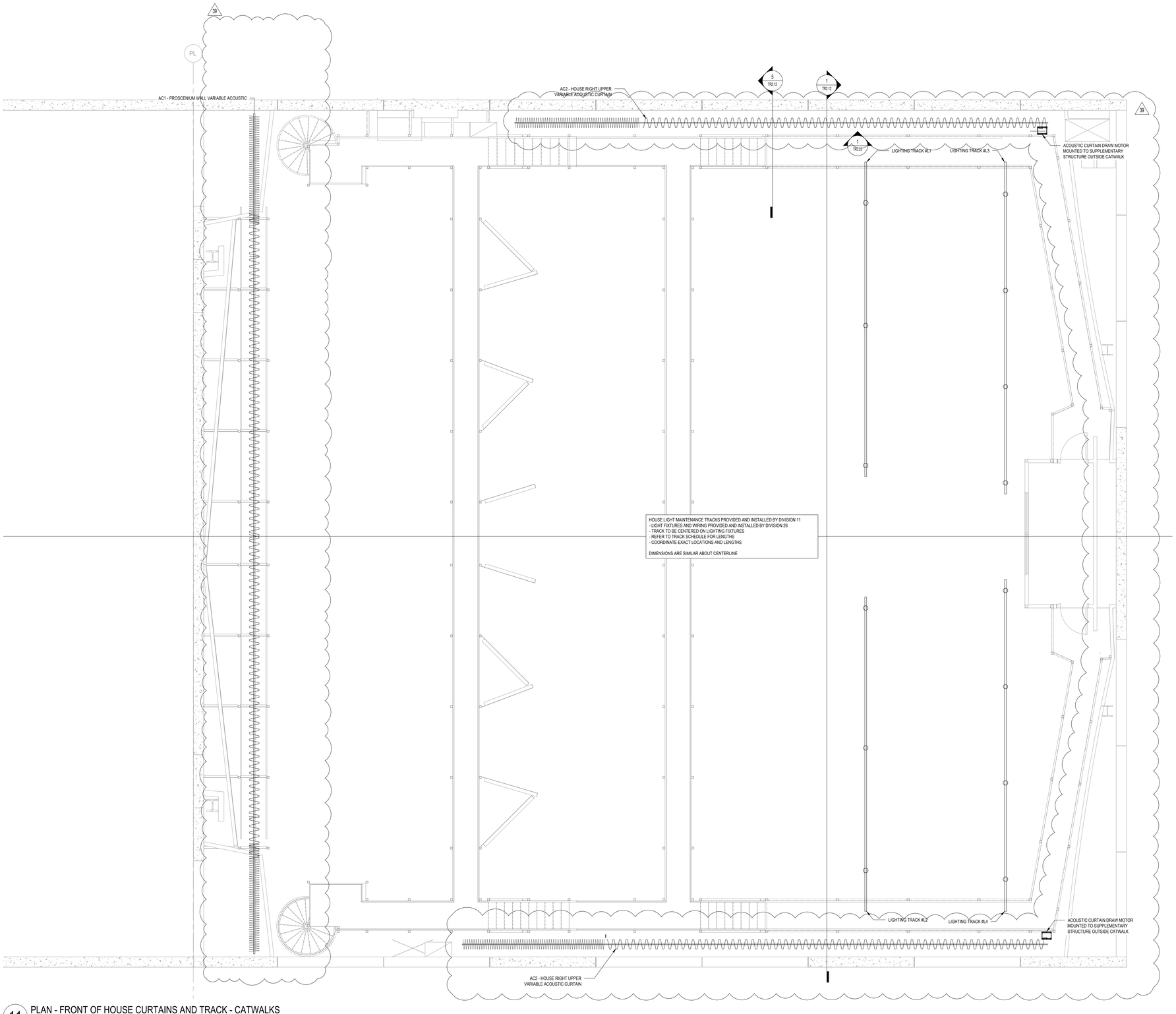
DOWNERS GROVE SOUTH HIGH SCHOOL

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

THEATRE LIGHTING & DISTRIBUTION PROSCENIUM THEATRE SCHEDULES

Project Number:
5274-42
Drawn By:
SK
Sheet:

TE6.12



11 PLAN - FRONT OF HOUSE CURTAINS AND TRACK - CATWALKS
SCALE: 1/4" = 1'-0"

DISTRICT 99

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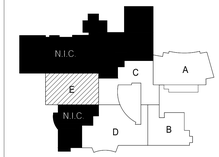

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-	ISSUED FOR 100% DD - PHASE C	07.12.2019

DOWNERS GROVE SOUTH HIGH SCHOOL

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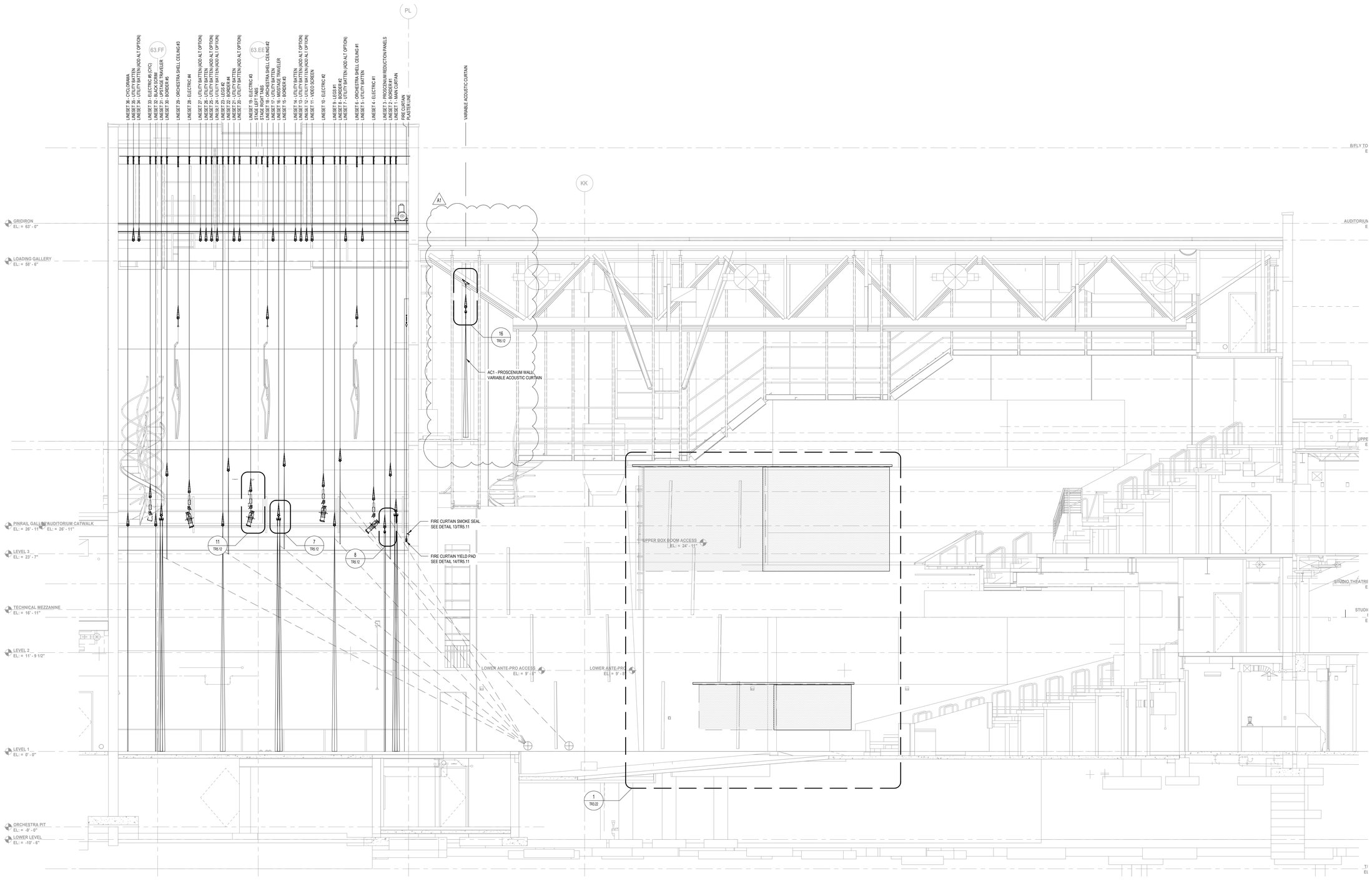
DOWNERS GROVE, IL 60516

THEATRE RIGGING PROSCENIUM THEATRE PLANS

Project Number:
5274-42
Drawn By:
###
Sheet:

TR1.13



1 SECTION - STAGE RIGHT
SCALE: 1/4" = 1'-0"

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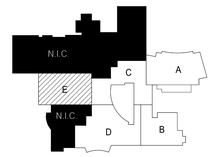

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DOWNERS GROVE SOUTH HIGH SCHOOL

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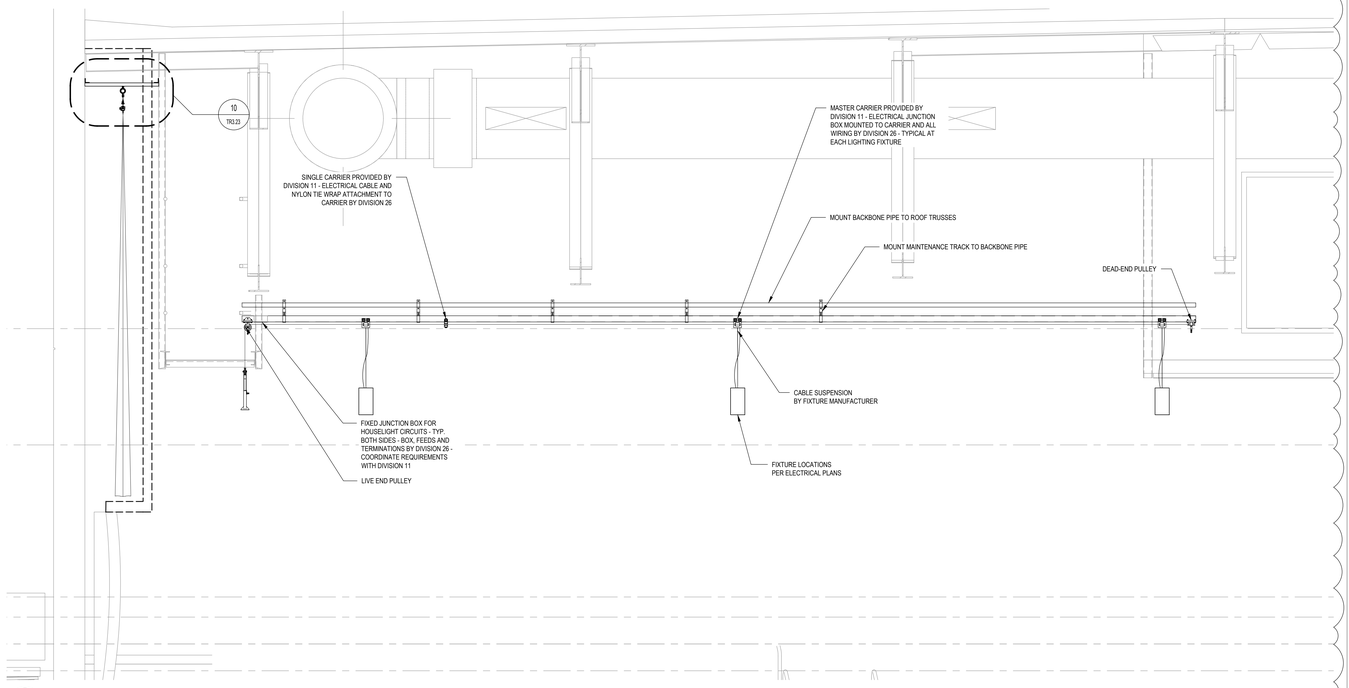
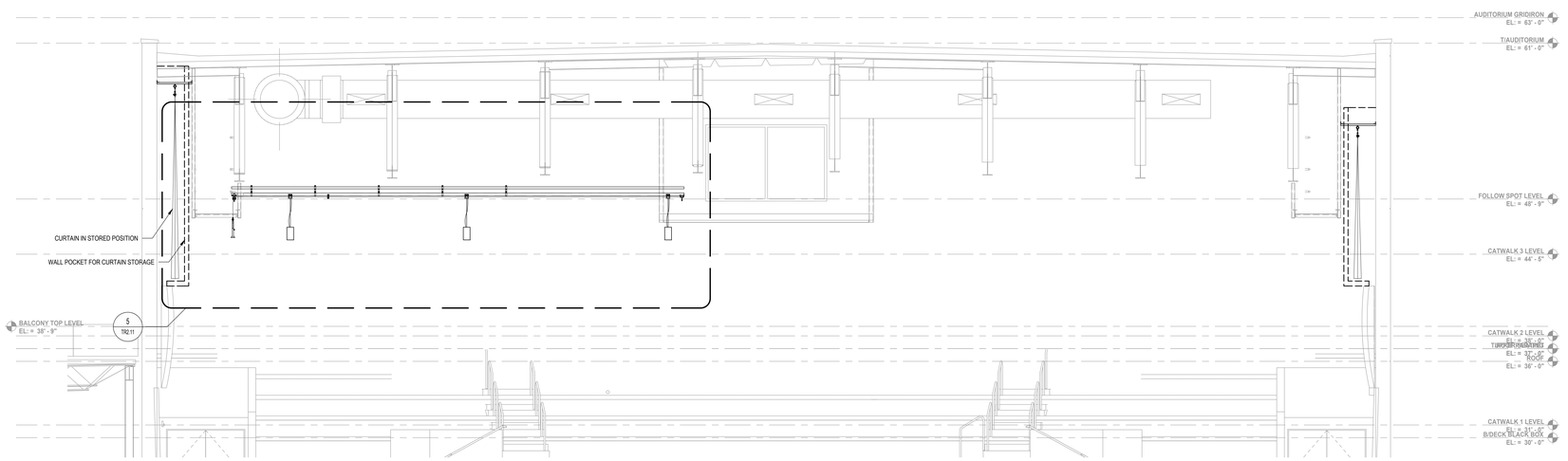
THEATRE RIGGING PROSCENIUM THEATRE SECTION

Project Number:
5274-42
Drawn By:
SK
Sheet:

TR2.11



3 ENLARGED ELEVATION - HOUSE LIGHT MAINTENANCE TRACKS
SCALE: 1/2" = 1'-0"



39

1 ELEVATION - HOUSE LIGHT MAINTENANCE TRACKS
SCALE: 1/4" = 1'-0"

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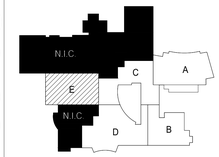

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DOWNERS GROVE SOUTH HIGH SCHOOL

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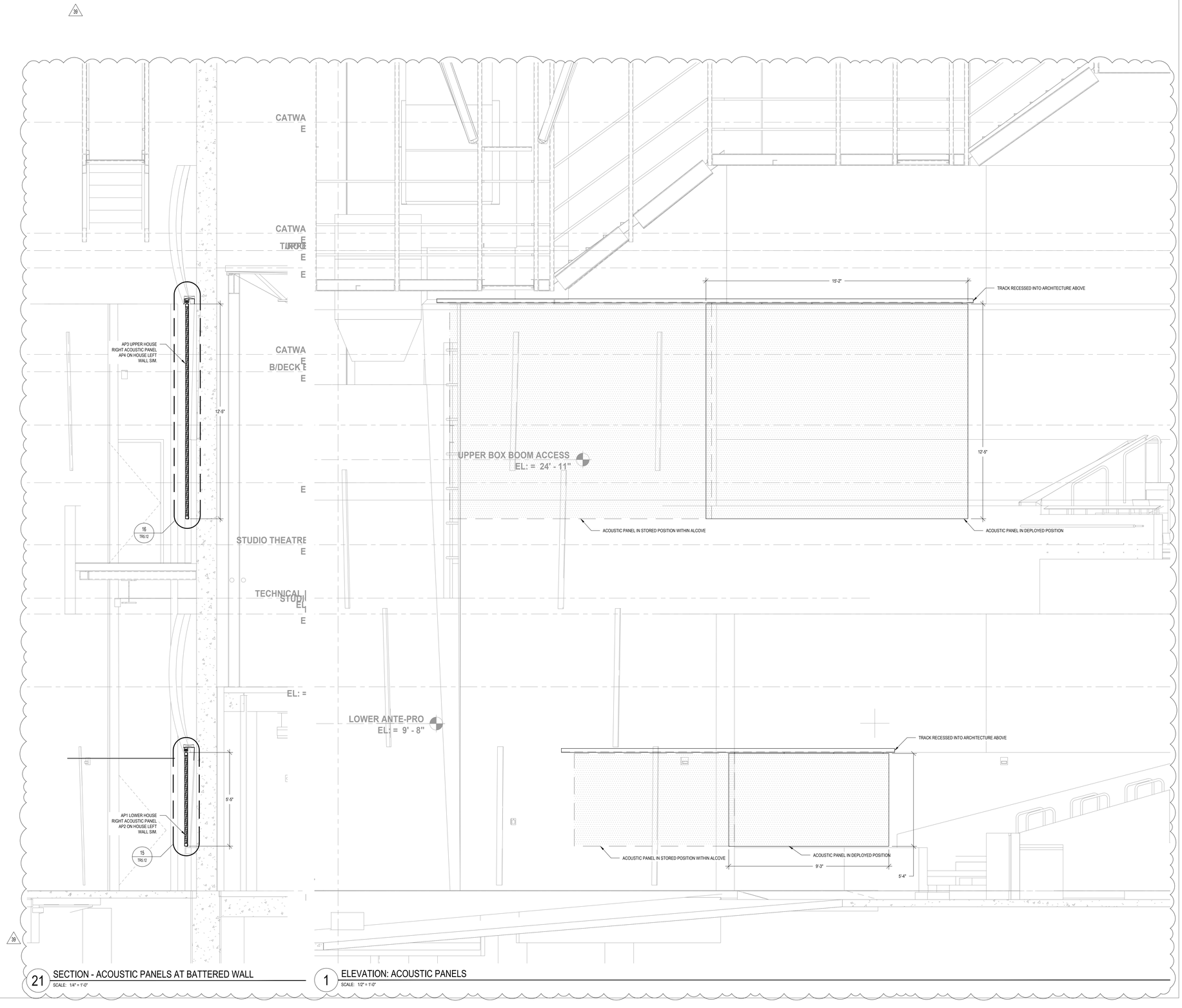
THEATRE RIGGING PROSCENIUM THEATRE SECTIONS

Project Number:
5274-42
Drawn By:
SK
Sheet:

TR2.12



21 SECTION - ACOUSTIC PANELS AT BATTERED WALL
SCALE: 1/4" = 1'-0"

1 ELEVATION: ACOUSTIC PANELS
SCALE: 1/2" = 1'-0"

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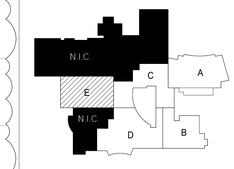

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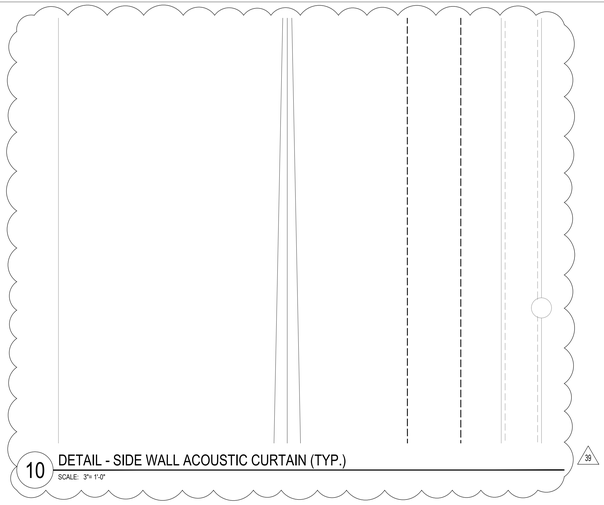
DOWNERS GROVE SOUTH HIGH SCHOOL

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

THEATRE RIGGING PROSCENIUM THEATRE ELEVATION

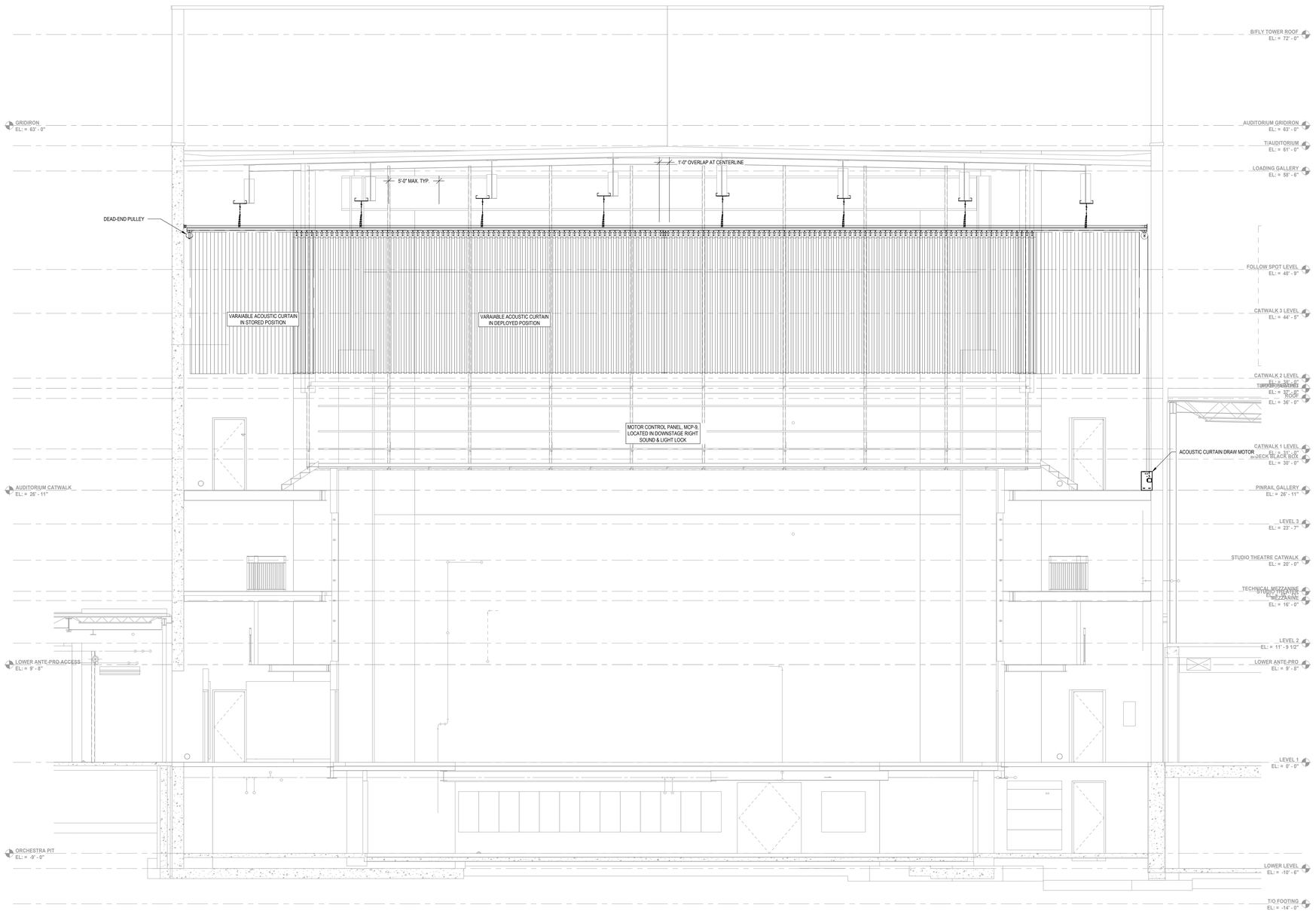
Project Number:
5274-42
Drawn By:
SK
Sheet:

TR3.22



10 DETAIL - SIDE WALL ACOUSTIC CURTAIN (TYP.)
SCALE: 3"= 1'-0"

39



1 ELEVATION: ACOUSTIC CURTAIN
SCALE: 1/4"= 1'-0"

39

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-	ISSUED FOR 100% DD - PHASE C	07.12.2019

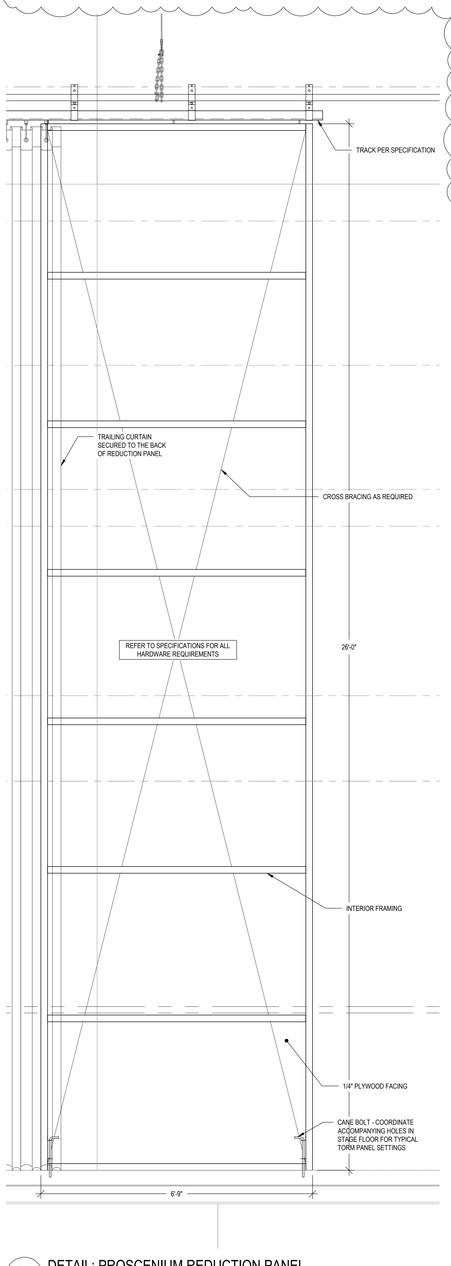
DOWNERS GROVE SOUTH HIGH SCHOOL

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

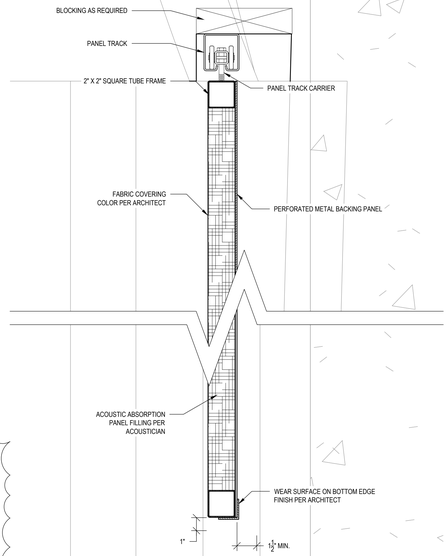
THEATRE RIGGING PROSCENIUM THEATRE ELEVATION

Project Number:
5274-42
Drawn By:
TK
Sheet:

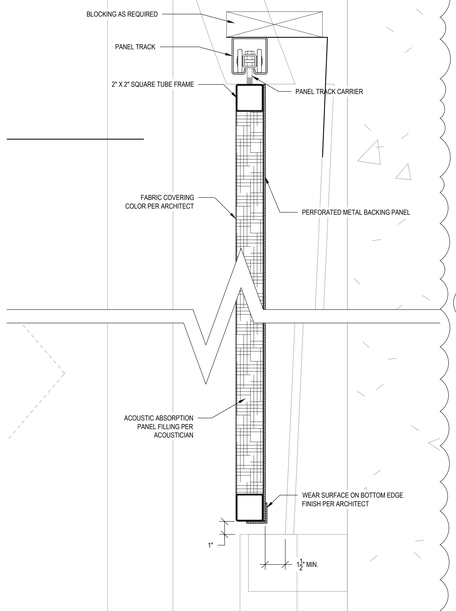
TR3.23



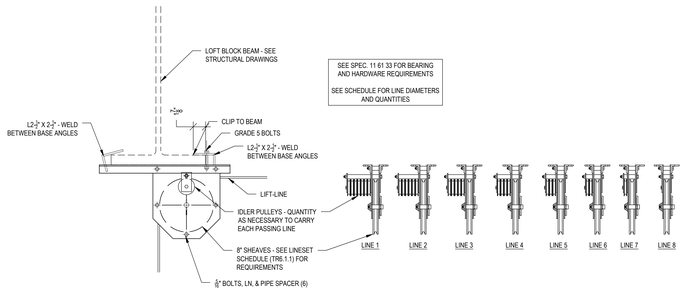
21 DETAIL: PROSCENIUM REDUCTION PANEL
SCALE: 3/4" = 1'-0"



18 DETAIL - ACOUSTIC PANEL
SCALE: 3" = 1'-0"



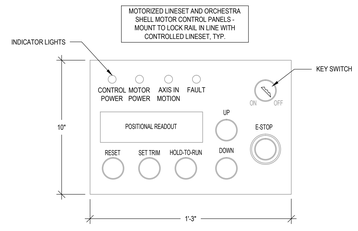
15 DETAIL - ACOUSTIC PANEL
SCALE: 3" = 1'-0"



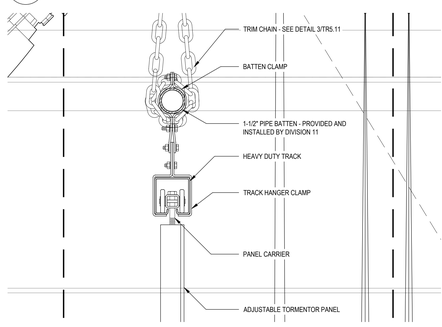
10 DETAIL: LOFT BLOCKS
SCALE: 1 1/2" = 1'-0"

9 DETAIL: VARIABLE ACOUSTIC CURTAIN MOTOR CONTROL PANEL
SCALE: 3" = 1'-0"

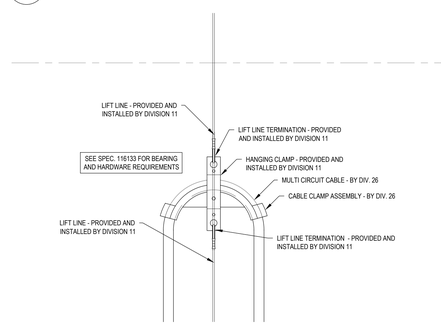
4 DETAIL: BELAYING PIN
SCALE: 1 1/2" = 1'-0"



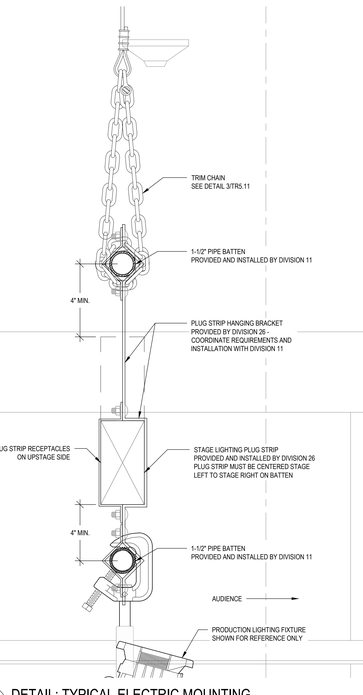
13 DETAIL: LINESET/ORCHESTRA SHELL MOTOR CONTROL PANEL
SCALE: 3" = 1'-0"



8 DETAIL: ADJUSTABLE TORMENTOR TRACK
SCALE: 3" = 1'-0"

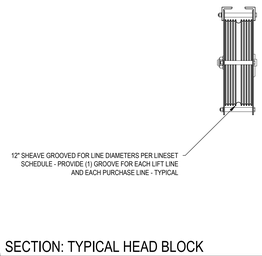


3 DETAIL: CABLE CRADLE
SCALE: 1 1/2" = 1'-0"

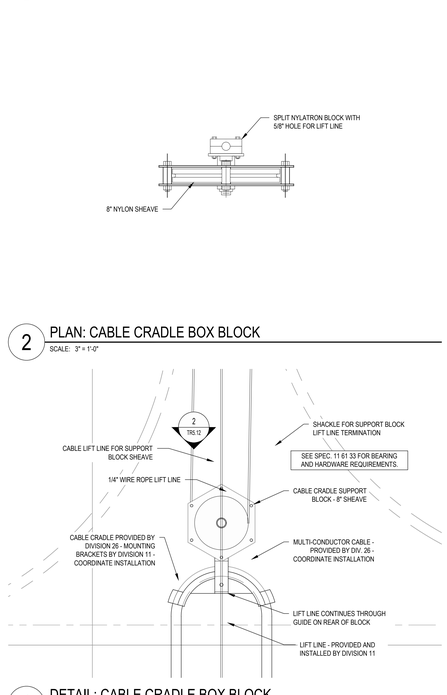


11 DETAIL: TYPICAL ELECTRIC MOUNTING
SCALE: 3" = 1'-0"

7 DETAIL: TYPICAL TRAVELER CURTAIN TRACK
SCALE: 3" = 1'-0"



6 SECTION: TYPICAL HEAD BLOCK
SCALE: 1 1/2" = 1'-0"



2 PLAN: CABLE CRADLE BOX BLOCK
SCALE: 3" = 1'-0"

1 DETAIL: CABLE CRADLE BOX BLOCK
SCALE: 1 1/2" = 1'-0"

DISTRICT 99

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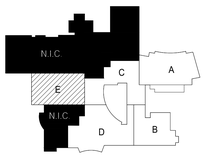

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NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
-	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
-	ISSUED FOR 90% CD - PHASE C	11.01.2019
-	ISSUED FOR 75% CD - PHASE C	10.14.2019
-	ISSUED FOR 25% CD - PHASE C	08.30.2019
-	ISSUED FOR 100% DD - PHASE C	07.12.2019

DOWNERS GROVE SOUTH HIGH SCHOOL

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

THEATRE RIGGING PROSCENIUM THEATRE DETAILS

Project Number:
5274-42
Drawn By:
TK
Sheet:

TR5.12

SET	NAME	(QTY) - LENGTH	TYPE	OPERATION	MOUNTING REMARKS
1	MAIN CURTAIN	(2) 36'-6"	CHANNEL	MANUAL ROPE DRAW	OPERATION STAGE LEFT, TRAILER CHAIN AS REQUIRED
3	PROSCENIUM REDUCTION PANELS	(2) 15'-3"	HEAVY-DUTY CHANNEL	WALK DRAW	OFFSTAGE CARRIER WITH CORD PULL TRACK STOP
16	MIDSTAGE TRAVELER	(2) 36'-6"	CHANNEL	MANUAL ROPE DRAW	OPERATION STAGE LEFT
SL1	STAGE LEFT TABS	(1) 31'-0"	I-BEAM	WALK DRAW	
SR1	STAGE RIGHT TABS	(1) 31'-0"	I-BEAM	WALK DRAW	
31	UPSTAGE TRAVELER	(2) 36'-6"	CHANNEL	MANUAL ROPE DRAW	OPERATION STAGE LEFT
AUDITORIUM RIGGING					
AC1	UPPER PROSCENIUM WALL VARIABLE ACOUSSTIC CURTAIN	(1) 95'-0"	CHANNEL	MOTORIZED ROPE DRAW	SEE DRAWINGS FOR OPERATING CABLE PATH
AP1	HOUSE RIGHT LOWER ACOUSTIC PANEL	(1) 19'-3"	CHANNEL	WALK DRAW	
AP2	HOUSE LEFT LOWER ACOUSTIC PANEL	(1) 19'-3"	CHANNEL	WALK DRAW	
AP3	HOUSE RIGHT UPPER ACOUSTIC PANEL	(1) 31'-3"	CHANNEL	WALK DRAW	
AP4	HOUSE LEFT UPPER ACOUSTIC PANEL	(1) 31'-3"	CHANNEL	WALK DRAW	
AC2	HOUSE RIGHT UPPER SIDE WALL VARIABLE ACOUSTIC CURTAIN	(1) 66'-0"	CHANNEL	MOTORIZED ROPE DRAW	SEE DRAWINGS FOR OPERATING CABLE PATH
AC3	HOUSE LEFT UPPER SIDE WALL VARIABLE ACOUSTIC CURTAIN	(1) 66'-0"	CHANNEL	MOTORIZED ROPE DRAW	SEE DRAWINGS FOR OPERATING CABLE PATH

39

DIMENSIONS ARE PROVIDED FOR GUIDANCE ONLY. SEE SPECIFICATIONS.
CONTRACTOR IS RESPONSIBLE FOR INSPECTING THE CONTRACT DOCUMENTS TO OBTAIN DIMENSIONS. VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO FABRICATING.

PROSCENIUM THEATRE STAGE CURTAIN SCHEDULE

SET	NAME	FABRIC	COLOR	FINISHED SIZE (QTY.) - W X H	SEWING INSTRUCTIONS	TOP FINISH	BOTTOM FINISH	COMMENTS
1	MAIN CURTAIN	25 OZ. PRESTIGE	PER ARCHITECT	(2) 32'-9" X 29'-0"	75% FULLNESS	WEBBING, GROMMETS AND SNAP HOOKS	CHAIN POCKET	
2	BORDER #1	25 OZ. CHARISMA	BLACK	(1) 69'-0" X 10'-0"	FLAT	WEBBING, GROMMETS AND TIES	PIPE POCKET	PROVIDE AND INSTALL 3/4-INCH BOTTOM PIPE
3	PROSCENIUM REDUCTION PANELS	25 OZ. CHARISMA	BLACK	(2) 8'-9" X 25'-6"	FLAT	WEBBING, GROMMETS AND SNAP HOOKS	CHAIN POCKET	PROVIDE AND INSTALL 3/4-INCH BOTTOM PIPE
8	BORDER #2	25 OZ. CHARISMA	BLACK	(1) 69'-0" X 10'-0"	FLAT	WEBBING, GROMMETS AND TIES	PIPE POCKET	PROVIDE AND INSTALL 3/4-INCH BOTTOM PIPE
9	LEGS #1	25 OZ. CHARISMA	BLACK	(2) 11'-0" X 27'-0"	FLAT	WEBBING, GROMMETS AND TIES	CHAIN POCKET	
15	BORDER #3	25 OZ. CHARISMA	BLACK	(1) 69'-0" X 10'-0"	FLAT	WEBBING, GROMMETS AND TIES	PIPE POCKET	PROVIDE AND INSTALL 3/4-INCH BOTTOM PIPE
16	MIDSTAGE TRAVELER	25 OZ. CHARISMA	BLACK	(2) 35'-3" X 27'-0"	50% FULLNESS	WEBBING, GROMMETS AND SNAP HOOKS	CHAIN POCKET	
SL1	TAB CURTAINS STAGE LEFT	25 OZ. CHARISMA	BLACK	(4) 6'-0" X 26'-6"	FLAT	WEBBING, GROMMETS AND SNAP HOOKS	CHAIN POCKET	
SR1	TAB CURTAINS STAGE RIGHT	25 OZ. CHARISMA	BLACK	(4) 6'-0" X 26'-6"	FLAT	WEBBING, GROMMETS AND SNAP HOOKS	CHAIN POCKET	
22	BORDER #4	25 OZ. CHARISMA	BLACK	(1) 69'-0" X 10'-0"	FLAT	WEBBING, GROMMETS AND TIES	PIPE POCKET	PROVIDE AND INSTALL 3/4-INCH BOTTOM PIPE
23	LEGS #2	25 OZ. CHARISMA	BLACK	(2) 11'-0" X 27'-0"	FLAT	WEBBING, GROMMETS AND TIES	CHAIN POCKET	
30	BORDER #5	25 OZ. CHARISMA	BLACK	(1) 69'-0" X 10'-0"	FLAT	WEBBING, GROMMETS AND TIES	PIPE POCKET	PROVIDE AND INSTALL 3/4-INCH BOTTOM PIPE
31	UPSTAGE TRAVELER	25 OZ. CHARISMA	BLACK	(2) 35'-3" X 27'-0"	50% FULLNESS	WEBBING, GROMMETS AND SNAP HOOKS	CHAIN POCKET	
32	BLACK SCRIM	SEE SPEC	BLACK	(1) 68'-0" X 27'-0"	SEE SPEC	WEBBING, GROMMETS AND TIES	PIPE POCKET	PROVIDE AND INSTALL 3/4-INCH BOTTOM PIPE
36	CYCLORAMA	SEE SPEC	SEE SPEC	(1) 68'-0" X 27'-0"	SEE SPEC	WEBBING, GROMMETS AND TIES	PIPE POCKET	PROVIDE AND INSTALL 3/4-INCH BOTTOM PIPE
AUDITORIUM RIGGING								
AC1	UPPER PROSCENIUM WALL VARIABLE ACOUSSTIC CURTAIN	25 OZ. CHARISMA	PER ARCHITECT	(2) 37'-3" X 14'-0"	75% FULLNESS	WEBBING, GROMMETS AND SNAP HOOKS	CHAIN POCKET	
AC2	HOUSE RIGHT UPPER SIDE WALL VARIABLE ACOUSTIC CURTAIN	25 OZ. CHARISMA	PER ARCHITECT	(1) 46'-0" X 14'-3"	75% FULLNESS	WEBBING, GROMMETS AND SNAP HOOKS	CHAIN POCKET	
AC3	HOUSE LEFT UPPER SIDE WALL VARIABLE ACOUSTIC CURTAIN	25 OZ. CHARISMA	PER ARCHITECT	(1) 50'-0" X 14'-3"	75% FULLNESS	WEBBING, GROMMETS AND SNAP HOOKS	CHAIN POCKET	

39

DIMENSIONS AND FABRICS ARE PROVIDED FOR GUIDANCE ONLY. SEE SPECIFICATIONS FOR ALL FABRIC INFORMATION.
CONTRACTOR IS RESPONSIBLE FOR INSPECTING THE CONTRACT DOCUMENTS TO OBTAIN DIMENSIONS. VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO FABRICATING.

PROSCENIUM THEATRE STAGE RIGGING SCHEDULE

SET	NAME	LINESET LOCATION	BATTEN LENGTH	BATTEN TYPE	SUSPENSION	ARBOR TYPE	HEAD BLOCK	LOFT BLOCK	PURCHASE LINES	LIFT LINES	NET PAYLOAD CAPACITY (LBS)	NO. OF LINES	PERMANENTLY ASSIGNED SEE NOTE 1	MOTORIZED EQUIPMENT				COMMENTS
														ASSEMBLY	MOVEMENT TYPE	SPEED	DRUM DIAMETER	
FC	FIRE CURTAIN	0'-3"				N/A	N/A	N/A	N/A	3/8"	AS REQ	6	YES	LINE-SHAFT	PER SPEC		AS REQ	
1	MAIN CURTAIN	1'-6"	70'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8	YES					
2	BORDER #1	2'-2"	70'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						
3	PROSCENIUM REDUCTION PANELS	2'-10"	70'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8	YES					
4	ELECTRIC #1	4'-2"	69'-0"	DOUBLE	UNDERHUNG	N/A	8"	8"	N/A	1/4"	2070	9	YES	PACKAGED HOIST	FIXED	20FPM	AS REQ	
5	UTILITY BATTEN	5'-6"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						
6	ORCHESTRA SHELL CEILING #1	6'-2"	50'-0"	TRUSS	UNDERHUNG	N/A	12"	12"	N/A	3/8"	AS REQ	6	YES	PACKAGED HOIST	FIXED	20FPM	AS REQ	
7	UTILITY BATTEN	7'-6"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						PROVIDED UNDER ALTERNATE BID
8	BORDER #2	8'-2"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						
9	LEGS #1	8'-10"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						
10	ELECTRIC #2	10'-2"	69'-0"	DOUBLE	UNDERHUNG	N/A	8"	8"	N/A	1/4"	2070	9	YES	PACKAGED HOIST	FIXED	20FPM	AS REQ	
11	VIDEO SCREEN	11'-6"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						
12	UTILITY BATTEN	12'-2"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						PROVIDED UNDER ALTERNATE BID
13	UTILITY BATTEN	12'-10"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						PROVIDED UNDER ALTERNATE BID
14	UTILITY BATTEN	13'-6"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						
15	BORDER #3	14'-10"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						
16	MIDSTAGE TRAVELER	15'-6"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						
17	UTILITY BATTEN	16'-2"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						
18	ORCHESTRA SHELL CEILING #2	17'-5"	50'-0"	TRUSS	UNDERHUNG	N/A	12"	12"	N/A	3/8"	AS REQ	6	YES	PACKAGED HOIST	FIXED	20FPM	AS REQ	
SL1	TAB CURTAINS STAGE LEFT	SEE DWG	31'-0"	SINGLE	UPRIGHT	SINGLE	12"	8"	3/4"	1/4"	800	4						
SR1	TAB CURTAINS STAGE RIGHT	SEE DWG	31'-0"	SINGLE	UPRIGHT	SINGLE	12"	8"	3/4"	1/4"	800	4						
19	ELECTRIC #3	18'-10"	69'-0"	DOUBLE	UNDERHUNG	N/A	8"	8"	N/A	1/4"	2070	9	YES	PACKAGED HOIST	FIXED	20FPM	AS REQ	
20	UTILITY BATTEN	20'-2"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						PROVIDED UNDER ALTERNATE BID
21	UTILITY BATTEN	20'-10"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						
22	BORDER #4	21'-6"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						
23	LEGS #2	22'-2"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						
24	UTILITY BATTEN	22'-10"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						PROVIDED UNDER ALTERNATE BID
25	UTILITY BATTEN	23'-6"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						PROVIDED UNDER ALTERNATE BID
26	UTILITY BATTEN	24'-2"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						
27	UTILITY BATTEN	24'-10"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						PROVIDED UNDER ALTERNATE BID
28	ELECTRIC #4	26'-2"	69'-0"	DOUBLE	UNDERHUNG	N/A	8"	8"	N/A	1/4"	2070	9	YES	PACKAGED HOIST	FIXED	20FPM	AS REQ	
29	ORCHESTRA SHELL CEILING #3	27'-5"	50'-0"	TRUSS	UNDERHUNG	N/A	12"	12"	N/A	3/8"	AS REQ	6	YES	PACKAGED HOIST	FIXED	20FPM	AS REQ	
30	BORDER #5	28'-10"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						
31	UPSTAGE TRAVELER	29'-6"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						
32	BLACK SCRIM	30'-2"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						
33	ELECTRIC #5 (CYC)	30'-10"	69'-0"	DOUBLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	2070	9						
34	UTILITY BATTEN	32'-2"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						PROVIDED UNDER ALTERNATE BID
35	UTILITY BATTEN	32'-10"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						
36	CYCLORAMA	33'-6"	69'-0"	SINGLE	UNDERHUNG	SINGLE	12"	8"	3/4"	1/4"	1725	8						
AUDITORIUM RIGGING																		
AC1	PROSCENIUM WALL VARIABLE ACOUSTIC	SEE DWG	95'-0"	SINGLE	SUSPENDED								YES	CURTAIN DRAW	FIXED	20FPM	N/A	
AP1	HOUSE RIGHT LOWER ACOUSTIC PANEL	SEE DWG			DIRECT ATTACH								YES	PANEL				
AP2	HOUSE LEFT LOWER ACOUSTIC PANEL	SEE DWG			DIRECT ATTACH								YES	PANEL				
AP3	HOUSE RIGHT UPPER ACOUSTIC PANEL	SEE DWG			DIRECT ATTACH								YES	PANEL				
AP4	HOUSE LEFT UPPER ACOUSTIC PANEL	SEE DWG			DIRECT ATTACH								YES	PANEL				
AC2	HOUSE RIGHT UPPER SIDE WALL VARIABLE ACOUSTIC CURTAIN	SEE DWG	60'-3"	SINGLE	DIRECT ATTACH								YES	CURTAIN DRAW	FIXED	20FPM	N/A	
AC3	HOUSE LEFT UPPER SIDE WALL VARIABLE ACOUSTIC CURTAIN	SEE DWG	66'-0"	SINGLE	DIRECT ATTACH								YES	CURTAIN DRAW	FIXED	20FPM	N/A	

39

ALL DIMENSIONS MEASURED FROM THE BACK OF THE PROSCENIUM COLUMN.
CONTRACTOR IS RESPONSIBLE FOR INSPECTING THE CONTRACT DOCUMENTS TO OBTAIN DIMENSIONS. VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO FABRICATING TRACKS AND CURTAINS.
SEE CURTAIN AND TRACK SCHEDULES FOR FURTHER INFORMATION.
1. PERMANENTLY ASSIGNED LINESET LABELS TO BE ENGRAVED WITH LINESET NAME. SEE SPECIFICATION FOR CONFIGURATION.

DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

Wight

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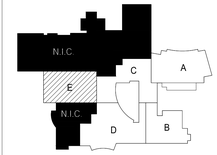

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-	ISSUED FOR 25% CD - PHASE C	08.30.2019
-	ISSUED FOR 100% DD - PHASE C	07.12.2019

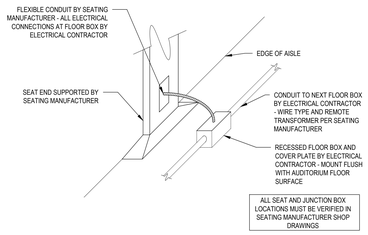
DOWNERS GROVE SOUTH HIGH SCHOOL

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

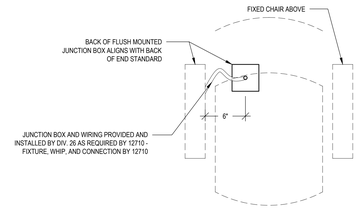
THEATRE RIGGING PROSCENIUM THEATRE SCHEDULES

Project Number:
5274-42
Drawn By:
SK
Sheet:

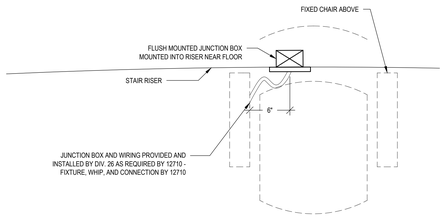
TR6.11



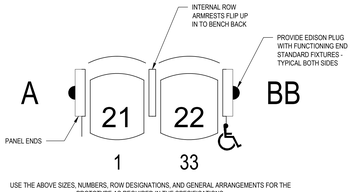
15 DETAIL - AISLE LIGHT POWER FEED
SCALE: 1-1/2" = 1'-0"



10 DETAIL - RISER MOUNTED AISLE LIGHT J-BOX
SCALE: 1-1/2" = 1'-0"

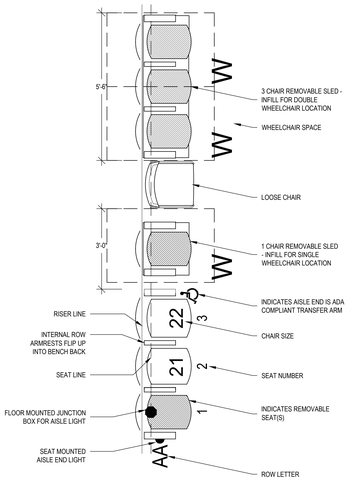


5 DETAIL - FLOOR MOUNTED AISLE LIGHT J-BOX
SCALE: 1-1/2" = 1'-0"



USE THE ABOVE SIZES, NUMBERS, ROW DESIGNATIONS, AND GENERAL ARRANGEMENTS FOR THE PROTOTYPE AS REQUIRED IN THE SPECIFICATIONS.

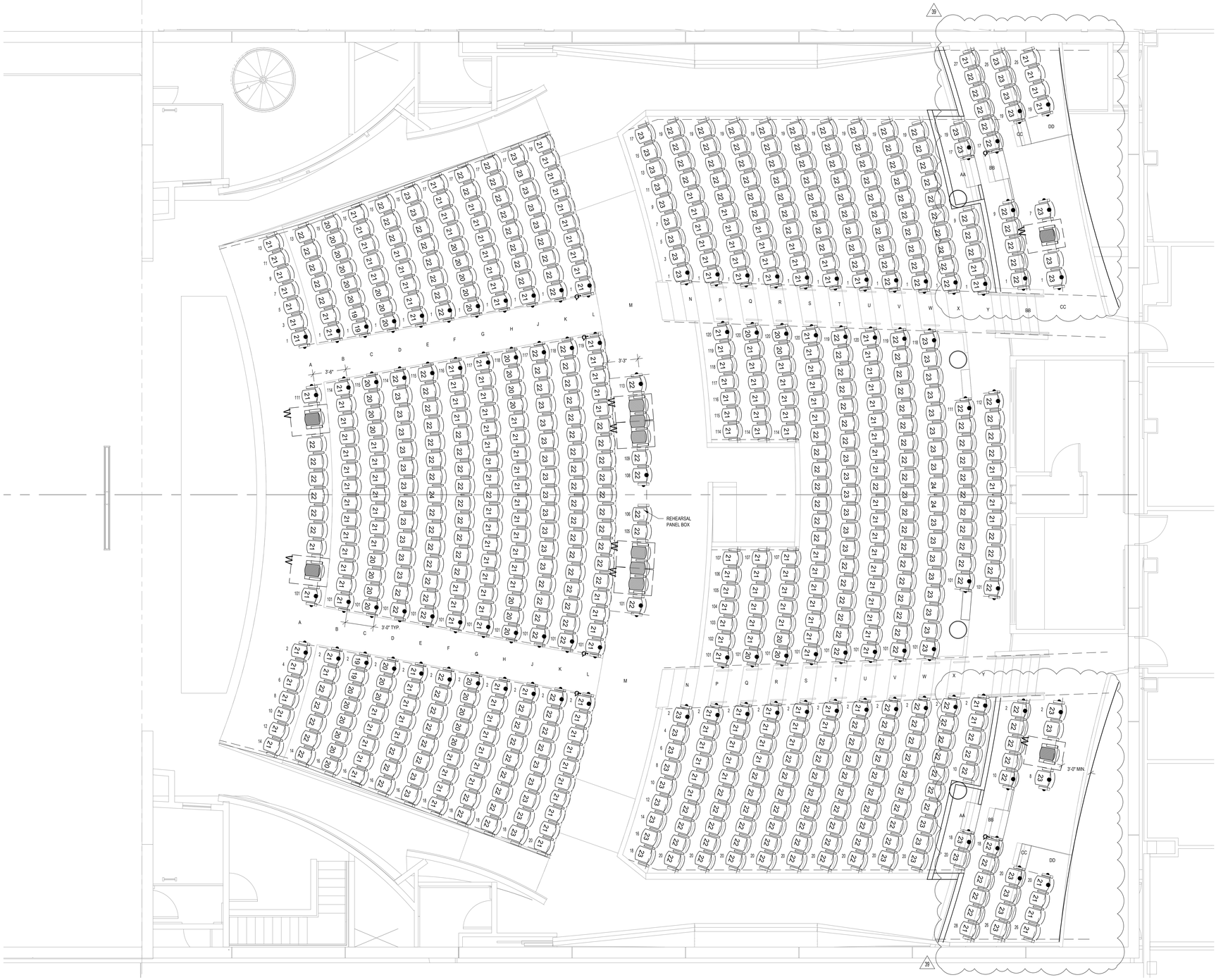
24 CHAIR SAMPLE INFORMATION
SCALE: NONE



22 LEGEND - SEATING
SCALE: NONE

WITH WHEELCHAIRS IN PLACE	
ORCHESTRA SECTION:	362
PARTERRE:	421
BALCONY:	411
WHEELCHAIR POSITIONS:	11
REMOVABLE:	0
TOTAL:	1205
WITH WHEELCHAIR POSITIONS FILLED BY REMOVABLE SEATS	
ORCHESTRA SECTION:	362
PARTERRE:	421
BALCONY:	411
WHEELCHAIR POSITIONS:	0
REMOVABLE:	13
TOTAL:	1207

21 APPROXIMATE SEAT COUNT
SCALE: NONE



1 SEATING PLAN - MAIN FLOOR AND PARTERRE
SCALE: 1/4" = 1'-0"

DISTRICT 99
COMMUNITY HIGH SCHOOL DISTRICT 99

Wight & Company
wightco.com
2500 North Frontage Road
Darien, IL 60561
P 630.969.7000
F 630.969.7979

NORTH

THEATRE PLANNERS / LIGHTING DESIGNERS
Schuler Shook
750 NORTH ORLEANS
CHICAGO, IL 60654
T 312 944 8230 F 312 944 8297
schulershook.com

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
39	ISSUED FOR ADDENDUM 3 - BG8	12.11.2019
-	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
-	ISSUED FOR 90% CD - PHASE C	11.01.2019
-	ISSUED FOR 75% CD - PHASE C	10.14.2019
-	ISSUED FOR 25% CD - PHASE C	08.30.2019
-	ISSUED FOR 100% DD - PHASE C	07.12.2019

DOWNERS GROVE SOUTH HIGH SCHOOL

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

THEATRE SEATING PROSCENIUM THEATRE PLAN

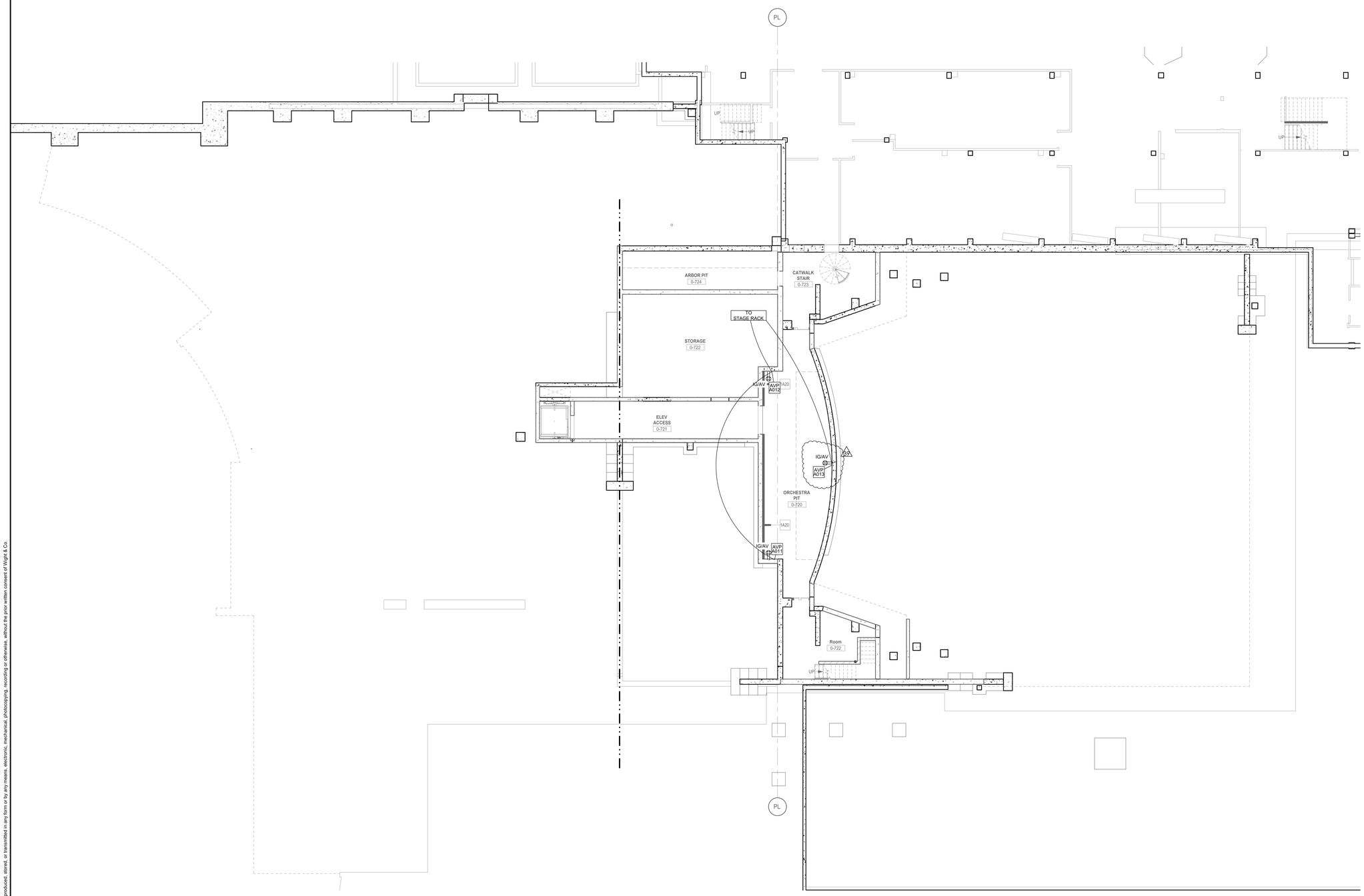
Project Number: 5274-42
Drawn By: SK
Sheet:

TS1.11

AV PANEL, JUNCTION BOX, PULLBOX AND BACKBOX SCHEDULE

PANEL OR BOX #	BOX SIZE HxWxD (IN.)	MOUNTING TYPE	MOUNT HT (C.L. BOX)	PURPOSE
EA2.10E				
AVP-A011	10X10X6	FLUSH	RECP HT.	PIT I/O
AVP-A012	10X10X6	FLUSH	RECP HT	PIT I/O
AVP-A013	6X6X4	FLUSH	RECP HT	PIT I/O

NOTES:
1. CONDUIT/BACKBOXES/CABLE TRAYS FURNISHED & INSTALLED BY E.C.
2. AV PANELS AND AV RACKS TO BE FURNISHED BY AV INTEGRATOR.
3. AV CABLES TO BE SUPPLIED, PULLED AND TERMINATED BY AV INTEGRATOR.
4. E.C.FURNISH/INSTLL J-BOX W/ FLEX CONDUIT AT EACH CEILING LOUDSPEAKER.
5. AV INTEGRATOR INSTALL CEILING LOUDSPEAKERS & TERMINATE CABLE AND FLEX CONDUIT TO LOUDSPEAKER ENCLOSURE.
6. SEE EA0.2 FOR TYPICAL CEILING LOUDSPEAKER MOUNTING DETAIL.



AV CONDUITS SCHEDULE

AV LOCATION FROM	AV LOCATION TO	CONDUIT SIZE PER SIGNAL TYPES M	L	S	V.D	F	X	NOTE
EA2.10F								
AVP-A011	AVP-A012	3/4	1-1/4	1-1/4	1-1/2	-	-	
AVP-A012	STAGE RK	1	1-1/2	2	2-1/2	-	-	
AVP-A013	STAGE RK	-	1	1	1-1/4	-	-	

NOTES:
1. SEE EA0.1 FOR AV SYSTEM CONDUIT REQUIREMENTS.
2. ALL AV CONDUIT 3/4" TRADE DIAMETER IF NOT OTHERWISE NOTED.
3. AV CONDUIT RUNS SHALL BE THE SHORTEST ROUTE POSSIBLE.
4. AV CONDUIT LISTED IS FOR AV CABLE ONLY; ADD CONDUIT AS REQUIED

1 AV LOCATION PLAN - ORCHESTRA PIT
1/8" = 1'-0"

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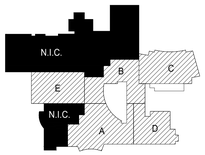

NORTH

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REV	ISSUE	DATE
	ISSUED FOR ADDENDUM 3 - PHASE C, B.G. 8, DELTA 39	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	25% C.D. COORDINATION - PHASE C	11.01.2019
	ISSUED FOR 90% C.D. - PHASE C	08.30.2019
	100% DESIGN DEVELOPMENT - PHASE C	07.12.2019

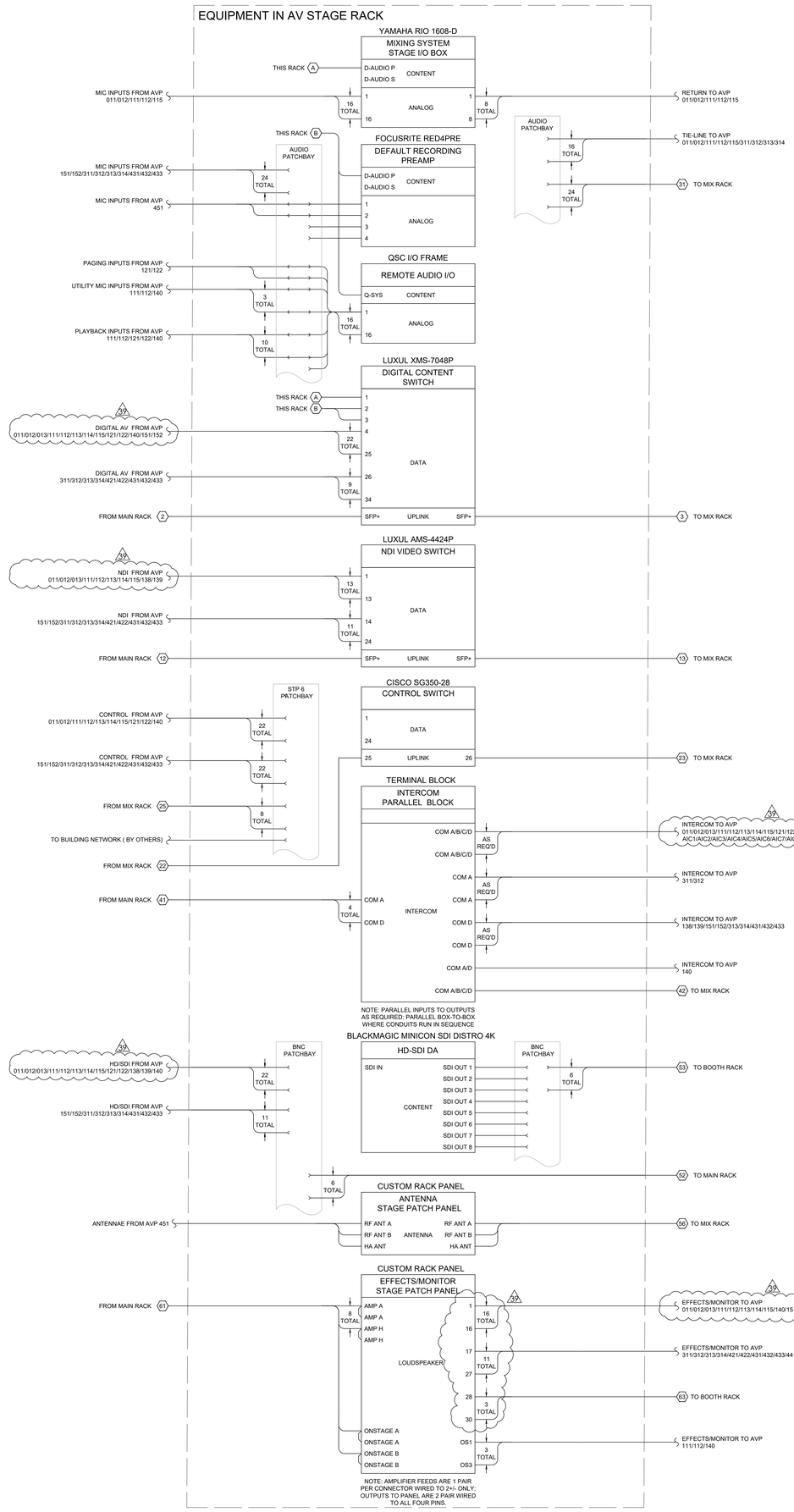
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

ELECTRICAL FOR PERFORMANCE AV - ORCHESTRA PIT LOCATION PLAN

Project Number:
5274-42
Drawn By:
TURPIN
Sheet:

EA2.10F



COMMUNITY HIGH SCHOOL
DISTRICT 99

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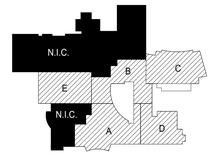

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	ISSUED FOR 90% C.D. - PHASE C	08.30.2019
	100% DESIGN DEVELOPMENT - PHASE C	07.12.2019

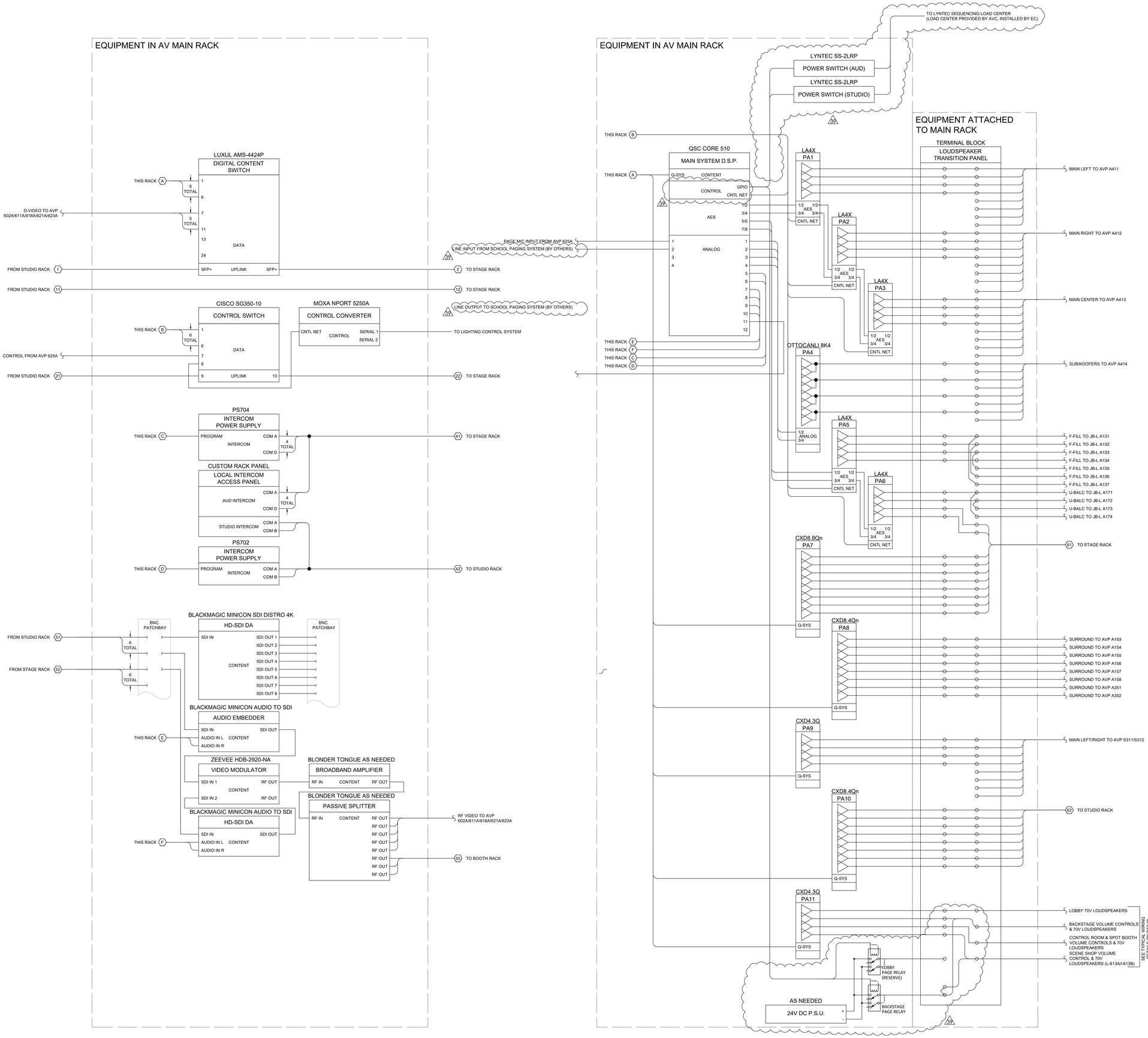
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

PERFORMANCE AV SYSTEMS - AUDITORIUM SIGNAL FLOW, PART A

Project Number:
5274-42
Drawn By:
TURPIN
Sheet:

PA2.01



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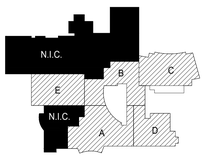

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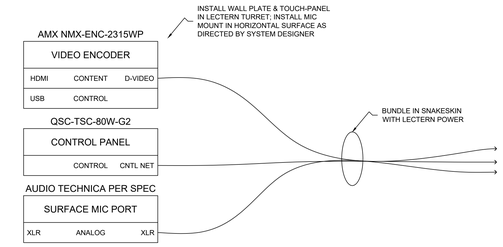
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

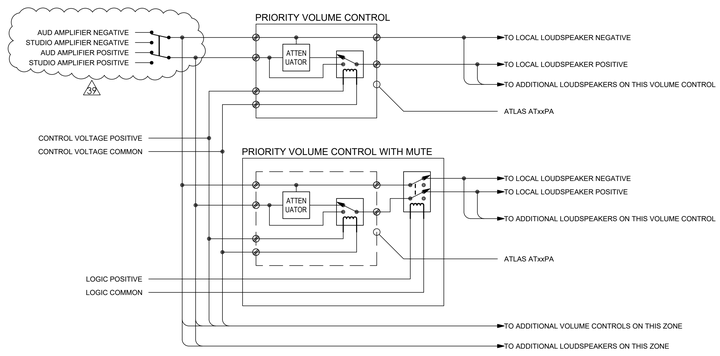
PERFORMANCE AV SYSTEMS - MAIN RACK/LOUDSPEAKER SIGNAL FLOW

Project Number:
5274-42
Drawn By:
TURPIN
Sheet:

PA2.05



4 TYPICAL SIMPLIFIED LECTERN WIRING
N.T.S.



3 TYPICAL 70V VOLUME CONTROL WIRING
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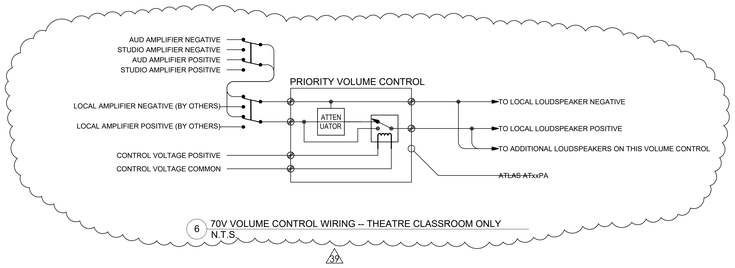
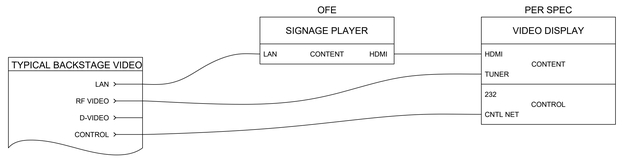
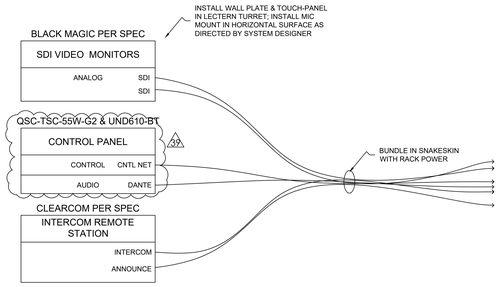


6 70V VOLUME CONTROL WIRING -- THEATRE CLASSROOM ONLY
N.T.S.

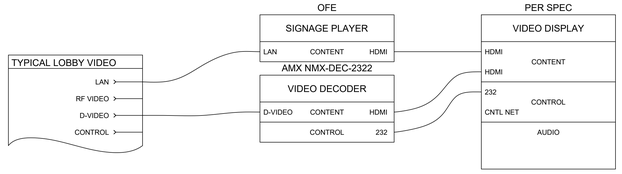


2 TYPICAL BACKSTAGE DISPLAY CONNECTION
N.T.S.

37



5 TYPICAL STAGE MANAGER RACK WIRING
N.T.S.



1 TYPICAL LOBBY DISPLAY CONNECTION
N.T.S.

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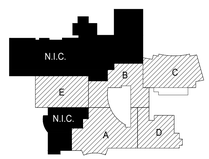

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	ISSUED FOR 90% C.D. - PHASE C	08.30.2019
	100% DESIGN DEVELOPMENT - PHASE C	07.12.2019

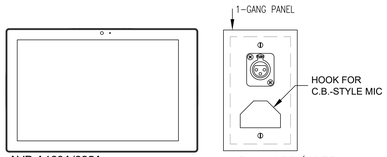
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

PERFORMANCE AV SYSTEMS - AUX SYSTEMS & SIGNAL FLOW DETAILS

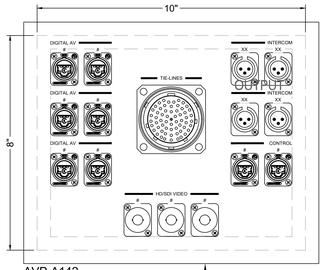
Project Number:
5274-42
Drawn By:
TURPIN
Sheet:

PA2.06



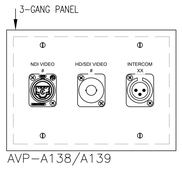
AVP-A163A/625A
QSC TOUCH PANEL

AVP-A163B/625B

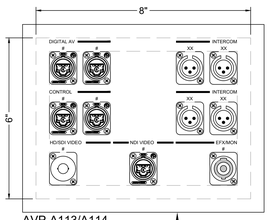


AVP-A142

1/2" OVERLAP
(TYPICAL FOR
FLUSH MOUNTING)

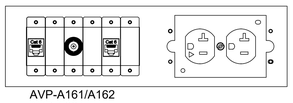


AVP-A138/A139

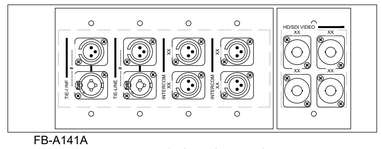


AVP-A113/A114

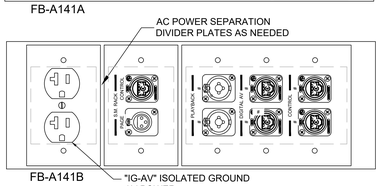
1/2" OVERLAP
(TYPICAL FOR
FLUSH MOUNTING)



AVP-A161/A162
AVP-A331
I.P.S. INSERTS AS
NEEDED TO FIT FSR-PWB
WALL BOX

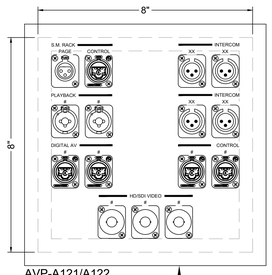


FB-A141A



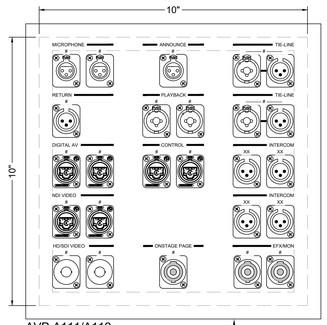
FB-A141B

CUSTOM GANG PANELS
AS SHOWN TO FIT
FSR-600P FLOOR BOX



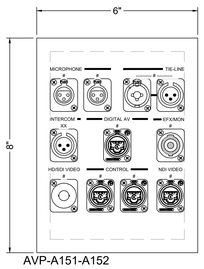
AVP-A121/A122

1/2" OVERLAP
(TYPICAL FOR
FLUSH MOUNTING)

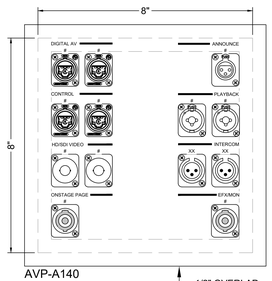


AVP-A111/A112

1/2" OVERLAP
(TYPICAL FOR
FLUSH MOUNTING)

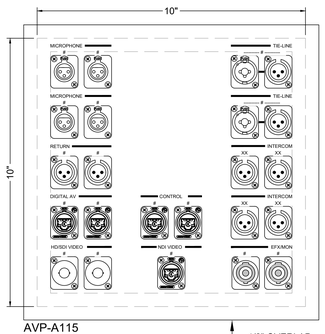


AVP-A151-A152



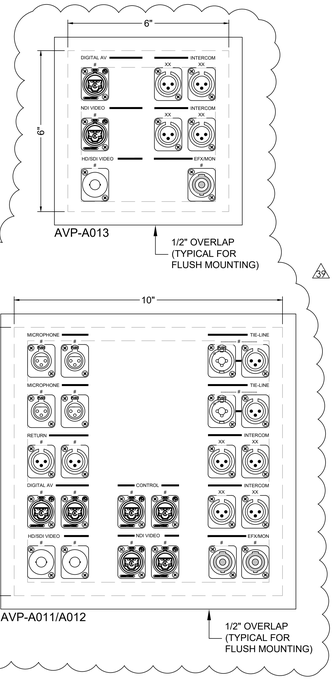
AVP-A140

1/2" OVERLAP
(TYPICAL FOR
FLUSH MOUNTING)



AVP-A115

1/2" OVERLAP
(TYPICAL FOR
FLUSH MOUNTING)



AVP-A013

1/2" OVERLAP
(TYPICAL FOR
FLUSH MOUNTING)

AVP-A011/A012

1/2" OVERLAP
(TYPICAL FOR
FLUSH MOUNTING)

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DISTRICT 99

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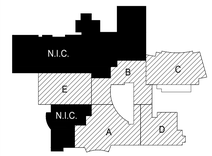

NORTH

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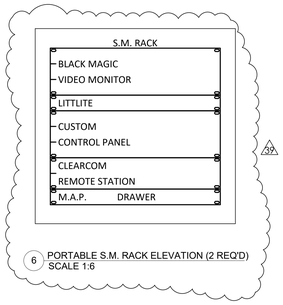
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

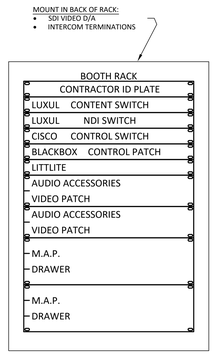
PERFORMANCE AV SYSTEMS - PANEL ELEVATIONS

Project Number:
5274-42
Drawn By:
TURPIN
Sheet:

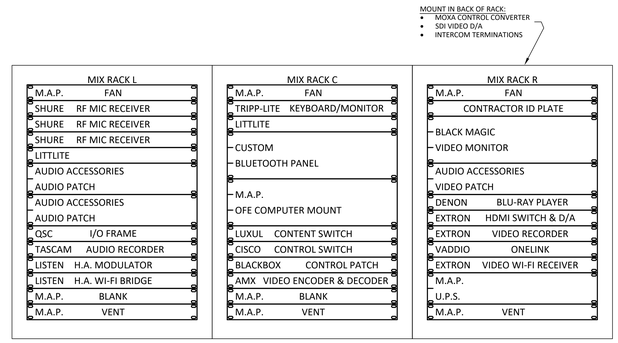
PA3.01



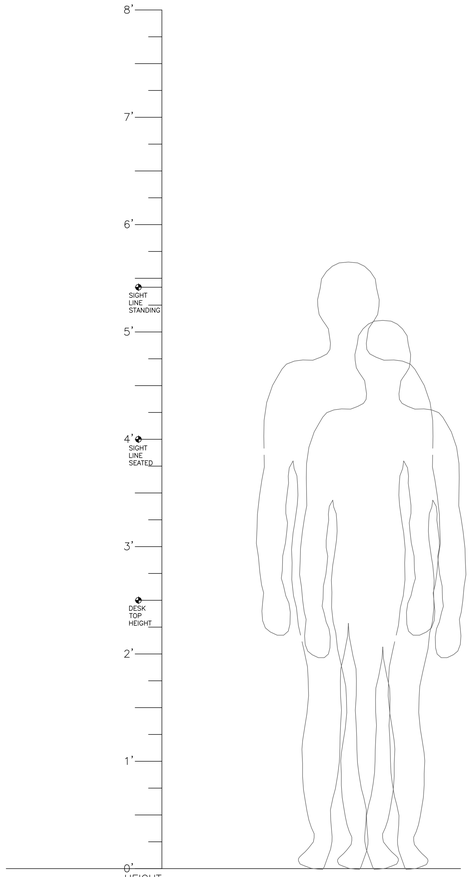
6 PORTABLE S.M. RACK ELEVATION (2 REQ'D)
SCALE 1:6

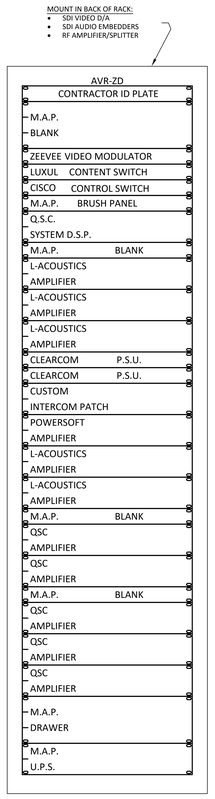


4 BOOTH RACK ELEVATION
SCALE 1:6

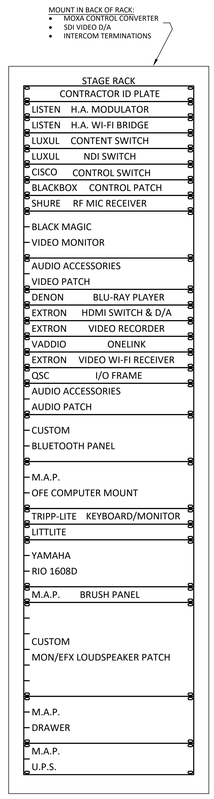


2 MIX RACK ELEVATION
SCALE 1:6

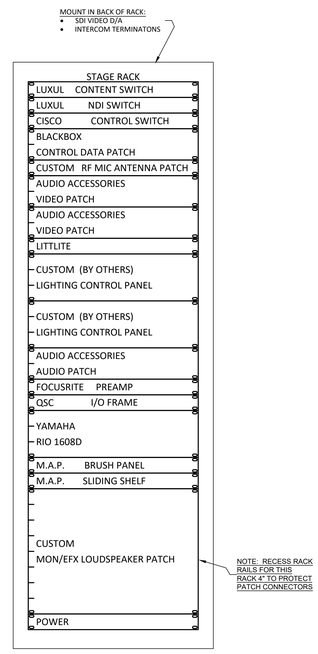




5 MAIN RACK ELEVATION
SCALE 1:6



3 STUDIO RACK ELEVATION
SCALE 1:6



1 STAGE RACK ELEVATION
SCALE 1:6

DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

Wight

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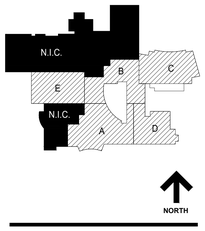

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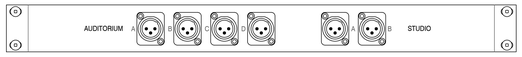
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

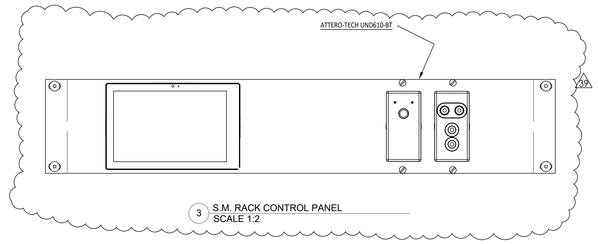
PERFORMANCE AV SYSTEMS - RACK ELEVATIONS

Project Number:
5274-42
Drawn By:
TURPIN
Sheet:

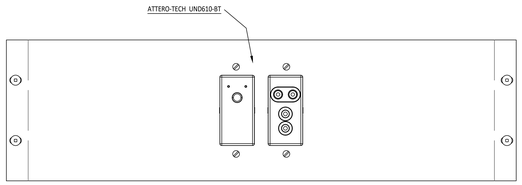
PA4.01



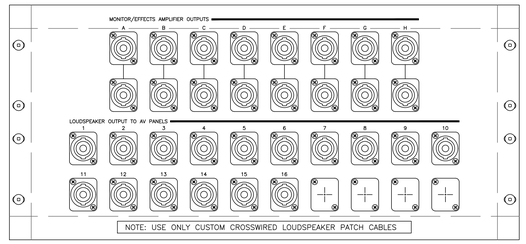
6 MAIN RACK INTERCOM PANEL
SCALE 1:2



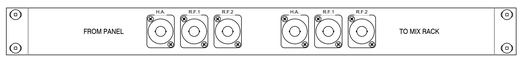
3 S.M. RACK CONTROL PANEL
SCALE 1:2



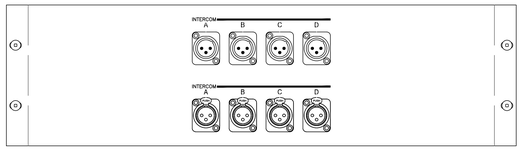
5 TYPICAL BLUETOOTH PANEL
SCALE 1:2



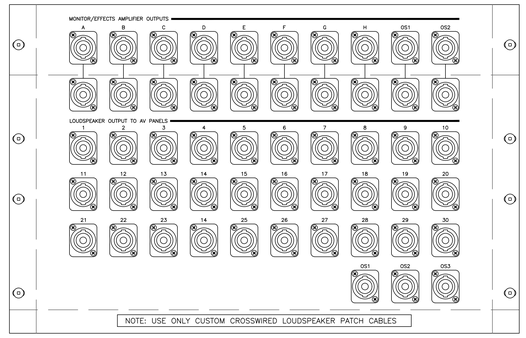
2 STUDIO RACK EFFECTS/MONITOR PATCH
SCALE 1:2



7 STAGE RACK ANTENNA PATCH PANEL
SCALE 1:2



4 S.M. RACK REAR CONNECTION PANEL
SCALE 1:2



1 STAGE RACK EFFECTS/MONITOR PATCH
SCALE 1:2

COMMUNITY HIGH SCHOOL DISTRICT 99

Wight & Company
wightco.com
2500 North Frontage Road
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P 630.969.7000
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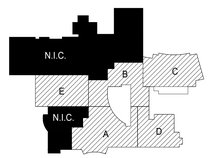

NORTH

NOT FOR CONSTRUCTION

REV	ISSUE	DATE
	ISSUED FOR ADDENDUM 3 - PHASE C, B.G. 8, DELTA 39	12.11.2019
	ISSUED FOR BID GROUP 8 - PHASE C	11.20.2019
	25% C.D. COORDINATION - PHASE C	11.01.2019
	ISSUED FOR 90% C.D. - PHASE C	08.30.2019
	100% DESIGN DEVELOPMENT - PHASE C	07.12.2019

MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

PERFORMANCE AV SYSTEMS - RACK ELEVATIONS

Project Number:
5274-42
Drawn By:
TURPIN
Sheet:

PA4.02

Wight & Company
wightco.com
2500 North Frontage Road
Darien, IL 60561
P 630.969.7000
F 630.969.7979

DATE: December 11, 2019

FROM: Wight & Company
2500 N. Frontage Road
Darien, IL 60561

SUBJECT: ADDENDUM #3 TO THE BIDDING DOCUMENTS FOR:
BID GROUP #8
MASTER FACILITY PLAN IMPLEMENTATION
COMMUNITY HIGH SCHOOL DISTRICT 99
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

This addendum forms a part of the Bidding Contract Documents, dated November 20, 2019. Bidders must acknowledge receipt of this Addendum in the space provided on the Bid Form. Drawing revisions clouded and tagged throughout with delta 39.

SOUTH

I. Clarifications

1. ***CLARIFICATION: The lavatories in the multi-user toilet rooms are currently tagged as LAV-2A. The fixture selections for these rooms are still being finalized with the owner. These fixtures will be specified in an upcoming addendum.***
2. ***QUESTION****:* Can you confirm the width of Skylights C.1 and C.2 on A2.04? Skylight C.3 is shown at 7'-11" wide, but the other two skylights don't have a width dimension shown. They look and scale wider than the C.3 skylight. Please let me know if all 3 skylights are 7'-11" wide. If not, what are the widths of Skylights C.1 and C.2? ***ANSWER: Requested skylight dimensions have been added to sheet A2.04 for skylights C.1 & C.2.***
3. ***QUESTION:*** There are cameras shown with no symbol stating existing to remain (ETR), New (N), existing to be relocated from stock (R) Can you please confirm which type they are? ***ANSWER: All cameras shown on SS series drawings indicate whether they are New or ETR.***
4. ***QUESTION:*** There are some details such as 4 & 9/S3.6C-F that do not show an L against the precast for deck support or diaphragm. At these locations they are not shown in plan either. If we need to include something at these locations, etc we will need L size & means of attachment. ***ANSWER: Details have been revised to show deck angles.***
5. ***QUESTION:*** Reference details 3 & 19/S3.7C-F. Graphically there looks to be a TS member on top of the beams between the joists to help in deck diaphragm. If there is steel here we will to know what size & how it is fastened? ***ANSWER: Refer within for revised details.***
6. ***QUESTION:*** Will a revised curtainwall spec be issued in Addendum? The spec references a captured system whereas the drawings show a butt glazed/captured combination system ***ANSWER: A revised curtainwall specification is included within.***

7. ***QUESTION:*** * Per Addendum 2, Section I, Subsection #3 the contractor states that some of the architectural details show a Kawneer Clearwall System for the curtainwalls. The details & elevations actually show a Kawneer 1600 Wall System 2 w/ SSG horizontals & captured verticals, not a Clearwall System. A Clearwall System is more of a boutique 4 sided toggle glazed system & can not accommodate captured verticals & SSG horizontals as drawn. Please verify that the Kawneer 1600 Wall System 2 is the intended basis of design. ***ANSWER: A revised curtainwall specification is included within.***

8. ***QUESTION:*** Also, no glass type is noted for the aluminum storefront framing shown. ***ANSWER: Provide GL-20.***

9. ***QUESTION:*** Fire Rated spec 084418 only list 2 manufacturers as acceptable for rated glass and rated curtainwall. AGC Inter Edge is not a good option any longer. You are down to a single source in TGP. Will other companies/products be considered? ***ANSWER: Alternate products will be considered with proper substitution request documentation illustrating compliance with the product performance.***

10. ***QUESTION:*** For the Fire Rated Curtainwall System, OptiWhite is not an option for fire rated glazing. It's not a ceramic based product. Please adjust specification or indicate what product is to be used. ***ANSWER: Provide the appropriate fire-rated glazing per specification 088813.***

11. ***QUESTION:*** Exterior Doors at Vestibule1-600 are shown to have a single mullion between the pairs. The doors will bang into each other and are shown to bang into each other. Door manufacturer's will not warranty this design and may not provide a bid. Will the doors be redesigned to match the interior set of doors with a sidelite between them? ***ANSWER: Layout of doors has been revised to include a sidelight between the exterior set of doors. Refer to sheet A2.11F.***

12. ***QUESTION:*** Glass type GL-09 is 2-1/4" thick. This will not fit into specified curtainwall systems. ***ANSWER: Provide GL-04.***

13. ***QUESTION:*** Per elevation 2 2/A7.17 and floor plan A2.11B stair #1-341 has a fire rated framed opening. What glass and framing is correct for this area? The current call outs are not correct. ***ANSWER: Elevation 2/A7.17 need not be fire-rated. Elevation 2/A7.16 is the elevation referenced including the fire-rated curtainwall.***

14. ***QUESTION:*** Floor plan on A2.11D in room 1-211 and 1-212 show a wall partition tag as 2A01. This is a fire rated drywall partition. The corresponding elevations 9 on A7.17 show glass in these openings with no glass type given. What is the correct glass type? Similar 17/A7.17. ***ANSWER: These partitions will be revised to 2A02. Glass type shall be GL-20.***

15. ***QUESTION:*** 11/A7.16 has glass as butt glazed within these openings. GL-20 is only ¼" thick. Is there any concern for deflection beyond guidelines given the height of these panels? ***ANSWER: Glass thickness must meet performance requirements per specification 088000.***

16. ***QUESTION:*** No glass type is given on 3-4-5/A7.17. What is required? ***ANSWER: Provide GL-20.***

17. ***QUESTION:*** A5.05 has numerous details of structural sealant curtainwall without pressure plates and covers. Spec section 084413 basis of design, 1600 wall system 1 is to be captured glass all 4 sides with plates and covers. What's correct? ***ANSWER: A revised curtainwall specification is included within.***

18. ***QUESTION:*** 116133 Part 2.36 F. states panel shall be filled with acoustic absorption material as selected by Acoustics Consultant. It is impossible to price this without knowing the material. Since the drawings show the panels to be roughly 2-¼" thick with the 1/8" hardboard back and fabric face, can the following 2" thick absorptive panel material be approved? ***ANSWER: Acoustic absorption material to be 2" thick fiberglass panel with density of 6-7lbs/cu.ft. per spec section 098413. Backing material to be revised to perforated metal in lieu of hard board. Provide wear strips along bottom and backside.***

19. ***QUESTION:*** Regarding the Audio Visual Package #97: There are no drawings for the Section 274100 Performance Audio-Video Systems. Where would we find those? For the Section 274200 Common Work Results for Audiovisual Systems, is there a block diagram for the LRC. Where are the headend electronics going? Where is the rack to be installed? What amp should be priced? For the Northwest and West Commons area, where is the Samson S-zone mixer located? ***ANSWER: Performance AV drawings are included in Volume 2 of the drawings. AV electronics and rack to be installed at the main desk near keynote 66. Amp wattage to be***

determined based on the speaker count and distance. Head end for the commons area to be located in IDF 1-529A.

20. ***QUESTION:*** Please provide a specification on coiling doors 1613B & 1628B. ***ANSWER: Specification 083323 is included within.***

II. Specifications

1. REVISE Section 000100 – TABLE OF CONTENTS
    a. Typographical errors corrected.
2. ADD Section 083323 – OVERHEAD COILING DOORS.
3. REVISE Section 084413 – GLAZED ALUMINUM CURTAIN WALLS
    a. 2.1 Manufacturers: Curtainwall system revised as indicated.
    b. Structural sealant joints and related sections added.
    c. Quality control measures and related language added regarding structural sealants.
4. REVISE Specification 116133 – Stage Rigging Systems as noted:
    a. ADD – 1.5 - P – Sound Absorbing and Diffusing Wall Panels – Section 098413
    b. REVISE – 2.36-E – Rear of Panel shall be covered with ~~a 1/8-inch thick tempered hardboard~~ **perforated metal panel**. **Panel shall be minimum 20-gauge carbon steel with round perforations. Perforations shall be 1/4-inch on 5/16-inch staggered centers for an open area of not less than 50%.** Paint exposed surfaces black. **Provide plastic edge banding at all panel edges to reduce wear on acoustic fabric.**
    c. REVISE – 2.36-F – Panel shall be filled with **2-inch thick fiberglass panels with a density of 6 to 7 pounds per cubic foot** ~~acoustic absorption material as selected by Acoustics Consultant~~. **Refer to Section 098413 – Sound Absorbing and Diffusing Wall Panels.**
5. REVISE Specification 116153 – Theatrical Luminaires and Accessories as noted:
    a. REVISE – 2.5-K-1-b: Fixtures shall be provided with the following lenses, within a tolerance of +/- 2-degrees:
        i. **32** ~~21~~ degree round
        ii. **50** ~~27~~ degree round
        iii. **29** ~~21~~ degree by **58** ~~37~~ degree oblong
        iv. **76** ~~68~~ degree round
    b. ADD 2.6-A-6 – **All lenses shall be provided with color frame.**
6. REVISE Section 224200 – COMMERCIAL PLUMBING FIXTURES
    a. Paragraph 2.5.A.1.a: Replace “0355.012” with “0356.421.”
    b. Paragraph 2.5.B.1.a: Replace “EBF-650” with “EAF-275-SOL-CP-0.5GPM-AER-IR-IQ-10S-FCT”.
    c. Paragraph 2.5.B.1: REMOVE paragraphs b through d.
    d. Paragraph 2.9: ADD paragraph. Refer to enclosed specification.
7. REVISE specification 274100 – PERFORMANCE AUDIO-VIDEO SYSTEMS
    a. Add verbiage regarding control & DSP programming.
    b. Update projector lens part numbers.

c. Add power sequencing panel controls.
d. Add low-voltage power supply and relays.
e. Add Bluetooth and control for stage manager racks.
f. Add audio SDI video input for portable video displays.
g. Add additional wireless microphones to alternates.

III. Modified Drawings

STRUCTURAL

2. Sheet S0.1C ***(Full size sheet issued)***
    a. Modified note 5 of the steel deck notes which corresponds to the replacement of the commons acoustical cellular roof deck to a regular steel roof deck.
    b. Modified note 1 of the shear connector notes. 6" deep composite slabs require a 4.5" long shear stud.
    c. Added concrete and concrete reinforcement material allowance to account for switchback stair foundations near studio theatre vestibule 1-612
3. Sheet 2.1C-F ***(Full size sheet issued)***
    a. Shifted column R.3/R.6. Updated roof framing accordingly on S2.2C-F. Adjusted grids accordingly.
    b. Revise curved frost wall depression in the same area due to coordinate with door locations.
    c. Adjusted column, pier and footing locations at columns N.4/N.Q and N.12/N.Q.
4. Sheet 2.1C-F-EP1 ***(Full size sheet issued)***
    a. Plan 1:
        i. Adjusted floor opening over horizontal duct plenum near north and south cheek walls.
5. Sheet S2.2C-F ***(Full size sheet issued)***
    a. Plan 1
        i. Revised plan note 11, 16 and added plan notes 31 and 32.
        ii. Added roof drain openings and required framing per typical details.
        iii. Clarified a couple of missing beam sizes.
        iv. Clarified missing kicker information at the canopy roof.
        v. Adjusted column location per S2.1C-F and associated framing.
        vi. Added temporary shoring note north of the stage area.
        vii. Added details 5 and 8 on S3.13C-F.
        viii. Clarified missing transfer post size at canopy, up against the 1973 addition.
    b. Plan 2
        i. Modified 2 beam sizes

6. Sheet S2.3C-F ***(Full size sheet issued)***
    a. Revised plan note 11, 16 and added plan notes 31 and 32.
    b. Added roof drain roof openings and associated framing requirements.
7. Sheet S2.4C-F ***(Full size sheet issued)***
    a. Plan 1
        i. Clarified catwalk framing sizes
        ii. Added detail 4/S3.13C-F
    b. Plan 2
        i. Added missing rigging beams and rigging beam connection requirements.
        ii. Added roof drain slab openings and associated framing requirements.
8. Sheet S2.5C-F ***(Full size sheet issued)***
    a. Revised plan note 11, 16 and added plan notes 31 and 32.
    b. Plan 1
        i. Added shear studs to W8X18 beams only.
        ii. Added detail 4/S3.13C-F
        iii. Clarified catwalk kicker sizes.
        iv. Added details 6/S3.13C-F, 7/S3.13C-F, 1-4/S3.14C-F
        v. Revised catwalk plate size at north end of stage only.
        vi. Added roof drain openings and associated framing requirements.
        vii. Added elevation 6/S4.3C-F
    c. Plan 2
        i. Added details 1-3 on S3.14C-F
        ii. Added roof drain/hatch openings and associated framing requirements.
        iii. Added stiffener requirements for W14 to W21,W24 beam connections.
9. Sheet S2.6C-F ***(Full size sheet issued)***
    a. Plan 7
        i. Clarified missing beam sizes, isolation joint information and beam reaction information.
    b. Plan 8
        i. Revised steel plate thickness over catwalk.
        ii. Clarified detail along precast wall.
10. Sheet S2.7C-F ***(Full size sheet issued)***
    a. Plan 1
        i. Revised beam sizes along the curved steps and along the existing theater step reinforcement.
        ii. Revised some beam dimensions.
        iii. Added details 3/S3.12C-F

b. Plan 2
    i. Revised catwalk steel plate thickness.
c. Plan 3
    i. Revised some beam spacing.
    ii. Added missing beam reaction.
    iii. Added missing isolation joint information.

11. Sheet S2.7C-F ***(Full size sheet issued)***
    a. Plan 1
        i. Added missing isolation joint information.
        ii. Added detail 6/S3.12C-F
        iii. Shifted two columns per foundation plan comments and revised the framing in those areas accordingly.
        iv. Added detail 14/S3.8C-F
        v. Clarified a missing beam size.
    b. Plan 2
        i. Added catwalk member sizes.
        ii. Added details 1-3 on S3.13C-F
12. Sheet S3.1C-F ***(Full size sheet issued)***
    a. Modified detail 6
13. Sheet S3.3C-F ***(Full size sheet issued)***
    a. Modified detail 1
14. Sheet S3.4C-F ***(Full size sheet issued)***
    a. Modified detail 3
15. Sheet S3.6C-F ***(Full size sheet issued)***
    a. Provided missing information to all framing details on this sheet.
16. Sheet S3.7C-F ***(Full size sheet issued)***
    a. Provided missing information to all framing details on this sheet.
17. Sheet S3.8C-F ***(Full size sheet issued)***
    a. Provided missing information to all framing details on this sheet.
18. Sheet S3.9C-F ***(Full size sheet issued)***
    a. Provided missing information to all framing details on this sheet.
19. Sheet S3.10C-F ***(Full size sheet issued)***
    a. Provided missing information to all framing details on this sheet.
20. Sheet S3.11C-F ***(Full size sheet issued)***

a. Provided missing information to all framing details on this sheet.

21. Sheet S3.12C-F ***(Full size sheet issued)***
    a. Provided missing information to details 3 and 6.
22. Added sheets S3.13C-F and S3.14C-F with all new details.
23. Sheet S4.1C-F ***(Full size sheet issued)***
    a. Adjusted an opening on elevation 1.
24. Sheet S4.3C-F ***(Full size sheet issued)***
    a. Added elevation 6.
25. Sheet S4.4C-F ***(Full size sheet issued)***
    a. Modified hanger load on elevation 1
26. Sheet S4.5C-F ***(Full size sheet issued)***
    a. Modified all joist load diagrams to break up the total service load to a service dead and snow loads. Provided missing RTU loads.
27. Sheet S4.7C-F ***(Full size sheet issued)***
    a. Revised detail 1
28. Added new sheet S4.8C-F
29. Sheet S5.1C-F ***(Full size sheet issued)***
    a. Modified column schedule based on column adjustments noted on the foundation sheet.

ARCHITECTURAL

1. Sheet A2.04 OVERALL FLOOR PLAN ***(Full size sheet issued)***
    a. Relocated roof access hatch
2. Sheet A2.11B FLOOR PLAN LEVEL 1 AREA B ***(Full size sheet issued)***
    a. Added Room IDF 1-529A.
    b. Revised transaction window location near 1-129.
    c. Removed folding glass partition between Reception 1-129 and Corridor 1-003. Replace with keynote 22.
3. Sheet A2.11D FLOOR PLAN LEVEL 1 AREA D ***(Full size sheet issued)***
    a. Revised wall types as indicated to 2A12.
4. Sheet A2.11F FLOOR PLAN LEVEL 1 AREA F ***(Full size sheet issued)***
    a. Added keynote #93 at zero clearance thresholds
    b. Added section 4 & 12/A7.26
    c. Revised door 1628B and infilled opening with 8” CMU
    d. Revised dressing room layout

5. Sheet A2.12F FLOOR PLAN LEVEL 1 AREA F ***(Full size sheet issued)***
    a. Added section 4 & 12/A7.26
    b. Revised Upper Parterre seating per TS1.11
    c. Added enlarged stair callout
    d. Partition wall added adjacent to stairs
6. Sheet A2.14F FLOOR PLAN UPPER SEATING AREA F ***(Full size sheet issued)***
    a. Removed rear curved partition below follow spot room
7. Sheet A2.15F FLOOR PLAN CATWALKS ***(Full size sheet issued)***
    a. Removed note regarding Head block beams above stage right pin rail gallery
    b. Relocated roof access hatch
8. Sheet A3.11F REFLECTED CEILING PLAN LEVEL 1 AREA F ***(Full size sheet reissued)***
    a. Added gypsum board ceiling below control room
9. Sheet A3.12F REFLECTED CEILING PLAN LEVEL 2 AREA F ***(Full size sheet issued)***
    a. Added two reflector panels in Studio Theatre
10. Sheet A3.13F REFLECTED CEILING PLAN LEVEL 3 AREA F ***(Full size sheet issued)***
    a. Added gypsum board ceiling below follow spot room
11. Sheet A4.11 PRECAST WALL ELEVATIONS ***(Full size sheet issued)***
    a. Revised location of opening to avoid conflict with catwalk hanger
12. Sheet A5.16 EXTERIOR WALL SECTIONS & DETAILS – PHASE C ***(Full size sheet issued)***
    a. Added gypsum board ceiling below control room
13. Sheet A5.18 EXTERIOR WALL SECTION & DETAILS – PHASE C ***(Full size sheet issued)***
    a. Added detail 15/A5.18 for insulation at truss bearing pocket
    b. Removed isolation hanger from detail 13/A5.18
14. Sheet A6.04 STAIR PLANS & DETAILS – PHASE C ***(Full size sheet issued)***
    a. Added enlarged plan 6/A6.04
15. Sheet A7.18 INTERIOR ELEVATIONS & DETAILS – PHASE C ***(Full size sheet issued)***
    a. Revised dressing room elevations 6,7,9 & 10
16. Sheet A7.26 AUDITORIUM SECTIONS & DETAILS – PHASE C ***(Full size sheet issued)***
    a. Added sections 4 & 12 clarifying upper parterre seating
    b. Duct liner note added in detail 1/A7.26
    c. Revised handrail
17. Sheet A7.27 AUDITORIUM SECTIONS & DETAILS – PHASE C ***(Full size sheet issued)***

a. Revised gypsum board shaping along balcony edge

18. Sheet A7.29 AUDITORIUM SECTIONS & DETAILS – PHASE C ***(Full size sheet issued)***
    a. Revised details 4 & 5
19. Sheet A8.12 DOOR & WINDOW SCHEDULES & DETAILS ***(Full size sheet issued)***
    a. Revised door 1628B to 8' wide

MECHANICAL

1. Sheet MD2.00B.c MECHANICAL DEMOLITION PLAN LOWER LEVEL AREA B ***(Full size sheet issued)***
    a. Revised piping that was shown to be demolished to existing to remain.
    b. Showed existing dual temp and condensate risers to be demolished and capped back at the valves.
2. Sheet MD2.01A.c MECHANICAL DEMOLITION PLAN LEVEL 1 AREA A ***(Full size sheet issued)***
    a. Added demolition sheet to show demolition of existing diffusers and associated ductwork in the cafeteria.
3. Sheet MD2.01F.c MECHANICAL DEMOLITION PLAN LEVEL 1 AREA F ***(Full size sheet issued)***
    a. Revised demolition of entry area, lobby and bathrooms to show clarity.
    b. Revised demolition of dual temperature piping.
4. Sheet M2.01A.c MECHANICAL DUCT FLOOR PLAN LEVEL 1 AREA A ***(Full size sheet issued)***
    a. Added sizes of ductwork and tags for diffusers.
5. Sheet M2.01D.c MECHANICAL DUCT FLOOR PLAN LEVEL 1 AREA D ***(Full size sheet issued)***
    a. Added two return diffusers to the learning resource center.
    b. Revised the ductwork layout of the offices.
6. Sheet M2.01F.c MECHANICAL DUCT FLOOR PLAN LEVEL 1 AREA F ***(Full size sheet issued)***
    a. Revised medium pressure ductwork to the VAV boxes.
    b. Added two supply diffusers to the toilet areas.
7. Sheet M2.02B.c MECHANICAL DUCT FLOOR PLAN LEVEL 2 AREA B ***(Full size sheet issued)***
    a. Added information for the supply diffusers and the electric duct heater serving reading room and office.
8. Sheet M3.00B.c MECHANICAL PIPE FLOOR PLAN LOWER LEVEL AREA B ***(Full size sheet issued)***
    a. Revised existing piping to remain.
    b. New piping shown in the tunnel to serve as temporary piping.
9. Sheet M3.01F.c MECHANICAL PIPE FLOOR PLAN LEVEL 1 AREA F ***(Full size sheet issued)***
    a. Removed multiple summer/winter switch over valves and consolidated to one location.
    b. Revised dual temp pipe routing for the final route.
    c. Added temporary by-pass line.
    d. Added expansion bellows, guides and anchors.
10. Sheet M3.02B.c MECHANICAL PIPE FLOOR PLAN LEVEL 2 AREA B ***(Full size sheet issued)***

a. Revised note for 2-way control valve for VAVs.
b. Added summer/winter switchover valve.
c. Added expansion bellows, guides and anchors

11. Sheet M3.02F.c MECHANICAL PIPE FLOOR PLAN LEVEL 2 AREA F ***(Full size sheet issued)***
    a. Removed summer/winter switchover valve.
    b. Added expansion bellows, guides and anchors
12. Sheet M3.03B.c MECHANICAL PIPE FLOOR PLAN LEVEL 3 AREA B ***(Full size sheet issued)***
    a. Revised note for 2-way control valve for VAVs.
    b. Added summer/winter switchover valve.
    c. Added expansion bellows, guides and anchors
13. Sheet M5.01.c MECHANICAL SCHEDULES ***(Full size sheet issued)***
    a. Added diffuser Tag J

PLUMBING

1. Sheet P1.10B.c SANITARY & DRAINAGE FLOOR PLAN – UNDERGROUND AREA B (PHASE C) ***(Full size sheet reissued)***
    a. Revised underground plumbing.
2. Sheet P1.10F SANITARY & DRAINAGE FLOOR PLAN – UNDERGROUND AREA F ***(Full size sheet reissued)***
    a. Added rerouting of existing downspout piping.
3. Sheet P1.11B.c SANITARY & DRAINAGE FLOOR PLAN – LEVEL 1 AREA B (PHASE C) ***(Full size sheet reissued)***
    a. Added rerouting of existing downspout piping.
4. Sheet P1.11F SANITARY & DRAINAGE FLOOR PLAN – LEVEL 1 AREA F ***(Full size sheet reissued)***
    a. Added rerouting of existing downspout piping.
5. Sheet P1.12B SANITARY & DRAINAGE FLOOR PLAN – LEVEL 2 AREA B ***(Full size sheet reissued)***
    a. Added notation of relocated electric water cooler.
6. Sheet P2.10B WATER DISTRIBUTION FLOOR PLAN – UNDERGROUND AREA B (PHASE C)
    a. ADD sheet in its entirety.
7. Sheet P2.11F WATER DISTRIBUTION FLOOR PLAN – LEVEL 1 AREA F
    a. Revised extent of replacement of hot water main.
    b. Revised fixture LAV-2A to be WF-1 in multi-user toilet rooms. Refer to drawings and clarifications.
8. Sheet P2.12B WATER DISTRIBUTION FLOOR PLAN – LEVEL 2 AREA B
    a. Added note regarding relocated electric water cooler.
9. Sheet P2.13B WATER DISTRIBUTION FLOOR PLAN – LEVEL 3 AREA B

a. Revised fixture tag in public toilet rooms. Tag WF-1 was LAV-1A.

10. Sheet PD1.10B.c PLUMBING DEMOLITION - LOWER LEVEL AREA B (PHASE C) ***(Full size sheet reissued)***
    a. Added demolition of existing underground downspout piping.
11. Sheet PD1.10F PLUMBING DEMOLITION - LOWER LEVEL AREA F ***(Full size sheet reissued)***
    a. Added demolition of fixtures, suspended water piping, underground sanitary piping, and sewage ejector..
12. Sheet PD1.11B.c PLUMBING DEMOLITION – LEVEL 1 AREA B (PHASE C) ***(Full size sheet reissued)***
    a. Added demolition of existing suspended downspout piping.
    b. Added demolition of existing plumbing fixtures.
13. Sheet PD1.11F PLUMBING DEMOLITION – LEVEL 1 AREA F ***(Full size sheet reissued)***
    a. Added additional demolition of piping and floor drain.
14. Sheet PD1.12B PLUMBING DEMOLITION – LEVEL 2 AREA B ***(Full size sheet reissued)***
    a. Added note to clarify demolition of drinking fountain/electric water cooler.
15. Sheet PD1.12F PLUMBING DEMOLITION – LEVEL 2 AREA F ***(Full size sheet reissued)***
    a. Added notes clarifying demolition.

ELECTRICAL

1. Sheet LD0.10 LIGHTING FIXTURE SCHEDULE ***(Full size sheet issued)***
    a. S-series fixture schedule for performance spaces and related adjacent spaces.
2. Sheet ED1.00c EXTERIOR DEMOLITION PLAN ***(Full size sheet reissued)***
    a. Changed (2) keynote #2 to keynote #4.
    b. Changed (5) keynote #1 to keynote #3.
    c. Added keynote #4 to keynotes on sheet.
3. Sheet E2.00F-1c LOWER LEVEL POWER PLAN AREA F ***(Full size sheet reissued)***
    a. Added a wall mounted fourplex receptacle, circuit, tag and added keynote 1.
    b. Updated location of panel pad-2b
4. Sheet E2.01B-1c FIRST FLOOR POWER PLAN AREA B ***(Full size sheet reissued)***
    a. Added power outlets for 1-337, 1-336, 1-335
5. Sheet E2.01D-1c FIRST FLOOR POWER PLAN AREA D ***(Full size sheet reissued)***
    a. Remove (2) receptacles from circuit pcp-1:22 and create a new circuit pcp-1:37.
    b. Remove (2) receptacles from circuit pcp-1:30 and create a new circuit pcp-1:39.
    c. Added keynote #1 to classroom 1-219.
    d. Added sentence to keynote #2.
    e. Added sentence to keynote #10.

6. Sheet E2.01E-1c FIRST FLOOR POWER PLAN AREA E ***(Full size sheet reissued)***
    a. Added circuit number to receptacle.
    b. Move receptacle from dressing room 1-616 to theatre classroom 1-623.
    c. Move receptacle in theatre classroom 1-623 down the wall.
7. Sheet E2.02B-1c SECOND FLOOR POWER PLAN AREA B ***(Full size sheet reissued)***
    a. Tag receptacle in office 2-615.
    b. Tag receptacle in office 2-616.
8. Sheet E2.02F-1c SECOND FLOOR POWER PLAN AREA F ***(Full size sheet reissued)***
    a. Removed signal processing rack power from control room 612
9. Sheet E2.03CF CAT WALK POWER PLAN AREA F ***(Full size sheet reissued)***
    a. Added (4) receptacles and circuit them to pad-6b:35.
    b. Moved power for signal processing rack from control room to follow spot room.
10. Sheet E2.04B-1c ROOF POWER PLAN AREA B ***(Full size sheet reissued)***
    a. Added keynote #1 to hvac equipment disconnect switch.
    b. Circuit and tag thermal switch for ef-7.
    c. Move keynote #1 to point to disconnect switch.
    d. Move keynote #2 to point to motor switch.
    e. Added keynote #1 to thermal switch for ccp-13.
11. Sheet E2.04F-1c ROOF POWER PLAN AREA F ***(Full size sheet reissued)***
    a. Remove sentence from keynote #2.
12. Sheet E3.00F-1c LOWER LEVEL LIGHITNG PLAN AREA F ***(Full size sheet reissued)***
    a. Remove all lights, switches, and occupancy sensors from Elev Access 0-721, Orchestra Pit 0-720, and Arbor 0-724. Lighting fixtures connected to theatrical controls. Local control devices to be digital switches as part of theatrical control system. Refer to LD series sheets for lighting design and quantities.
    b. Added keynote #2 to the keynotes and on the sheet in 3 locations mentioned above.
13. Sheet E3.01A-1c FIRST FLOOR LIGHTING PLAN AREA A ***(Full size sheet reissued)***
    a. Remove keynote #5 since we are showing the circuit for lighting fixture in cafeteria 1-100.
    b. Hide (7) wall luminaries near corridor 1-003.
14. Sheet E3.01B-1c FIRST FLOOR LIGHTING PLAN AREA B ***(Full size sheet reissued)***
    a. Added ceiling mounted occupancy sensor to office 1-337.
    b. Added ceiling mounted occupancy sensor and wall mounted switch to space next to office 1-335.
15. Sheet E3.01F-1c FIRST FLOOR LIGHTING PLAN AREA F ***(Full size sheet reissued)***
    a. Update (2) ceiling mounted occupancy senseors to be day light ocupancy sensors in vest. 1-600.
    b. Added key switch to vest 1-622.

c. Added wall mounted occupancy sensor and keynote #7 to scene shop 1-613.
d. Added switch to elec 1-614.
e. Update the theatre classroom 1-623 lighting and added (2) keynote #4 and a keynote #3.
f. Added keynote 15 to keynotes on sheet.
g. Remove all lights, switches, and occupancy sensors from Vest 1-603, Vest 1-637, Vest 1-644, Vest 1-612, Dressing Rooms 1-618 and 1-621, Vest 1-608, Corridor 1-611, Vest 1-610, and Vest 1-625. Added keynote 15. Lighting fixtures connected to theatrical controls. Local control devices to be digital switches as part of theatrical control system. Refer to LD series sheets for lighting design and quantities.
h. Remove exit sign from outside of vest. 1-631.

16. Sheet E3.02B-1c SECOND FLOOR LIGHTING PLAN AREA B ***(Full size sheet reissued)***
    a. Added one occupancy sensor and key switch to corridor 2-316.
    b. Remove 2 occupancy sensors and key switches from the vestibule
    c. Remove 2 f-4 type downlights.
17. Sheet E3.02D-1c SECOND FLOOR LIGHITNG PLAN AREA D ***(Full size sheet reissued)***
    a. Change keynote #1 to not used and remove keynote 1 from plan.
18. Sheet E3.02F-1c SECOND FLOOR LIGHTING PLAN AREA F ***(Full size sheet reissued)***
    a. Added keynote #6 to keynotes on sheet and added keynote #6 to lights to the upper left area of the scene shop 1-613.
    b. Added a key switch in vestibule.
    c. Tag light in office 2-615.
    d. Tag light in office 2-616.
    e. Replaced the f-24 type of lights in the scene shop with s-13 type per theatre consultants comments.
19. Sheet E5.02c RISER DIAGRAMS ***(Full size sheet reissued)***
    a. Change (2) breaker from existing to remain to existing to be removed in riser diagram 1.
    b. Added (4) existing to be removed callout in riser diagram 1.
    c. Added a existing to be removed label to exiting load in riser diagram 1.
    d. Change callout to indicate 2"c in riser diagram 2.
    e. Change callout to indicate 3#10, 1#10g in riser diagram 2.
20. Sheet E5.04c RISER DIAGRAMS ***(Full size sheet reissued)***
    a. Added wire size for elevator from pad-5
    b. Updated primary wire size for t-ad7
    c. Added ig ground wire for p-av, p-av2, p-av3
    d. Updated phase wire size and conduit size for dmx racks.
    e. Update circuit breaker feeding pad-6 from 100 amp to 150 amp.
    f. Added wire size for spd of mdp-ad3

21. Sheet E5.06c RISER DIAGRAMS ***(Full size sheet reissued)***
    a. Update the voltage to indicate 480/277v on riser diagram 2.
22. Sheet E6.01c SCHEDULES ***(Full size sheet reissued)***
    a. Cloud main device description for panel mdp-l.
23. Sheet E6.02c SCHEDULES ***(Full size sheet reissued)***
    a. Cloud circuit space #29 on panel pad-6b and update load description.
    b. Cloud circuit space #27 on panel p-av and update load description.
    c. Update the main device for mdp-ad1, mdp-ad2, and pad-5 from mlo to mcb
24. Sheet E6.03c SCHEDULES ***(Full size sheet reissued)***
    a. Cloud circuit space #37 on panel pcp-1 and update load description.
    b. Cloud circuit space #39 on panel pcp-1 and update load description.
    c. Assign spare and cloud circuit space #11 on panel pad-1b.
    d. Updated the main device for mdp-ad2 from mlo to mcb
    e. Removed the isolated ground bus for pad-3
25. Sheet E6.04c SCHEDULES ***(Full size sheet reissued)***
    a. Cloud main device description for panel mdp-p.
    b. Added spares to the spare circuits on panel pcl-1.
26. Sheet E6.05c LIGHTING SCHEDULES ***(Full size sheet reissued)***
    a. Removed f-24 from the shcedule.
    b. Added note for theatre consultants lighting fixture schedule.
27. Sheet E7.01 DETAILS ***(Full size sheet reissued)***
    a. Added a text em power to detail 2

THEATRE SYSTEMS

1. Sheet TE6.12 THEATRE LIGHTING & DISTRIBUTION PROSCENIUM THEATRE SCHEDULES ***(Full size sheet issued)***
    a. Corrected load sums in lighting device schedule.
2. Sheet TR1.13 THEATRE RIGGING PROSCENIUM THEATRE PLANS ***(Full size sheet issued)***
    a. Relocation of Proscenium Wall Acoustic Curtain.
    b. Relocation of rear wall acoustic curtains to side walls.
3. Sheet TR2.11 THEATRE RIGGING PROSCENIUM THEATRE SECTION ***(Full size sheet issued)***
    a. Relocation of Proscenium Wall Acoustic Curtain.
4. Sheet TR2.12 THEATRE RIGGING PROSCENIUM THEATRE SECTIONS ***(Full size sheet issued)***
    a. Relocation of rear wall acoustic curtains to side walls.

5. Sheet TR3.22 THEATRE RIGGING PROSCENIUM THEATRE ELEVATION ***(Full size sheet issued)***
    a. Adjusted size of side wall acoustic panels.
6. Sheet TR3.23 THEATRE RIGGING PROSCENIUM THEATRE ELEVATION ***(Full size sheet issued)***
    a. Relocation of Proscenium Wall Acoustic Curtain.
    b. Updated detail for side wall acoustic curtain
7. Sheet TR5.12 THEATRE RIGGING PROSCENIUM THEATRE DETAILS ***(Full size sheet issued)***
    a. Updated detail for side wall acoustic panels
    b. Removed Rear wall acoustic curtain detail
8. Sheet TR6.11 THEATRE RIGGING PROSCENIUM THEATRE SCHEDULES ***(Full size sheet issued)***
    a. Updated schedules for adjusted acoustic curtains
9. Sheet TS1.11 THEATRE SEATING PROSCENUM THEATRE PLAN ***(Full size sheet issued)***
    a. Added row of seating at rear of parterre and sketch rear wall.

ELECTRICAL FOR AV

1. Sheet EA2.10F ELECTRICAL FOR AV SYSTEMS - ORCHESTRA PIT LOCATIONS ***(Full size sheet issued)***
    a. Add panel AV013 and update conduit.

ELECTRICAL FOR AV

1. Sheet PA2.01 PERFORMANCE AV SYSTEMS - AUDITORIUM SIGNAL FLOW A ***(Full size sheet issued)***
    a. Add panel AV013 and update cabling.
2. Sheet PA2.05 PERFORMANCE AV SYSTEMS – MAIN RACK SIGNAL FLOW ***(Full size sheet issued)***
    a. Add power sequencing panel controls.
    b. Add low-voltage power supply and relays.
3. Sheet PA2.06 PERFORMANCE AV SYSTEMS – SIGNAL FLOW DETAILS ***(Full size sheet issued)***
    a. Update volume control wiring.
    b. Update stage manager rack wiring.
4. Sheet PA3.01 PERFORMANCE AV SYSTEMS - PANEL ELEVATIONS ***(Full size sheet issued)***
    a. Add panel AV013.
5. Sheet PA4.01 PERFORMANCE AV SYSTEMS - RACK ELEVATIONS ***(Full size sheet issued)***
    a. Update stage manager rack.
6. Sheet PA4.02 PERFORMANCE AV SYSTEMS - RACK ELEVATIONS ***(Full size sheet issued)***
    a. Update stage manager rack.

This addendum consists of: (16) Text Pages (6) Specification Sections and (119) Drawing Sheets.

END OF ADDENDUM

SPECIFICATIONS

PROJECT: Master Facility Plan Implementation

Downers Grove North High School
4436 Main Street
Downers Grove, Illinois 60515

OWNER: Community High School District 99
6301 Springside Avenue
Downers Grove, IL 60516

BID GROUP 8

Division	Section Title

SPECIFICATIONS GROUP

General Requirements Subgroup

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013300 SUBMITTALS
014200 REFERENCES
015526 TRAFFIC CONTROL
016000 PRODUCT REQUIREMENTS
016400 SUBSTITUTION REQUEST FORM
017823 OPERATIONS AND MAINTENANCE DATA
017900 DEMONSTRATION AND TRAINING
018636 AMBIENT NOISE LEVELS
019113 GENERAL COMISSIONING REQUIREMENTS
019114 COMISSIONING AUTHORITY RESPONSIBILITIES

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024113.13 PAVING REMOVAL
024113.15 SAW CUTTING PAVEMENT
024116 STRUCUTRAL DEMOLITION
024119 SELECTIVE BUILDING DEMOLITION

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033660 CONCRETE SEALER
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052100 STEEL JOIST FRAMING
053100 STEEL DECKING
054000 COLD-FORMED METAL FRAMING
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057300 DECORATIVE METAL RAILINGS

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064000 ARCHITECTURAL WOODWORK

DIVISION 07 - THERMAL AND MOISTURE PROTECTION
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072100 THERMAL INSULATION
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072129 ACOUSTIC SPRAY INSULATION
072726 FLUID APPLIED MEMBRANE AIR BARRIERS
074013 COMPOSITE FRAMING SUPPORT SYSTEMS
074213.23 METAL COMPOSITE MATERIAL WALL PANELS
075323 EPDM ROOFING
076200 SHEET METAL FLASHING AND TRIM
077029 MANUFACTURED ROOF AND WALL EXPANSION JOINTS
077200 ROOF ACCESSORIES
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Facility Services Subgroup

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238216.14 ELECTRIC RESISTANCE AIR COILS
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SECTION 083323 – OVERHEAD COILING DOORS (Addendum No. 3)

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 insulated, fire-rated service doors.

B. Related Requirements:

1. Division 05 Section "Metal Fabrications" for miscellaneous steel supports.
2. Division 26 Sections for electrical service and connections for powered operators and accessories.

1.3 ACTION SUBMITTALS

A. Product Data: For each type and size of overhead coiling door and accessory. Include the following:

1. Construction details, material descriptions, dimensions of individual components, profiles for slats, and finishes.
2. Rated capacities, operating characteristics, electrical characteristics, and furnished accessories.
3. For fire-rated doors, description of fire-release system including testing and resetting instructions.

B. Shop Drawings: For each installation and for special components not dimensioned or detailed in manufacturer's product data. 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. Show locations of replaceable fusible links.
3. Wiring Diagrams: For power, signal, and control wiring.

C. Samples for Initial Selection: Manufacturer's finish charts showing full range of colors and textures available for units with factory-applied finishes.

1. Include similar Samples of accessories involving color selection.

D. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below.

1. Curtain Slats: 12-inch length.
2. Bottom Bar: 6-inch length.
3. Guides: 6-inch length.
4. Brackets: 6 inches square.
5. Hood: 6 inches square.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.

B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating compliance with requirements.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For overhead coiling doors to include in maintenance manuals.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for both installation and maintenance of units required for this Project.

B. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at as close to neutral pressure as possible according to NFPA 252 or UL 10B.

1. Smoke Control: In corridors and smoke barriers, provide doors that are listed and labeled with the letter "S" on the fire-rating label by a qualified testing agency for smoke- and draft-control based on testing according to UL 1784; with maximum air-leakage rate of 3.0 cfm/sq. ft. of door opening at 0.10 inch wg for both ambient and elevated temperature tests.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

D. Regulatory Requirements: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines, ICC A117.1 and the Illinois Accessibility Code.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Cookson Company.
2. Cornell Iron Works Inc.
3. McKeon Coiling Steel Door Company, Inc.
4. Overhead Door Corporation.
5. Raynor.
6. Wayne-Dalton Corp.
7. Windsor Door.

B. Source Limitations: Obtain overhead coiling doors through one source from a single manufacturer.

1. Obtain operators and controls from the overhead coiling door manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Structural Performance, Exterior Doors: Exterior overhead coiling doors shall withstand the wind loads, the effects of gravity loads, and loads and stresses within limits and under conditions indicated according to SEI/ASCE 7.

1. Wind Loads: As indicated on Drawings.
2. Deflection Limits: Design overhead coiling doors to withstand design wind load without evidencing permanent deformation or disengagement of door components.

B. Operation Cycles: Provide overhead coiling door components and operators capable of operating for not less than number of cycles indicated for each door. One operation cycle is complete when a door is opened from the closed position to the fully open position and returned to the closed position.

2.3 DOOR ASSEMBLIES

A. Insulated, Fire-Rated Service Door: Overhead coiling door formed with curtain of interlocking metal slats.

1. Operation Cycles: Not less than 20,000.
2. Fire Rating: 2 hours with smoke control.
3. Air Infiltration: Maximum rate of 1.0 cfm/sq. ft. at 15 and 25 mph when tested according to ASTM E283.
4. Curtain R-Value: Manufacturer's standard, but not less than 4.75 deg F x h x sq. ft./Btu.
5. Door Curtain Material: Galvanized steel.

6. Door Curtain Slats: Flat profile slats of 2-5/8-inch center-to-center height.
7. Curtain Jamb Guides: Galvanized steel with exposed finish matching curtain slats.
8. Hood: Match curtain material and finish.

    a. Shape: Round.
    b. Mounting: As indicated on Drawings.

9. Electric Door Operator:

    a. Usage Classification: Standard duty, up to 60 cycles per hour.
    b. Operator Location: Wall.
    c. Motor Exposure: Interior.
    d. Emergency Manual Operation: Crank type.
    e. Obstruction-Detection Device: Automatic wireless sensor; self-monitoring type.
    f. Control Station: Interior.

        1) Security Features: Keyswitch operation.

10. Door Finish:

    a. Baked-Enamel or Powder-Coated Finish: Color as selected by Architect from manufacturer's full range.

2.4 DOOR CURTAIN MATERIALS AND CONSTRUCTION

A. Door Curtains: Fabricate overhead coiling-door curtain of interlocking metal slats, designed to withstand wind loading indicated, in a continuous length for width of door without splices. Unless otherwise indicated, provide slats of thickness and mechanical properties recommended by door manufacturer for performance, size, and type of door indicated, and as follows:

1. Steel Door Curtain Slats: Zinc-coated (galvanized), cold-rolled structural steel sheet; complying with ASTM A 653, with G90 zinc coating; nominal sheet thickness (coated) of 0.028 inch and as required to meet requirements.
2. Insulation: Fill slats for insulated doors with manufacturer's standard thermal insulation complying with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, according to ASTM E 84. Enclose insulation completely within slat faces.
3. Metal Interior Curtain-Slat Facing: Match metal of exterior curtain-slat face.

B. Endlocks and Windlocks for Service Doors: Malleable-iron casings galvanized after fabrication, secured to curtain slats with galvanized rivets or high-strength nylon. Provide locks on not less than alternate curtain slats for curtain alignment and resistance against lateral movement.

C. Bottom Bar for Service Doors: Consisting of two angles, each not less than 1-1/2 by 1-1/2 by 1/8 inch thick; fabricated from manufacturer's standard hot-dip galvanized steel to match curtain slats and finish.

D. Curtain Jamb Guides: Manufacturer's standard angles or channels and angles of same material and finish as curtain slats unless otherwise indicated, with sufficient depth and strength to retain curtain, to allow curtain to operate smoothly, and to withstand loading. Slot bolt holes for guide adjustment. Provide removable stops on guides to prevent overtravel of curtain, and a continuous bar for holding windlocks.

2.5 HOODS

A. General: Form sheet metal hood to entirely enclose coiled curtain and operating mechanism at opening head. Contour to fit end brackets to which hood is attached. Roll and reinforce top and bottom edges for stiffness. Form closed ends for surface-mounted hoods and fascia for any portion of between-jamb mounting that projects beyond wall face. Equip hood with intermediate support brackets as required to prevent sagging.

1. Galvanized Steel: Nominal 0.028-inch thick, hot-dip galvanized steel sheet with G90 zinc coating, complying with ASTM A 653.
2. Include automatic drop baffle on fire-rated doors to guard against passage of smoke or flame.

2.6 CURTAIN ACCESSORIES

A. Smoke Seals: Equip each fire-rated door with smoke-seal perimeter gaskets for smoke and draft control as required for door listing and labeling by a qualified testing agency.

B. Weatherseals: Equip each exterior door with weather-stripping gaskets fitted to entire perimeter of door for a weathertight installation, unless otherwise indicated.

1. At door head, use 1/8-inch- thick, replaceable, continuous sheet secured to inside of hood.
2. At door jambs, use replaceable, adjustable, continuous, flexible, 1/8-inch- thick seals of flexible vinyl, rubber, or neoprene.

C. Automatic-Closing Device for Fire-Rated Doors: Equip each fire-rated door with an automatic-closing device that is inoperative during normal door operations and that has a governor unit complying with NFPA 80 and an easily tested and reset release mechanism designed to be activated by the following:

1. Replaceable fusible links with temperature rise and melting point of 165 deg F interconnected and mounted on both sides of door opening.
2. Manufacturer's standard UL-labeled smoke detector and door-holder-release devices.
3. Building fire-detection and -alarm systems and manufacturer's standard door-holder-release devices.
4. Closing Speed: Not more than 9- and not less then 6-inches per second.

5. Provide test and reset lever to test release function and reset door from floor without tools or special training. Test lever shall be lockable by Owner-furnished padlock. Resetting spring tension or mechanical dropouts shall not be required.

    a. Basis-of-Design Product: Subject to compliance with requirements, provide Cornell Iron Works Inc.; M100 FireGard Closing System, or equal.

2.7 COUNTERBALANCING MECHANISM

A. General: Counterbalance doors by means of manufacturer's standard mechanism with an adjustable-tension, steel helical torsion spring mounted around a steel shaft and contained in a spring barrel connected to top of curtain with barrel rings. Use grease-sealed bearings or self-lubricating graphite bearings for rotating members.

B. Counterbalance Barrel: Fabricate spring barrel of manufacturer's standard hot-formed, structural-quality, welded or seamless carbon-steel pipe, of sufficient diameter and wall thickness to support rolled-up curtain without distortion of slats and to limit barrel deflection to not more than 0.03 in./ft. of span under full load.

C. Spring Balance: One or more oil-tempered, heat-treated steel helical torsion springs. Size springs to counterbalance weight of curtain, with uniform adjustment accessible from outside barrel. Secure ends of springs to barrel and shaft with cast-steel barrel plugs.

D. Torsion Rod for Counterbalance Shaft: Fabricate of manufacturer's standard cold-rolled steel, sized to hold fixed spring ends and carry torsional load.

E. Brackets: Manufacturer's standard mounting brackets of either cast iron or cold-rolled steel plate.

2.8 ELECTRIC DOOR OPERATORS

A. General: Electric door operator assembly of size and capacity recommended and provided by door manufacturer for door and operation-cycles requirement specified, with electric motor and factory-prewired motor controls, starter, gear-reduction unit, solenoid-operated brake, clutch, remote-control stations, control devices, integral gearing for locking door, and accessories required for proper operation.

1. Comply with NFPA 70.
2. Provide control equipment complying with NEMA ICS 1, NEMA ICS 2, and NEMA ICS 6, with NFPA 70 Class 2 control circuit, maximum 24 V, ac or dc.

B. Usage Classification: Electric operator and components capable of operating for not less than number of cycles per hour indicated for each door.

C. Door Operator Location(s): Operator location indicated for each door.

1. Provide wall-, hood-, or bracket-mounted, jackshaft, gear-head hoist-type door operator unit consisting of electric motor, enclosed worm-gear running-in-oil

primary drive, chain and sprocket secondary drive, and auxiliary chain-hoist and floor level disconnect.

D. Electric Motors: Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements specified in Division 26 Sections unless otherwise indicated.

1. Electrical Characteristics:

a. Type: Polyphase, medium-induction type.
b. Service Factor: According to NEMA MG 1, unless otherwise indicated.
c. Coordinate wiring requirements and electric characteristics of motors with building electrical system.
d. Provide open dripproof-type motor, and controller with NEMA ICS 6, Type 1 enclosure.

2. Motor Type and Controller: Reversible motor and controller (disconnect switch) for motor exposure indicated.
3. Motor Size: Minimum size as indicated. If not indicated, large enough to start, accelerate, and operate door in either direction from any position, at a speed not less than 8 in./sec. and not more than 12 in./sec., without exceeding nameplate ratings or service factor.
4. Operating Controls, Controllers (Disconnect Switches), Wiring Devices, and Wiring: Manufacturer's standard unless otherwise indicated.
5. Coordinate wiring requirements and electrical characteristics of motors and other electrical devices with building electrical system and each location where installed.

E. Limit Switches: Equip each motorized door with adjustable switches interlocked with motor controls and set to automatically stop door at fully opened and fully closed positions.

F. Obstruction Detection Device: Equip motorized door with indicated external automatic safety sensor capable of protecting full width of door opening. For non-fire-rated doors, activation of device immediately stops and reverses downward door travel.

1. Sensor Edge: Automatic safety sensor edge, located within astragal or weather stripping mounted to bottom bar. Contact with sensor activates device. Connect to control circuit using manufacturer's standard radio-controlled obstruction safety edge.

a. Wireless Self-Monitoring Type: Device designed to eliminate need for traveling-electric cord connection between bottom bar sensing edge and motor operator, and designed to interface with grille operator control circuit to detect damage to or disconnection of sensor edge.

G. Remote-Control Station: Sustained-contact, spring key station labeled "Open" and "Close."

1. Interior units, full-guarded, surface-mounted, heavy-duty type, with general-purpose NEMA ICS 6, Type 1 enclosure.

2. Keyswitch Operation: Push buttons are activated and deactivated by security keyswitch operation. Key is removable in either position.

H. Motor Removal: Design operator so motor may be removed without disturbing limit-switch adjustment and without affecting emergency manual operation.

2.9 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.10 STEEL AND GALVANIZED-STEEL FINISHES

A. Baked-Enamel or Powder-Coat Finish: Manufacturer's standard baked-on finish consisting of prime coat and thermosetting topcoat. Comply with coating manufacturer's written instructions for cleaning, pretreatment, application, and minimum dry film thickness.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates areas and conditions, with Installer present, for compliance with requirements for substrate construction and other conditions affecting performance of the Work.

B. Examine locations of electrical connections.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install overhead coiling doors and operating equipment complete with necessary hardware, anchors, inserts, hangers, and equipment supports; according to manufacturer's written instructions and as specified.

B. Install overhead coiling doors, hoods, and operators at the mounting locations indicated for each door.

C. Accessibility: Install overhead coiling doors, switches, and controls along accessible routes in compliance with regulatory requirements for accessibility.

D. Fire-Rated Doors: Install according to NFPA 80.

E. Power-Operated Doors: Install according to UL 325.

3.3 STARTUP SERVICE

A. Engage a factory-authorized service representative to perform startup service.

1. Perform installation and startup checks according to manufacturer's written instructions.
2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
3. Test door closing when activated by detector or alarm-connected fire-release system. Reset door-closing mechanism after successful test.

3.4 ADJUSTING

A. Adjust hardware and moving parts to function smoothly so that doors operate easily, free of warp, twist, or distortion.

B. Lubricate bearings and sliding parts as recommended by manufacturer.

C. Adjust seals to provide weathertight fit around entire perimeter.

3.5 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain overhead coiling doors.

END OF SECTION 083323

SECTION 084413 – GLAZED ALUMINUM CURTAIN WALLS

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 glazed aluminum curtain walls.

B. Related Requirements:

1. Division 07 Section "Joint Sealants" for installation of joint sealants installed with glazed aluminum curtain-wall systems and for sealants to the extent not specified in this Section.
2. Division 08 Section "Aluminum Entrances and Storefronts" for entrance and storefront systems installed with glazed aluminum curtain-wall systems.
3. Division 08 Section "Glazing" for insulating-glass requirements.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of product indicated.

B. Sustainable Design Submittals:

1. Laboratory Test Reports: For glazing sealants used inside the weatherproofing system, documentation indicating compliance with requirements for low-emitting materials.

C. Shop Drawings: For glazed aluminum curtain walls. Include plans, elevations, sections, full-size details, and attachments to other work.

1. Include details of provisions for assembly expansion and contraction and for draining moisture occurring within the assembly to the exterior.

2. Include full-size isometric details of each vertical-to-horizontal intersection of glazed aluminum curtain walls, showing the following:

    a. Joinery, including concealed welds.
    b. Anchorage.
    c. Expansion provisions.
    d. Glazing.
    e. Flashing and drainage.

D. Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes.

E. Delegated-Design Submittal: For glazed aluminum curtain walls indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer and Illinois-licensed structural engineer.

B. Energy Performance Certificates: For glazed aluminum curtain walls, accessories, and components, from manufacturer.

1. Basis for Certification: NFRC-certified energy performance values for each glazed aluminum curtain wall.

C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for glazed aluminum curtain-wall systems.

D. Quality-Control Program: Developed specifically for Project, including fabrication and installation, according to recommendations in ASTM C 1401. Include periodic quality-control reports. (Addendum No. 2)

E. Sample Warranties: Special warranties specified in this Section.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For glazed aluminum curtain walls to include in maintenance manuals.

B. Maintenance Data for Structural Sealant: For structural-sealant-glazed curtain walls to include in maintenance manuals. Include ASTM C 1401 recommendations for post-installation-phase quality-control program. (Addendum No. 2)

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: A manufacturer capable of fabricating glazed aluminum curtain walls, that meet or exceed energy performance requirements indicated and of documenting this performance by certification, labeling, and inclusion in lists.

B. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

C. Testing Agency Qualifications: Qualified according to ASTM E 699 for testing indicated.

D. Energy Performance Standards: Comply with NFRC for minimum standards of energy performance, materials, components, accessories, and fabrication. Comply with more stringent requirements if indicated.

E. Product Options: Information on Drawings and in Specifications establishes requirements for systems' aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance.

1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

F. Structural-Sealant Glazing: Comply with ASTM C 1401 for design and installation of curtain wall assemblies. (Addendum No. 2)

1.8 MOCKUPS

A. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

1. Intent of mockup is for visual representation of glazed aluminum curtain wall appearance.

a. Custom colors are not required for mockups.
b. Performance testing of mockups is not required.

2. Build mockups for each typical wall areas, as follows:

a. Build mockup of typical glazed-aluminum curtain wall, including four-way intersection of curtain-wall framing, extended covers, and glazing.
b. Size: Minimum 25 sq. ft. for each type of curtain wall in locations directed by Architect.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Approved mockups may become part of the completed work if undisturbed at time of Substantial Completion.

1.9 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of structural supports for glazed aluminum curtain walls by field measurements before fabrication and indicate measurements on Shop Drawings.

1.10 WARRANTY

A. Special Assembly Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of glazed aluminum curtain-wall systems that do not comply with requirements or that deteriorate as defined in this Section within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including, but not limited to, excessive deflection.
b. Noise or vibration caused by thermal and structural movements.
c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
d. Water leakage.
e. Failure of operating components to function normally.

2. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide Kawneer North America; an Alcoa company; Series 1600 ~~System 1~~ **System 2** Curtain Wall System, or a comparable product by one of the following: (Addendum No. 2)

1. CMI Architectural Products, Inc. (Contact: Craig MacGregor, 847/910-6762).
2. EFCO Corporation.
3. Oldcastle BuildingEnvelope; Reliance.
4. Pittco Architectural Metals.
5. Tubelite.
6. United States Aluminum.
7. YKK AP America Inc.

B. Source Limitations: Obtain all components of curtain wall system, including framing, entrances, and accessories, from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design glazed aluminum curtain walls, including comprehensive engineering analysis by a qualified Illinois-licensed structural engineer, using performance requirements and design criteria indicated.

B. General Performance: Comply with performance requirements specified, as determined by testing of glazed aluminum curtain walls representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction.

1. Glazed aluminum curtain walls shall withstand movements of supporting structure including, but not limited to, story drift, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.
2. Failure also includes the following:

a. Thermal stresses transferring to building structure.
b. Glass breakage.
c. Noise or vibration created by wind and thermal and structural movements.
d. Loosening or weakening of fasteners, attachments, and other components.
e. Failure of operating units.

C. Structural Loads:

1. As indicated on Drawings.

D. Deflection of Framing Members: At design wind pressure, as follows:

1. Deflection Normal to Wall Plane: Limited to 1/175 of clear span for spans up to 13 feet 6 inches, and to 1/240 of clear span plus 1/4 inch, for spans greater than 13 feet 6 inches or an amount that restricts edge deflection of individual glazing lites to 3/4 inch, whichever is less.
2. Deflection Parallel to Glazing Plane: Limited to 1/360 of clear span or 1/8 inch, whichever is smaller.

a. Operable Units: Provide a minimum 1/16-inch clearance between framing members and operable units.

3. Cantilever Deflection: Where framing members overhang an anchor point, as follows:

a. Perpendicular to Plane of Wall: No greater than 1/240 of clear span plus 1/4-inch for spans greater than 11 feet 8-1/4 inches or 1/175 times span, for spans less than 11 feet 8-1/4 inches.

E. Structural: Test according to ASTM E 330 as follows:

1. When tested at positive and negative wind-load design pressures, systems do not evidence deflection exceeding specified limits.
2. When tested at 150 percent of positive and negative wind-load design pressures, systems, including anchorage, do not evidence material failures, structural

distress, and permanent deformation of main framing members exceeding 0.2 percent of span.

3. Test Duration: As required by design wind velocity but not less than 10 seconds.

F. Air Infiltration: Maximum air leakage of 0.30 cfm/sq. ft. of fixed wall area when tested according to ASTM E 283 at a minimum static-air-pressure differential of 6.24 lbf/sq. ft.

G. Water Penetration Under Static Pressure: Provide aluminum glazed curtain-wall systems that do not evidence water penetration when tested according to ASTM E 331 at a minimum differential static pressure of 20 percent of positive design wind load, but not less than 10 lbf/sq. ft.

H. Energy Performance: Glazed aluminum curtain walls shall have certified and labeled energy performance ratings in accordance with NFRC.

1. Thermal Transmittance: Fixed glazing and framing areas shall have U-factor of not more than 0.45 Btu/sq. ft. x h x deg F as determined according to NFRC 100.
2. Solar Heat Gain Coefficient: Fixed glazing and framing areas shall have a solar heat gain coefficient of no greater than 0.45 as determined according to NFRC 200.
3. Condensation Resistance: Fixed glazing and framing areas shall have a condensation-resistance factor (CRF) of not less than 53 when tested according to AAMA 1503.

I. Thermal Movements: Provide glazed aluminum curtain-wall systems that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.
2. Test Interior Ambient Air Temperature: 75 deg F.

J. Structural-Sealant Joints: (Addendum No. 2)

1. Designed to produce tensile or shear stress of less than 20 psi.

K. Structural Sealant: Capable of withstanding tensile and shear stresses imposed by structural-sealant-glazed curtain walls without failing adhesively or cohesively. When tested for preconstruction adhesion and compatibility, cohesive failure of sealant shall occur before adhesive failure. (Addendum No. 2)

1. Adhesive failure occurs when sealant pulls away from substrate cleanly, leaving no sealant material behind.

2. Cohesive failure occurs when sealant breaks or tears within itself but does not separate from each substrate because sealant-to-substrate bond strength exceeds sealant's internal strength.

2.3 FRAMING

A. Framing Members: Manufacturer's standard extruded- or formed-aluminum framing members of thickness required and reinforced as required to support imposed loads.

1. Construction: Thermally broken.
2. Glazing System: Retained mechanically with gaskets on four sides**, unless indicated otherwise**. (Addendum No. 2)

a. Retained mechanically with gaskets on two sides and structural sealant on two sides, where indicated on Drawings.

3. Glazing Plane: Front.
4. Finish: Clear anodic finish.

B. Pressure Caps: Manufacturer's standard aluminum components that mechanically retain glazing.

1. Include snap-on aluminum trim that conceals fasteners.

C. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

D. Materials:

1. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

a. Sheet and Plate: ASTM B 209.
b. Extruded Bars, Rods, Shapes, and Tubes: ASTM B 221.
c. Extruded Structural Pipe and Tubes: ASTM B 429.
d. Structural Profiles: ASTM B 308.

2. Steel Reinforcement: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM, and prepare surfaces according to applicable SSPC standard.

a. Structural Shapes, Plates, and Bars: ASTM A 36.
b. Cold-Rolled Sheet and Strip: ASTM A 1008.
c. Hot-Rolled Sheet and Strip: ASTM A 1011.

2.4 ENTRANCES

A. Entrances: Comply with Division 08 Section "Aluminum-Framed Entrances and Storefronts."

2.5 GLAZING

A. Glazing: Comply with Division 08 Section "Glazing."

B. Glazing Gaskets: Manufacturer's standard sealed-corner pressure-glazing system of black, resilient elastomeric glazing gaskets, setting blocks, and shims or spacers.

C. Glazing Sealants: As recommended by manufacturer.

1. Sealants used inside the weatherproofing system shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

D. Structural Glazing Sealants: ASTM C 1184, chemically curing silicone formulation that is compatible with system components with which it comes in contact, specifically formulated and tested for use as structural sealant and approved by structural-sealant manufacturer for use in curtain-wall assembly indicated. (Addendum No. 2)

1. Color: As selected by Architect from manufacturer's full range of colors.

E. Weatherseal Sealants: ASTM C 920 for Type S; Grade NS; Class 25; Uses NT, G, A, and O; chemically curing silicone formulation that is compatible with structural sealant and other system components with which it comes in contact; recommended by structural-sealant, weatherseal-sealant, and structural-sealant-glazed curtain-wall manufacturers for this use. (Addendum No. 2)

1. Color: Match structural sealant.

2.6 ACCESSORIES

A. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.

1. Where fasteners are subject to loosening or turn out from thermal and structural movements, wind loads, or vibration, use self-locking devices.
2. Reinforce members as required to receive fastener threads.
3. Use exposed fasteners with countersunk Phillips screw heads, finished to match framing system.

B. Anchors: Three-way adjustable anchors with minimum adjustment of 1 inch that accommodate fabrication and installation tolerances in material and finish compatible with adjoining materials and recommended by manufacturer.

1. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts complying with ASTM A 123 or ASTM A 153 requirements.

C. Concealed Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials.

D. Bituminous Paint: Cold-applied asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos, formulated for 30-mil thickness per coat.

2.7 FABRICATION

A. Form aluminum shapes before finishing.

B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

C. Fabricate components that, when assembled, have the following characteristics:

1. Profiles that are sharp, straight, and free of defects or deformations.
2. Accurately fitted joints with ends coped or mitered.
3. Physical and thermal isolation of glazing from framing members.
4. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
5. Provisions for reglazing from exterior.
6. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.

D. Fabricate components to resist water penetration as follows:

1. Internal guttering system or other means to drain water passing joints, condensation occurring within framing members, and moisture migrating within glazed aluminum curtain wall to exterior.

E. Curtain-Wall Framing: Fabricate components for assembly using manufacturer's standard assembly method.

F. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2.8 ALUMINUM FINISHES

A. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.

2.9 SOURCE QUALITY CONTROL

A. Structural Sealant: Perform quality-control procedures complying with ASTM C 1401 recommendations including, but not limited to, assembly material qualification procedures, sealant testing, and assembly fabrication reviews and checks. (Addendum No. 2)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare surfaces that will contact structural sealant according to sealant manufacturer's written instructions to ensure compatibility and adhesion. Preparation includes, but is not limited to, cleaning and priming surfaces. (Addendum No. 2)

3.3 INSTALLATION

A. General:

1. Comply with manufacturer's written instructions.
2. Do not install damaged components.
3. Fit joints to produce hairline joints free of burrs and distortion.
4. Rigidly secure nonmovement joints.
5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.
6. Where welding is required, weld components in concealed locations to minimize distortion or discoloration of finish. Protect glazing surfaces from welding.
7. Seal joints watertight, unless otherwise indicated.

B. Metal Protection:

1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape or installing nonconductive spacers as recommended by manufacturer for this purpose.
2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

    a. Apply aerosol bituminous-type coating to insides of frame legs at bottom and continuing up 12 inches for frames that are within 12 inches of grade or pavement.

C. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.

D. Install components plumb and true in alignment with established lines and grades.

E. Install operable units level and plumb, securely anchored, and without distortion. Adjust weather-stripping contact and hardware movement to produce proper operation.

1. Install sun control devices level and true in alignment with glazed curtain wall system, securely anchored, without distortion, and with sunshade brackets concealed behind snap-on face covers.

F. Install glazing as specified Division 08 Section "Glazing."

1. Prepare surfaces that will contact structural sealant according to sealant manufacturer's written instructions to ensure compatibility and adhesion. Preparation includes, but is not limited to, cleaning and priming surfaces. (Addendum No. 2)

G. Install weatherseal sealant according to Division 07 Section "Joint Sealants" and according to sealant manufacturer's written instructions to produce weatherproof joints. Install joint filler behind sealant as recommended by sealant manufacturer. (Addendum No. 2)

H. Install sealants as specified in Division 07 Section "Joint Sealants."

3.4 ERECTION TOLERANCES

A. Erection Tolerances: Install glazed aluminum curtain-wall systems to comply with the following maximum tolerances:

1. Plumb: 1/8 inch in 10 feet; 1/4 inch in 40 feet.
2. Level: 1/8 inch in 20 feet; 1/4 inch in 40 feet.
3. Alignment:

   a. Where surfaces abut in line or are separated by reveal or protruding element up to 1/2 inch wide, limit offset from true alignment to 1/16 inch.
   b. Where surfaces are separated by reveal or protruding element from 1/2 to 1 inch wide, limit offset from true alignment to 1/8 inch.
   c. Where surfaces are separated by reveal or protruding element of 1 inch wide or greater, limit offset from true alignment to 1/4 inch.

4. Location: Limit variation from plane to 1/8 inch in 12 feet; 1/2 inch over total length.

3.5 FIELD QUALITY CONTROL (Addendum No. 2)

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. Structural-Sealant Adhesion: Test structural sealant according to recommendations in ASTM C 1401, Destructive Test Method A, "Hand Pull Tab (Destructive)," Appendix X2.

1. Test a minimum of four areas on each building facade.
2. Repair installation areas damaged by testing.

C. Glazed aluminum curtain walls will be considered defective if they do not pass tests and inspections.

D. Prepare test and inspection reports.

END OF SECTION 084413

SECTION 11 61 33 – STAGE RIGGING SYSTEMS

PART 1 – GENERAL

1.1 DEFINITIONS

A. The term "Contractor" shall mean the contracting entity, also referred to herein as Rigging Contractor, as a Manufacturer or Manufacturer's agent, responsible for the fabrication, assembly, installation, testing, instruction and completion of all stage rigging work as covered in these Specifications and related Drawings.

B. The terms "General Contractor" and "Electrical Contractor" are used herein to refer to organizations, individuals, and their representatives as typically defined for construction projects. These terms refer to parties other than the Rigging Contractor ("Contractor").

C. Technical terms unique to stage rigging and related work shall be construed in the following order, in accordance with:

1. Captions on related Drawings.
2. Relevant usage and definitions of handbooks, guidebooks, or trade group recommendations by manufacturers' associations or professional and engineering societies, such as ASTM, ASME, ASHRAE, etc.
3. Generally recognized theatrical usage.

1.2 SCOPE

All materials, components, and services necessary to provide a complete system indicated in this Section, as specified herein and shown on related Drawings, including:

A. Preparation and submission of complete shop drawings and samples for review prior to fabrication.

B. Verification of dimensions and conditions at the job site.

C. Shipment of equipment to job site and the secured storage of all non-fixed equipment.

D. Installation and completion, in accordance with these Specifications, related Drawings, the Equipment Manufacturer's recommendations, established trade criteria, and all applicable code requirements.

E. The observation, demonstration, and necessary adjustment of the completed installation.

F. Preparation and submission of complete record drawings and operational and maintenance data and certificates.

The systems described by this Specification and related Drawings are not designed or intended for use in human “flying” effects or for suspension of people in any manner.

1.3 WORK INCLUDED

A. Manually Operated Counterweight Rigging Linesets.

B. Motorized Rigging Linesets

C. Motorized Proscenium Fire Safety Curtain

D. Manually Operated Acoustic Curtains and Panels

E. Motorized Acoustic Curtains

F. Stage Masking Curtains and Tracks

G. Rigging Accessories

H. Personnel Lifts and Ladders

The above is for reference only and is not intended to define the limits of the work for a complete installation.

1.4 WORK NOT INCLUDED

A. Principal structural steel work, except as herein indicated.

B. Electrical wiring, conduit, and connections.

The above is for reference only and is not intended to define the limits of the work for a complete installation.

1.5 RELATED WORK IN OTHER SECTIONS

A. Structural steel.

B. Concrete and masonry.

C. Painting and finishing.

D. Smoke vents and roof hatches.

E. HVAC.

F. Plumbing and sprinklers.

G. General electrical work.

H. Theatre stage lighting system.

I. Theatre stage luminaires.

J. Acoustical orchestra enclosure.

K. Theatre platform systems.

L. Sound and communications systems.

M. Stage Flooring Systems.

N. Alternates

P. Sound Absorbing and Diffusing Wall Panels – Section 098413

1.6 QUALIFICATIONS

A. All equipment and installation shall be the responsibility of a single contractor. The Contractor shall be responsible for the integration, operation, and performance of all elements of the systems described in this Section. This Contractor shall assume complete responsibility for the engineering, fabrication, transportation, and installation of the work in this Section, and shall hold the Owner, Architect, Theatre Consultant, and all their Employees and Consultants harmless for any costs for errors or omissions associated with the work of this Section and any action arising therefrom. The Contractor shall provide all warranty work and equipment upgrades as called for in this Section.

B. Approved contractors may, at their option, arrange for sub-contract field and special shop work to be done by others. Bid submissions must identify such subcontractors and indicate the work they are to do.

C. The Contractor shall have at least 10 years' experience in the installation of similar equipment and systems of a similar scope for secondary school theatres. Contractor shall be a current Business member, accredited as a Dealer Retailer or Manufacturer, of the industry service organization, ESTA.

D. Contractor shall employ only experienced stage riggers to direct the installation of work of this Section. A competent supervisor shall be maintained on this Project during the entire installation. The supervisor shall be certified as a Theater Rigger by the Entertainment Technician Certification Program. A change of supervisor shall not be acceptable unless by written authorization of the Architect.

E. Subject to the above requirements, work performed under this Section may be by one of the following listed contractors:

1. Beck Studios, Milford, Ohio 513-831-6650
2. Chicago Flyhouse, Chicago, Illinois 773-533-1590
3. Grand Stage Company, Chicago Illinois 312-332-5611
4. Inter-America Stage, Sanford, Florida, 877-302-4274
5. I. Weiss, Fairview, New Jersey, 888-325-7192
6. J. R. Clancy, Inc., Syracuse, New York, 315-451-3440
7. Stagecraft Industries, Portland, Oregon, 503-286-1600
8. Staging Concepts, Brooklyn Park, Minnesota, 763-533-2094
9. Texas Scenic, San Antonio, Texas, 210-684-0091
10. Tiffin Scenic Studio, Tiffin, Ohio, 800-445-1546

F. Contractors not having a qualified and experienced sewing room as an integral part of their operation shall employ the services of a qualified and experienced Sewing Sub-contractor for the fabrication of stage curtains. Sewing Sub-contractor shall have at least 10 years' experience in the fabrication of curtains for secondary school theatres. If requested, the Rigging Contractor shall submit a representative list of secondary school theatre projects performed by the Sewing Sub-contractor during the above period. Subject to the above requirements, work performed under this Section may be by one of the following Sewing Sub-contractors:

1. Rose Brand, New York, New York
2. Stage Decoration and Supplies, Greensboro, North Carolina
3. Stagecraft Industries, Portland, Oregon
4. Syracuse Scenery and Stage Lighting, Liverpool, New York
5. Tiffin Scenic Studios, Inc., Tiffin, Ohio
6. Tru-Roll, a division of Advanced Entertainment Technology, Monrovia, California
7. I. Weiss & Sons, Fairview, New Jersey

G. Other contractors or sewing rooms may be considered with the prior review of the Theatre Consultant. Contractors seeking review must submit qualifications not later than 14 days prior to bid date.

1.7 SUBMITTALS

A. With bid.

1. Proof that the contractor meets the qualification requirements as outlined in this Section.
2. A list of at least three (3) secondary school theatre stage rigging and drapery installations by the bidder comparable to this project in scope and completed in the past five (5) years.
3. A list of any proposed deviations or exceptions from the Specifications. Any deviations or exceptions from the Specification proposed after bid shall not be accepted.
4. A schedule for the anticipated completion of the following:
   a. Shop drawings.
   b. Delivery of all equipment.
   c. Installation of all systems.

B. Shop drawings. Within 60 days of contract award, the Contractor shall submit at least one set of drawings to the Architect for review prior to fabrication:

1. Floor plan, gridiron plan, and section of stage in scale equal to 1/4" = 1'-0".
2. Elevation of each rigging and curtain set type, showing stage floor, gridiron, all blocks, motor, batten travel, arbor travel, winch location, mounting and arrangement, cable management, curtain travel, and curtain storage.
3. Curtain schedule indicating fabric, finished size, fullness and special sewing requirements.
4. Dimensioned rear Elevation of every curtain to be provided for this project, showing hem construction and detailing of all edges and sewing requirements.
5. Complete, fully dimensioned shop drawings of all major components.
6. Requisite plans, sections, schematics, and details indicating assembly and installation of components.
7. Load ratings of all load bearing components including, but not limited to, bearings, blocks, trim chains, lift lines, and purchase lines.
8. Complete descriptions, including the manufacturer's catalog data sheets, of all components including, but not limited to, bearings, motors, transmissions, and items designated as “Deliver to Owner.”
9. Complete descriptions, including manufacturer and model number, of all electrical components. All control panel switches and pilot lights shall be described by the manufacturer's catalog sheet.
10. Certification by a recognized independent testing laboratory that all steel cable and rope meets the ASTM standards referenced in this Section.
11. Details of all supplementary structural support to be supplied and installed as part of the work of this Section.
12. Coordination Drawing(s) illustrating requirements for blocking, provided by others, necessary to support rigging system components.
13. Power and control requirements and installation wiring diagrams for all electrical components.
14. Quantities of each component and sub-assembly.
15. Indication by boxed caption of any and all variations from the contract Drawings and Specifications, whether or not these variations have been formally or informally accepted by the Architect and Theatre Consultant.
16. Prepare all shop drawings under the supervision of professional electrical and structural engineers so licensed by the State of Illinois. All shop drawings shall be stamped and certified by those engineers. Structural Engineer's review shall include all elements provided under the work of this section including the methods of attachment of said elements to the building. In lieu of an Electrical Engineer’s stamp, a letter from the installing Electrical Contractor, verifying that all conductors, conduits and terminations will be installed in accordance with all applicable local and national codes shall be acceptable.
17. Submittal Review:
    a. All shop drawing information shall be submitted at the same time; no partial submittals will be reviewed.
    b. Review and approval shall not relieve the Contractor of responsibility for meeting all functional, operational, and safety requirements of the project as set forth in this Specification and related Sections. Review does not relieve the Contractor of responsibility to verify field conditions; nor does it

relieve the contractor of responsibility for errors, omissions, or deviations in submittals.

C. Samples. Within 60 days of contract award, the Contractor shall submit to the Architect for review prior to fabrication:

1. Color lines for all curtain fabrics, for color selection by Architect.
2. Sewn sample of main curtain, demonstrating fabrication of top, bottom, and side hems. Finished size shall be 10 feet wide and 5 feet high. Fabric shall be identical to that specified, but fabric may be any color.
3. 30-inch square sewn sample of the cyclorama, showing construction of top and side hems grommets and bottom hem with buttonhole opening.
4. 30-inch square sewn sample of the scrim(s), showing construction of top and side hems grommets and bottom hem with buttonhole opening.
5. 30-inch square sample of the projection screen material.
6. 36-inch long sample of each type of curtain track, complete with (if applicable) live end pulley, dead end pulley, operating line, one (1) single carrier, and one (1) master carrier.
7. Samples of any equipment component requested by the Theatre Consultant.

Samples shall not be considered part of specified quantities but shall be returned.

D. Final submittal. Within 30 days of final tests, and as a condition for final review, the Contractor shall submit three (3) sets to the Architect and one (1) set on electronic media to the Theatre Consultant of the listed items. Format of sets shall be compliant with Division One of this Specification.

1. Receipts for delivery of all non-installed items, i.e., all items designated, "Deliver to Owner."
2. "As built and approved" drawings and wiring diagrams showing all systems and components as installed, including all field modifications. All field modifications shall be reviewed and stamped by professional engineers so licensed by the State of Illinois. The scope of this review shall be subject to the requirements noted above for Shop Drawing Submittals.
3. Operation and service manuals, schematics, and parts lists for each unit of equipment installed or provided.
4. Certificates of flame resistance.
5. Certificates of warranty, as set forth below.

1.8 TESTING AND INSTRUCTION

A. Upon completion of all installation work, the Contractor shall certify in writing to the Architect and Theatre Consultant that the work is complete and ready for final observation. Final observation shall be scheduled by the Owner, the Architect, and the Theatre Consultant to occur within 14 days following the Contractor's notice of completion.

B. Final observation shall be conducted by a knowledgeable representative of the Contractor, in the presence of the Owner, the Architect, and the Theatre Consultant, and shall include the following:

1. Operation of all components.
2. Visual examination of all components.
3. Sightline check of masking curtains.
4. Full load testing of all motorized sets that perform overhead lifting. Testing shall include full range of travel in all axes of movement at all speeds directed by the installed control system. Test shall include both controlled stop and emergency stop conditions. Test weight shall be equal to the capacity listed on the Drawings.
    a. For all sets a test with the weight uniformly distributed across all lift lines shall be performed.
    b. For 10 percent of each set type, but not less than one (1) per type, a test with the weight eccentrically distributed shall be performed. Test weight shall be equal to the capacity of the set and distributed so that one (1) lift line shall carry the maximum load per lift line as shown in the Drawings.
5. Simulated failure test of all safety brakes. Test shall be simulated so as not to compromise the integrity of the installed components. To ensure safety of the installed system, a recorded video demonstration of the brake system shall be acceptable.

C. Necessary adjustments or modifications shall be made as required.

D. As a condition of final completion, Contractor’s representative shall instruct the Owner's staff or representatives, under the observation of the Architect and Theatre Consultant, in the operation and maintenance of the system including the storage and cleaning of all fabrics.

1. Initial Instruction: This instruction session shall be scheduled for a minimum duration of eight (8) hours. While it may be possible to schedule this instruction session to coincide with the system checkout, such coincidence shall not be assumed. Instruction shall be scheduled by the Owner, the Architect, and the Theatre Consultant to occur within 14 days following the Contractor's written notice.

E. The Rigging Contractor shall provide to the Owner video instructions on the operation and maintenance of the system. Information contained in video will cover all points of operation and maintenance covered in the instruction session with Owner's staff. A videotaped recording of the actual instruction session is acceptable. Provide four (4) full copies of video instruction. Video format shall be DVD.

1.9 GENERAL REQUIREMENTS

A. General Conditions of the project contract, work schedules, and site regulations apply to this work.

B. This work shall comply with local codes and applicable national codes and standards. All electrical components shall carry pertinent labels from Nationally Recognized Testing Laboratories.

C. For all requirements not otherwise addressed by this Specification, the work shall be at a minimum compliant with the requirements of the following standards:

1. ANSI E1.4-2016 – Entertainment Technology - Manual Counterweight Rigging Systems.
2. ANSI E1.6-1-2019 – Entertainment Technology – Powered Hoist Systems
3. ANSI E1.22-2016 – Entertainment Technology – Fire Safety Curtain System
4. NFPA 80 – Standard for Fire Doors and Opening Protectives

D. All equipment shall be fully insured against loss or damage during shipment, job site storage, installation, and testing. The Contractor shall have and assume full responsibility for the safety of every unit of equipment, components and wiring during delivery, installation, and testing until acceptance by Owner. Certification of such coverage shall be furnished to the Architect within 30 days of award of contract.

E. Warranty

1. The Contractor shall unconditionally warrant all equipment and systems provided under this Section to be free from defects in materials and workmanship for a period of at least 12 months from the date of final acceptance of all work of this Section.
2. All repairs and service during the warranty period shall be performed at the job site; labor, materials, and transportation of replacement material and parts and service personnel to and from the job site shall be included hereunder at the Contractor's expense.
3. Appropriate additional equipment or draperies to replace equipment, devices, or draperies removed for repair, service, or cleaning shall be provided at the job site at no expense to the Owner to replace any and all equipment which must be removed for repair or service.
4. Warranty service shall be performed by personnel in the employ of the Contractor and shall not be sub-contracted or assigned to another company, service, or individual unless the Owner has approved such assignment in writing, in which event the Contractor shall nevertheless be responsible to the Owner for such work.
5. For a period of two (2) years following acceptance, the Contractor shall provide and install, at no cost to the Owner, all control system upgrades. Thereafter the Contractor shall notify the Owner of all system upgrades for the life of the control system. The Contractor shall keep system user's name and address in a database for this purpose. All upgrades shall include a full written description of operational modifications. System upgrades shall be designed so as to allow existing data to be accessed and upgraded.

F. State-of-the-art assurance: No products shall be accepted if they have been discontinued or superseded at the time of shipment. Should the Rigging Contractor develop products of comparable function above and beyond the specification of the listed product, the Rigging Contractor shall make the newly developed product

available to the project at no additional cost. The Rigging Contractor shall notify the Architect and the Theatre Consultant of any developments to the specified products, and shall note any change in the requirements of building infrastructure(s) to support the developments. The Architect and Theatre Consultant shall then determine whether upgraded products shall be accepted.

PART 2 - PRODUCTS

2.1 GENERAL

A. All components shall be new and of first quality.

B. Machinery and component parts shall comply with applicable trade practice, industry standards, and code requirements and bear appropriate labels of conformity and acceptability.

C. All components shall bear labels from a Nationally Recognized Testing Laboratory and labels identifying the manufacturer, model number, serial number, and date of flameproofing. All such labels shall be permanently attached in a conspicuous location.

D. Operating parts of all equipment shall be machine finished, and tolerances, finishes, fit, etc., where not specified, shall conform to good trade practices.

E. All items necessary for a complete, operational, and safe system shall be provided, including bolts, nuts, washers, fittings, anchors, supports, hinges, and all other items required for completeness and operational safety. Where not specified elsewhere in this Section, all bolts shall be Grade 5 or better.

F. Where not specifically called out in this Section, rope and wire rope shall be selected using a minimum safety factor of 8 to 1. All chain, shackles, and other hardware shall be selected using a minimum safety factor of 5 to 1.

G. Unless noted otherwise in the Drawings or Specifications, all rope lock and arbor locations shall be numbered sequentially from the front of the stage to the rear of the stage, with no lineset numbers being out of order.

H. Unless specifically shown otherwise in the Drawings, the contractor shall run all lift lines directly from the head blocks to the loft blocks without muling. Contractors wishing to add muling may do so only with the prior review of the Theatre Consultant.

I. Where specification allows for "approved equal," substitutions shall be proposed to the Theatre Consultant at least 10 days prior to bid date.

J. Equipment and hardware are specified on the basis of performance and minimum acceptable quality. Materials manufactured by any of the following companies that equal or surpass the performance and quality specified will be acceptable:

1. Automatic Devices Company (ADC), Allentown, Pennsylvania
2. I. Weiss, Fairview, New Jersey
3. H & H Specialties, South El Monte, California
4. Tait, Lititz, Pennsylvania
5. Texas Scenic, San Antonio, Texas
6. Thern, Winona, Minnesota
7. Tiffin Scenic Studios, Tiffin, Ohio
8. Wenger/J. R. Clancy, Owatonna, Minnesota

2.2 ENGINEERING RESPONSIBILITY

A. The engineering of all equipment, devices, machinery, and systems shall address the following considerations:

1. Safety to personnel during operation, use, and maintenance.
2. Adequate strength.
3. Proper coordination of all systems and elements, including electrical insulation levels, interrupting capacities, protective relays, impact strength, breaking strength, emergency stopping distances, acceleration and deceleration rates, and normal working stress capabilities of equipment and all components.
4. Reliability, with consideration for special or unusual requirements of the unit or installation.
5. Ease of operation and maintenance.
6. System operating sequences, including accounting for simultaneous as well as sequential operation of systems and sub-systems.
7. Coordination with associated and/or adjacent systems provided by others, including system and sub-system status information, if required.
8. Quiet operation.

B. Provide all supplementary structural support necessary for safe and proper static and dynamic conditions of all systems and components required for the work of the Specification. Supplementary structural support required for access, support, enclosure, and service to all motors and motor control cabinets shall be supplied and installed as part of the work of this Section. All attachments, anchorages, connections, and miscellaneous steel additions to accommodate pulleys, blocks, etc., shall be designed, supplied, and installed by the Contractor and reviewed by the Architect. All methods of connection and imposed loads resulting from the Contractor's work shall be submitted to the Architect prior to fabrication.

C. Provide all guards and other protective devices required to ensure protection of individuals associated with the operation of, or who may be near or adjacent to, equipment and devices provided as part of the work of this Section.

D. Loading capacities of systems, where specified in the Drawings or the Specifications, refer to the net payload capacities exclusive of the dead loads—pipe battens, truss

battens, sandbags, hooks, etc.—exactly as indicated on the Drawings and Specifications. Should the Contractor choose to suggest alternate methods that require heavier dead loads, the Contractor shall be responsible for increasing the capacities of the individual components, including the arbor capacities, accordingly. Any alternate methods must be approved specifically by the Theatre Consultant.

2.3 EQUIPMENT COMPONENTS

A. Single and Multiple Line Sheaves:

1. Supporting, load bearing, and idler sheaves shall be of materials indicated. Size and capacity shall be as required for safe and reliable operation under design loads, but in no instance shall bearing pressure of the wire rope on a sheave groove exceed:
    a. 100 PSI for nylon
    b. 250 PSI for Nylatron
    c. 250 PSI for cast iron
    d. 500 PSI for high tensile cast iron
    e. 750 PSI for cast steel
    f. 2,000 PSI for turned steel sheaves.
2. Tread diameter of sheaves for wire rope shall be at least 30 times the diameter of the wire rope employed, except minimum diameter of idler sheaves and mule blocks that divert the cable direction by less than 45 degrees may be 20 times cable diameter. Tread diameter of sheaves for textile rope shall be at least 15 times the diameter of the textile rope employed.
3. All castings shall be designed and detailed for required loads and cable diameters with safety factors of at least three (3).
4. Provide rigid and accurate shaft and bearing mounting. Shafts shall be seized to prevent rotation.
    a. Each bearing shall be selected to support at least 1.5 times the intended sheave load at 500 RPM, or as otherwise indicated.
5. Cable grooves shall be properly sized for the cable used, with groove diameter clearances to fit cable closely and prevent cable from assuming oval or elliptical shape under load. Groove diameter clearance shall be 8% of cable diameter. Groove depth shall be equal to the cable diameter. Cast grooves on metallic sheaves are not acceptable. All grooves on the same casting or billet shall have the same pitch diameter. All groove sides shall be beveled for required fleet angle to eliminate rubbing. Fleet angles shall not exceed ± 1.5 degrees.
6. Fleeting, muling, idler, and spacer blocks shall be provided as necessary to guide, turn, support, and separate lift lines. Load bearing sheaves shall be of at least the same components and sizes as required for other sheaves in the set and provided with suitable swivel bases, slip-shafts, mounting brackets, platforms, and accessories to satisfy job requirements.
7. Spacers shall be located so as to both retain the cable in the sheave groove and to retain the sheave within the block in the event of shaft failure. Clearance

between the spacer and the rope shall be not more than 40 percent of the rope diameter nor less than 20 percent of the rope diameter.

B. Bearings

1. Unless otherwise noted, all bearings shall be of the tapered roller type. Precision sealed ball bearings and oil impregnated bronze bushings, or similar, shall not be used except in specific applications identified in this Specification, and where guidance or diverting of wire rope self-weight are the only loads carried. In all cases, such bearings and bushings may be used only when specifically approved in advance by the Architect and Theatre Consultant.
2. Selection of bearings or bushings shall meet the following performance criteria:
    a. Silent operation at expected RPM
    b. Low maintenance and lubrication
    c. Ability to withstand long periods of static disuse under full design load without affecting performance
3. All bearings shall be pre-lubricated and sealed for life. For bearing types that cannot be sealed for life, easy means shall be provided for periodic lubrications via standard and common fittings. Such lubrication shall not require the disassembly of blocks or other extraordinary means. In all cases, such bearings may be used only when specifically approved in advance by the Architect and Theatre Consultant.

2.4 STRUCTURAL AND MISCELLANEOUS METAL WORK

A. Additional structural steel and other fittings required for installation, support, bracing, and/or operation of theatrical rigging in all areas of the Project are the responsibility of this Contractor and shall be in accordance with related Divisions of the Project Specifications. Excepted are supports which are erected behind finished surfaces. These supports shall be the responsibility of the General Contractor. The Rigging Contractor shall coordinate these locations and requirements with the General Contractor.

B. Patented channel type structural steel shall accommodate the required load but shall equal Unistrut Series P1000 at minimum.

C. Flame Cutting: Flame cutting is not acceptable, except for fabrication of counterweight.

D. Miscellaneous steel shall be of suitable types and sizes. All straps, rods, anchors, clip anchors, clip angles and other hardware necessary for the attachment shall be supplied.

2.5 ELECTRICAL CABLE SUPPORT

A. Contractor is responsible for the rigging of all cords and cables supplying electricity or control signal to any equipment supported by equipment furnished under this Section.

B. Electrical cables shall be rigged in such a manner that the entire length of all cables is in a plane parallel to the associated set and so that, except for the terminal, no portion of the cable ever rests on or interferes with the electrical device supplied. Provide support, muling, and turning blocks as required for proper support and movement of the electrical cables and cords.

C. Construction of cable management units must employ non-ferrous materials to prevent the creation of inductive fields that could cause cable heating and breakdown of the insulation.

2.6 ISOLATION OF NOISE GENERATING EQUIPMENT

A. All electrically operated system components which produce noise, including motors, gear boxes, drums, and control elements shall be mounted on vibration isolators as required to minimize levels of structure-borne noise. Equipment shall be mounted on double-deflection neoprene mountings with a maximum static deflection of .15 inches. Electrical connections shall include a 360 degree loop of super-flex flexible conduit.

B. The Rigging Contractor shall be responsible for ensuring that sound pressure levels for the entire system shall meet the following criteria:

1. Sound pressure levels measured one meter from any part of the hoist assembly shall be no more than 30Dba.

C. The Rigging Contractor shall coordinate with the Acoustics Consultant, Architect, and Theatre Consultant in the design of architectural enclosures, details, and finishes that may be required to reduce noise levels below NC25.

2.7 ELECTRIC MOTOR DRIVE SYSTEMS

A. Motor operated rigging sets

1. All motorized equipment shall incorporate programmable solid state ramping, or mechanical flywheels, to ensure soft starts and stops.
2. Minimum time to accelerate to full speed shall be 0.75 seconds. Deceleration time is variable and shall be without visually perceptible increments in normal operating mode so as to achieve noted positioning tolerance from any speed.

B. Electrical Controls

1. All electrically operated machinery and devices shall be fed from a disconnect device adjacent to the associated motor and controlled by dedicated motor starter control cabinet(s) as shown in the Drawings. All required motor starter control cabinets and associated disconnect devices shall be furnished as part of the Work of this Section.

2.8 ELECTRICAL EQUIPMENT

A. General

1. Design and sizing of all equipment, including wire and cable installations, shall be based on a 60˚C ambient temperature.
2. Equipment internal wiring shall be 600-volt, concentric stranded copper wire, at least 90˚C MTW insulated, regardless of gauge. Minimum control wire size shall be #16 AWG except where shielded cable is required for position transducer data.
3. All wiring external to equipment shall be in accordance with Division 26 of the Project Specifications.
4. Provide all integral transformers and circuit protection for the proper operation of the work of this Specification.

2.9 12-INCH HEAD BLOCKS

A. Block shall be designed for lineset capacity as shown in the Drawings.

B. Sheaves shall be machined from Nylatron or ASTM A48-83 Class 30 gray iron castings having a minimum tensile strength of 30,000 PSI and a Brinell Hardness of at least 187. Sheaves shall have an outside diameter of at least 12 inches and shall be lathe turned and grooved for purchase line and lift line diameters as shown in the Drawings. Grooves for purchase line and lift lines shall have the same pitch diameter.

C. Multiple sheave, tandem head blocks may be used where required by space restrictions to accommodate all lift lines; clewed lift lines will not be acceptable.

D. Hubs shall be minimum 3-7/8 inches diameter, machine faced, bored for and fitted with tapered roller bearing assemblies.

E. Shafts shall be minimum one (1) inch diameter cold finished steel shafting. One end shall be locked to the side plate by a keeper pin; the other end shall be threaded and drilled for a castellated lock nut and cotter pin. Shaft nut shall be factory adjusted to bearing manufacturer's specifications.

F. Side plates shall be minimum 10-gauge cold rolled steel plate. Side plates shall be attached by at least six (6) minimum 3/8 in. bolts through un-grooved pipe spacers sized to space side plates for proper sheave clearance.

G. Base angles shall be minimum 2 inches x 1-1/2 inches x 1/4 inch, fillet welded to the side plates.

H. Attachment, location and quantity as shown in the Drawings.

2.10 12-INCH LOFT BLOCKS

A. Block shall be designed for lineset capacity as shown in the Drawings.

B. Sheaves shall be machined from Nylatron or ASTM A48-83 Class 30 gray iron castings having a minimum tensile strength of 30,000 PSI and a Brinell Hardness of at least 187. Sheaves shall have an outside diameter of at least 12 inches and shall be lathe turned and grooved for lift line diameters as shown in the Drawings.

C. Hubs shall be minimum 3-7/8 inches diameter, machine faced, bored for and fitted with tapered roller bearing assemblies.

D. Shafts shall be minimum 3/4 inch diameter cold finished steel shafting. One end shall be locked to the side plate by a keeper pin; the other end shall be threaded and drilled for a castellated lock nut and cotter pin. A locking nut shall also be acceptable. Shaft nut shall be factory adjusted to bearing manufacturer's specifications.

E. Side plates shall be minimum 10-gauge cold rolled steel plate. Side plates shall be attached by at least six (6) minimum 3/8 inch bolts through un-grooved pipe spacers sized to space side plates for proper sheave clearance.

F. Base angles shall be minimum 2 inches x 1-1/2 inches x 1/4 inch, fillet welded to the side plates.

G. Attachment, location and quantity as shown in the Drawings.

2.11 8-INCH LOFT BLOCKS

A. Block shall be designed for lineset capacity as shown in the Drawings.

B. Sheaves shall be machined from Nylatron or ASTM A48-83 Class 30 gray iron castings having a minimum tensile strength of 30,000 PSI and a Brinell Hardness of at least 187. Sheaves shall have an outside diameter of at least eight (8) inches and shall be lathe turned and grooved for lift line diameters as shown in the Drawings.

C. Hubs shall be minimum two (2) inches diameter, machine faced, bored for and press-fitted with double sealed precision ball bearing assemblies.

D. Shafts shall be minimum 1/2 inch diameter cold finished steel shafting. One end shall be locked to the side plate by a keeper pin; the other end shall be threaded and drilled for a castellated lock nut and cotter pin. A locking nut shall also be acceptable.

E. Side plates shall be minimum 12-gauge cold rolled steel plate. Side plates shall be attached by at least six (6) minimum 5/16 inch bolts through un-grooved pipe spacers sized to space side plates for proper sheave clearance.

F. Base angles shall be minimum 1-1/2 inches x 1-1/2 inches x 3/16 inch, fillet welded to the side plates.

G. Attachment, location and quantity as shown in the Drawings and Schedules.

2.12 IDLER PULLEY ASSEMBLIES

A. Idler pulley assemblies shall provide for the positive retention of idled cables.

B. Idler pulleys shall be 2-1/2 inch Nylatron sheaves, individually grooved for each line. Provide nylon spacers between sheaves to limit the noise from horizontal movement.

C. Idler pulleys shall utilize ball bearings or bronze bushings for silent operation.

D. Provide idler pulley assemblies at loft blocks as shown in the Drawings.

2.13 8-INCH ROPE LOFT BLOCKS

A. Block shall be designed for a dynamic load of 350 pounds

B. Sheaves shall be machined from Nylatron or ASTM A48-83 Class 30 gray iron castings having a minimum tensile strength of 30,000 PSI and a Brinell Hardness of at least 187. Sheaves shall have an outside diameter of at least eight (8) in. and shall be lathe turned and grooved for lift line diameters as shown in the Drawings.

C. Hubs shall be minimum two (2) inch diameter, machine faced, bored for and press-fitted with double sealed precision ball bearing assemblies.

D. Shafts shall be minimum 1/2 inch diameter cold finished steel shafting. One end shall be locked to the side plate by a keeper pin; the other end shall be threaded and drilled for a castellated lock nut and cotter pin. A locking nut shall also be acceptable.

E. Side plates shall be minimum 12-gauge cold rolled steel plate. Side plates shall be attached by at least six (6) minimum 5/16 inch bolts through un-grooved pipe spacers sized to space side plates for proper sheave clearance.

F. Base angles shall be minimum 1-1/4 inches x 1-1/4 inches x 3/16 inch, welded to the side plates.

G. Attachment, location and quantity as shown in the Drawings and Schedules.

2.14 8-INCH ROPE PIVOT LOFT BLOCKS

A. Block shall be designed for a dynamic load of 350 pounds

B. Sheaves shall be machined from Nylatron or ASTM A48-83 Class 30 gray iron castings having a minimum tensile strength of 30,000 PSI and a Brinell Hardness of at least 187. Sheaves shall have an outside diameter of at least eight (8) inches and shall be lathe turned and grooved for lift line diameters as shown in the Drawings.

C. Hubs shall be minimum 2 inches diameter, machine faced, bored for and press-fitted with double sealed precision ball bearing assemblies.

D. Shafts shall be minimum 1/2 inch diameter cold finished steel shafting. One end shall be locked to the side plate by a keeper pin; the other end shall be threaded and drilled for a castellated lock nut and cotter pin.

E. Side plates shall be minimum 12-gauge cold rolled steel plate, attached by at least five (5) minimum 5/16 inch bolts through ungrooved pipe spacers sized to space side plates for proper sheave clearance.

F. Block shall be capable of pivoting 90 degrees on a shaft capable of supporting the full load rating of the block. Pivot shaft shall be minimum one (1) inch diameter cold finished steel shafting.

G. Attachment, location and quantity as shown in the Drawings and Schedules.

2.15 10-INCH WELCH FLOOR BLOCKS

A. Sheaves shall be machined from ASTM A48-83 Class 30 gray iron castings having a minimum tensile strength of 30,000 PSI and a Brinell Hardness of at least 187. Sheaves shall have an outside diameter of at least ten (10) inches and shall be lathe turned and grooved for the purchase line diameters as shown in the Drawings.

B. Sheave cores shall be machine bored and faced and have double-sealed precision ball bearing assemblies press-fitted into both sides.

C. Shafts shall be minimum 1/2 inch diameter, seized by a hex nut, and kept from turning.

D. Block housings shall be gray cast iron or 1/4 inch steel plate. Housings shall be smooth finished where adjacent to purchase lines, and the housings shall be shaped, or spacers located, to retain rope in sheave grooves.

E. Each block shall be held in place and guided between T-bar guides by two (2) guide assemblies consisting of UHMW guides with a 3/16 in. steel backup plate.

F. Each block assembly shall weigh not less than 40 pounds.

G. Location and quantity as shown in the Drawings and Schedules.

2.16 ARBOR GUIDE SYSTEM

A. Tracks shall be 1-1/2 inch x 1-1/2 inch x 3/16 inch aluminum J-bar, held in place by in-line formed 7-gauge x 1 inch aluminum spreader plates, and spliced with 7-gauge x 2-1/2 inch aluminum splice plates, using minimum 5/16 inch bolts. Spreader plates shall be installed in between, and on both sides of, every track.

B. Horizontal wall battens shall be minimum 1-3/4 inch x 1-3/4 inch x 3/16 inch steel angle, spaced five (5) feet on center (O.C.) vertically for the full height of the J-bar battery, and held in place by wall knees of minimum 2-1/2 inch x 2 inch x 3/8 inch steel angle, spaced five (5) feet O.C. horizontally for the full width of the J-bar battery. Wall

battens shall be attached to the spreader and splice plates and to the wall knees by means of minimum 3/8 inch bolts.

C. Floor batten shall be minimum 1-3/4 inch x 1-3/4 inch x 3/16 inch steel angle, anchored to the concrete floor slab minimum 5 feet O.C. for the full width of the J-bar battery.

D. Top and bottom arbor stops shall be minimum 3 inch x 4 inch hard rock maple or oak, supported by minimum 3 inch x 2 inch x 1/4 inch steel angle. Each arbor stop shall incorporate a 1/4 inch thick continuous face of neoprene, at the side facing the arbor. Neoprene shall be attached to arbor stop using countersunk wood screws, minimum 12 inch O.C. Arbor stops shall be clamped to J-bar battery maximum five (5) feet O.C. Placement of arbor stops shall permit maximum batten travel as indicated in the Drawings.

E. J-bar battery shall be installed so that the faces of the J-bar flanges form a true vertical plane. All splice joints shall be free of burrs and irregularities. All mounting holes in J-bars, spreader plates, splice plates, wall knees, and wall battens shall be slotted to allow fine adjustment. Lock washers shall be used at all joints.

F. Track spacing shall be eight (8) inches on center. Install a full battery of tracks from the first line set location to the farthest potential upstage line set location, whether or not there are unused spaces in between.

G. Dimensions, attachment, and quantities as shown in Drawings.

2.17 COUNTERWEIGHT ARBORS

A. Manual Counterweight Arbors

1. Top and bottom shall be formed minimum 5/16 inch steel plate with connection points for operating line and for lift lines. Top plate shall contain at least one (1) connection point for each lift line plus one (1) for the purchase line. Lift lines shall be run plumb to the head block without crossing. Bottom plate shall be threaded to receive the arbor rods and shall contain one (1) connection point for the purchase line.
2. Arbor rods shall be 3/4 inch high tensile steel, threaded both ends. Each rod shall have two (2) nuts above the top plate, one (1) nut below the top plate, and one (1) nut below the bottom plate.
3. Tie plate shall be minimum 3 inch x 3/8 inch steel bar, extending the full height of the arbor and bolted to the top and bottom of the arbor.
4. Spreader plates shall be 12-gauge steel. Provide one (1) for every two (2) feet of arbor height. Provide one (1) locking collar, with thumb type set screw, for each arbor rod. Weld front locking collar to top spreader plate.
5. Guide assemblies shall consist of two (2) guide plates and one (1) spacer plate of UHMW, with two (2) 3/16 inch steel reinforcing backup plates. These assemblies shall be bolted square to the tie plate with at least two (2) 3/8 inch bolts for each guide assembly. The guide assemblies shall be designed and installed so that the guides overlap the T-track by not less than 3/4 inch Steel backup plates shall be as wide as guide plates.

6. The tie plate of each arbor shall be painted with 1/2 inch yellow stripes to indicate spreader plate placement. These stripes shall be painted every two (2) feet beginning two (2) feet above the bottom of the arbor and continuing for the full height of the arbor. Immediately above each stripe, stencil in yellow paint the words, "DROP SPREADER PLATE HERE".

B. Quantities, sizes, and capacities as shown in the Drawings.

C. Confirm that arbor capacity of dedicated linesets (e.g., Front Curtain) is sufficient to balance the weight of the dedicated load. Notify Theatre Consultant if height of arbor is not sufficient.

2.18 COUNTERWEIGHT

A. Counterweight shall be first quality mild steel bar stock, with U-shaped slots flame-cut into the ends to fit arbor rods. All edges shall be ground free of burrs and rough or sharp edges.

B. Weights shall be seven (7) inches in width. Contractor shall provide weights in two (2) thicknesses that correspond to approximately 30 pounds and 15 pounds

C. Counterweights shall be chamfer-cut on two (2) opposing corners.

D. Provide balance weight for all line sets using primarily 30 pound weights. Balance weights shall be painted red and seized to the arbor bottom with two (2) bands of standard mechanically locked steel strapping. On the front face of the top dead weight, paint the set number in white, using stenciled numerals not less than 1/2 inch high.

E. After balancing, provide weight equal to full capacity of dedicated line sets, e.g.: orchestra shell ceilings and main curtain, plus additional weight equal to 60 percent of the total arbor capacity of all other installed line sets. Additional weight shall consist of the following percentages, by weight:

1. 30 pound: 80 percent
2. 15 pound: 20 percent

F. Additional weight shall be delivered and evenly distributed at the following locations, by percentage of each weight type:

1. Loading gallery: 85 percent
2. Pinrail gallery: 10 percent
3. Stage Floor: 5 percent

2.19 LOCK RAIL

A. Lock Rail shall consist of a continuous steel angle extending horizontally as shown in the drawings. The lock rail shall be supported five (5) feet O.C. by steel uprights braced and anchored as shown in the Drawings. The lock rail angle, uprights, base

angles, and bracing shall be all welded construction. The lock rail angle shall be drilled and tapped to receive rope locks for all available lineset positions.

B. A continuous 1/4 inch x 3 inch steel plate index strip shall be welded to the front of the locking rail angle at an angle to facilitate viewing. The index strip shall be provided with brackets which shall accept a minimum 2-1/2 inch tall x 5 inch wide white lamicoid write-on card at each lineset location. These cards shall be engraved, in black numerals not less than 1 inch high, with the line set number in the upper left corner. The arbor capacity shall be engraved along the bottom, in numerals not less than 1/4 inch high. All line sets permanently assigned as shown in the Drawings shall also have the titles engraved in the lamicoid cards in letters not less than 1/2 inch high.

C. Lock rail assembly shall be designed, fabricated, and installed to withstand the live loads as shown in the Drawings.

D. Construction, configuration, and location as shown in the Drawings.

2.20 ROPE LOCKS

A. Each rope lock shall consist of a one-piece malleable iron housing fitted with two (2) malleable iron jaws mounted on smooth pins or rivets. Cam lever handle shall be steel or ductile iron, minimum nine (9) inches long, with the handle plastic encapsulated. An oval slip ring, plastic encapsulated, shall be provided to keep the handle in the locked position. Pressure adjustment shall be by minimum 3/8 inch thumbscrew with locking nut.

B. In order to quiet the unlocking and operation of the lock, quieting stops shall be provided for both rope locking jaws. Front stop shall be affixed inside the housing, at the jaw's point of contact with the housing. Rear stop shall be provided at the tip of the rear set screw adjustment and shall be constructed of nylon or similar semi-rigid material. Plastic dipping or encapsulation of any portion of the jaws shall not be acceptable as quieting stops. Provide nylon washers on both sides of the jaws at the jaw pins.

C. In order to quiet the fall of the cam lever handle, provide nylon washers on both sides of the cam lever at the cam lever pin and a substantial neoprene bumper glued or clamped to the casting directly below the cam lever handle. This bumper shall be sized and located in such a manner as to prevent the handle from striking the lock rail angle. The handle shall be plastic encapsulated using a durable plastic coating in order to quiet contact.

D. The rope lock shall mount to the lock rail by means of four (4) minimum 3/8 inch bolts.

E. Quantities and locations as shown in the Drawings.

2.21 OUTRIGGER BATTEN

A. Outrigger batten shall be nominal 1-1/2 inch black steel pipe, ASTM A53/A Strong (Schedule 40), stripped and painted with at least one (1) coat of flat black paint.

B. Batten shall be supported from the T-bar battery ten (10) feet O.C. by brackets made of steel plate.

C. Outrigger batten shall extend the full width of the lock rail and be rigidly fastened at each end.

D. Install as shown in the Drawings.

2.22 INDEX STRIP LIGHT

A. Index Strip Light shall be of steel construction. Exterior finish shall be flat black baked enamel. Interior shall be painted flat white baked enamel.

B. Light source shall be LED and shall provide at least white and blue LED emitters on separate circuit.

C. Housing shall be designed, constructed, and installed so as to adequately light the Lock Rail without lighting the stage area.

D. Index Strip Light shall extend the full length of the Lock Rail, less two (2) feet, centered on the rail.

E. Entire assembly shall be listed and carry a label from an Nationally Recognized Testing Laboratory.

F. Fixture shall provide local dimming control of each circuit.

G. The following fixtures shall be acceptable:

1. “Index Light” as manufacturered by I.Weiss
2. “LED Index Light” as manufactured by Texas Scenic Company
3. “RAILite” as manufactured by Lumenesce
4. Approved equal.

H. Install as shown in the Drawings.

2.23 BELAYING PINS

A. Belaying pins shall be lathe-turned from clear hickory or approved equal material. The tip shall be tapered for ease of insertion.

B. Pins shall be 21 inches long with a 1-5/32 inch diameter shaft below the shoulder and 1-11/16 inch above the shoulder. Rosco Laboratories No. 71700 0021 or approved equal.

C. Provide and install one (1) pin for every one (1) feet of pin rail length.

2.24 SYSTEM SIGNAGE

A. Provide placard(s), placed in conspicuous location(s) visible from the operating area(s), with information on stage rigging system.

B. Sign shall be engraved lamicoid, filled with contrasting paint, with text as shown in the Drawings.

C. Size, quantity and location(s) per Drawings.

2.25 ROPE

A. Counterweight set purchase lines

1. Spun polyester:
    a. "Multiline II" by Teufelberger, Fiber Rope Company, Fall River Massachusetts.
    b. “Pro-Master” by Samson Rope Technologies, Ferndale, Washington
    c. Approved equal.
2. Rope shall be of domestic manufacture. Contractor shall submit certification of manufacture with bid.
3. Lines shall be attached to the top of each arbor with a bowline knot and to the bottom of each arbor with two (2) half hitches. The rope ends shall be secured back to the standing lines with two (2) nylon tension ties.
4. Color: white with orange or green tracers.

B. Electric cable snatch lines and special rigging lines

1. Braided polyester:
    a. "Stage-Set X" by Teufelberger, Fiber Rope Company, Fall River Massachusetts.
    b. “Static Rope” by Samson Rope Technologies, Ferndale, Washington
    c. Approved equal.
2. Lines shall be attached to the cable cradles with bowline knots and the rope ends secured back to the standing line with two (2) nylon tension ties.
3. Rope shall be of domestic manufacture. Contractor shall submit certification of manufacture with bid.
4. Color: black.

C. All ends shall be heat sealed to prevent unraveling.

D. Sizes and quantities per Drawings and Schedules.

2.26 STEEL CABLE

A. All rope shall be impregnated with a dry lubricant. All cable shall meet the requirements of the ASTM Standard A 1023A-M, “Standard Carbon Steel Wire Ropes for General Purposes.” Certification shall be provided from an independent testing laboratory.

B. Multi-line set lift lines. 7x19 preformed galvanized aircraft cable of right regular lay. Minimum breaking strength shall be not less than indicated below: Cables larger than 3/8 inch diameter are permitted to be of 6x37 XIPS construction.

3/16 inch	=	4,200 pounds
1/4 inch	=	7,000 pounds
5/16 inch	=	9,800 pounds
3/8 inch	=	14,400 pounds
7/16 inch	=	17,600 pounds
1/2 inch	=	22.800 pounds

C. All wire rope connections shall employ thimbles of the proper size and compressed oval sleeve fittings as manufactured by National Telephone ("Nicopress"). All fittings shall be malleable copper. Aluminum fittings shall not be acceptable. All connections shall be selected and installed to develop the full tensile strength of the cable. Free ends shall extend above the fittings to an amount equal to the rope diameter. Rope ends shall be seized with a high-strength epoxy sealant. Contractor shall maintain and inspect all swaging equipment on a daily basis to ensure the integrity of swaged fittings.

D. Drop-forged steel cable clips may not be used, except in specific locations as directed by this Specification, or in locations approved in advance by the Theatre Consultant. Clips shall meet or exceed Federal Specification FF-C-450 and shall produce a termination equal to at least 80 percent of the breaking strength of the wire rope. The saddles of the clips shall be in contact with the load end of the rope. One (1) clip shall be tight against the thimble to retain the cable in the thimble. Rope ends shall be seized with a high-strength epoxy sealant and secured to the standing line with nylon tension ties. Quantity and separation of the clips shall be according to the following:

Cable Diameter	Quantity of Clips	Inches of Cable to Turn Back
3/16 inch	2	3-3/4 inches
1/4 inch	2	4-3/4 inches
5/16 inch	2	5-1/4 inches

Cable Diameter	Quantity of Clips	Inches of Cable to Turn Back
3/8 inch	2	6-1/2 inches
7/16 inch	2	7 inches
1/2 inch	3	11-1/2 inches

E. Sizes and connections per Drawings.

2.27 TRIM CHAINS

A. Trim chains shall be minimally compliant with OSHA Requirements for sling usage, CFR 26 1910.184 (e)(5). Chain shall have a breaking strength of 13,000 pounds. Chain shall be one of the following:

1. JR Clancy “Alpha Chain”.
2. Peerless “7mm Theatrical Rigging Chain”
3. Texas Scenic “InLine Theatrical Chain”

B. Trim chains shall be minimum 42 inches long. One end of each chain shall be attached to the stage end of each lift line. Trim adjustment shall be with a screw-pin type drop forged shackle; proof tested to not less than five (5) times the lift line working load.

D. Quantities and attachment per Drawings.

2.28 PIPE BATTENS

A. Pipe battens shall be nominal 1-1/2 inch black steel pipe, ASTM A53/A Strong (Schedule 40), stripped and painted with at least one (1) coat of black primer and one (1) coat of flat black paint.

B. Splices shall be close-fitting internal steel sleeves with a wall thickness of not less than 0.1875 inch, and minimum 24 inches long. One side of the splice shall be held in place with a minimum of two (2) plug welds. Other side shall be held with a minimum of two (2) 5/16 inch bolts and lock nuts; bolts shall be placed at right angles. For removable pipe sections, see Drawings for location of welded and bolted splice sides.

C. Both ends of every batten, including electric sets and track strong backs, shall be threaded and covered with a “safety yellow” plastic drive-on cap. Both caps shall be stenciled with the lineset number on two opposing sides.

D. Every batten shall be painted with a yellow one (1) inch wide strip at the center.

E. A one (1) inch wide white strip shall be painted at the attachment point of each lift line, to indicate the plumb attachment of each lift line.

F. Battens shall be engineered and installed for straight installation. A total upstage-downstage tolerance of not more than one (1) inch is acceptable. Pipe batten shall not deviate from true straight installation by more than 1/2 inch in the upstage or downstage direction.

G. Lengths and quantities as per Drawings.

2.29 TRUSS BATTENS

A. Pipe battens shall be nominal 1-1/2 inch I.D. black steel pipe, ASTM A53/A Strong (Schedule 40), stripped and painted with at least one (1) coat of black primer and one (1) coat of flat black paint.

B. Web elements shall be steel plate, as shown in the Drawings, continuously welded both sides, top and bottom. Coordinate the placement of web elements with the position of lift points. Design and engineer the welding pattern for welding joining elements to chords to minimize effects of heat warping of the steel.

C. Splices shall be close-fitting internal steel sleeves with a wall thickness of not less than 0.1875 inch, and minimum 24 inches long. One side of the splice shall be held in place with a minimum of two (2) plug welds. Other side shall be held with a minimum of two (2) 5/16 inch bolts and lock nuts; bolts shall be placed at right angles. For removable pipe sections, see Drawings for location of welded and bolted splice sides.

D. Both ends of every batten, including electric sets and track strong backs, shall be threaded and covered with a “safety yellow” plastic drive-on cap at the top and bottom chord. The bottom chord caps shall be stenciled with the lineset number on two opposing sides.

E. Every batten at top and bottom chord shall be painted with a yellow 1 inch wide strip at the center.

F. On the top chord a one (1) inch wide white strip shall be painted at the attachment point of each lift line, to indicate the plumb attachment of each lift line.

G. Battens shall be engineered and installed for straight installation. A total upstage-downstage tolerance of not more than one (1) inch is acceptable. Pipe batten shall not deviate from true straight installation by more than 1/2 inch in the upstage or downstage direction.

H. Lengths, quantities and configurations as per Drawings.

2.30 TRACKS

A. Channel Tracks

1. Tracks shall be of the heavy duty channel type, approximately 3 inch x 3 inch 14-gauge galvanized steel, entirely enclosed except for slot in bottom.

   a. Approved Manufacturers:

      i. ADC 2800 series
      ii. H & H Specialties 400 series.
      iii. Approved equal.

2. Tracks shall be supported within 12 inches of the live and dead ends, at the center of the overlap, and no more than 7 feet O.C. in between, as shown in the Drawings.
3. Carriers shall be constructed of steel bodies with a "hollow center" design to contain operating line, with nylon tired ball bearing wheels and six (6) inch trim chains on plated swivels.

   a. Approved Carriers:

      i. ADC 2851 (single) and 2852 (master).
      ii. H & H 418 (single) and 419 (master).
      iii. Approved equal.

4. Operating line shall be 1/2 inch braided cotton with a fiberglass center.
5. Live and dead end pulleys shall contain eight (8) inch diameter sheaves on ball bearings. For travelers mounted in rigging systems using lineset spacing of nine (9) inches or less, mount eight (8) inch dead-end pulleys at a 45 degree angle, with a total projection not greater than six (6) inches from lineset center line.

   a. Approved Pulleys:

      i. ADC 2863-A (live) and 2864-A (dead),
      ii. H & H 423 (Live) and 424 (dead)
      iii. Approved equal.

6. Floor pulleys for fixed traveler tracks shall contain eight (8) inch diameter sheaves on ball bearings. Side plates shall be slotted to allow a minimum eight (8) inch vertical adjustment.

   a. ADC 2866-A
   b. H&H 422
   c. Approved equal.

7. Floor pulleys for flying traveler tracks shall contain eight (8) inch diameter sheaves on ball bearings. Pulleys for flying traveler tracks shall be suspended from track carriers by jack chain. Pulleys shall include an attached sand bag of sufficient weight to keep operating line taut. Adjust operating line length so that bottom of sand bag is approximately six (6) inches above the floor when curtain bottom hem is at floor.

   a. ADC 2866-A

b. H&H 422
c. Approved equal.

B. I-Beam Tracks

1. Tracks shall be of the heavy duty I-beam type, approximately 2-1/2 inch x 1 inch 11-gauge extruded aluminum.

a. ADC 1400
b. H&H 316 Series
c. Approved equal.

2. Carriers shall be constructed of steel bodies with nylon tired ball bearing wheels and six (6) inch trim chains on plated swivels. Each carrier shall include nylon strips inside either side to minimize friction and noise from the track edges. Each carrier shall be cushioned from the adjacent carrier by neoprene bumpers.

a. Approved Carriers:

i. ADC 4201
ii. H&H 316 (Single) and 317 (Master)
iii. Approved equal.

3. Tracks shall be supported at both ends and no more than four (4) feet O.C. in between.

C. Motorized Straight Tracks

1. Tracks shall be of the heavy duty channel type, approximately 3 inch x 3 inch 14-gauge galvanized steel, entirely enclosed except for slot in bottom.

a. Approved Manufacturers:

i. ADC 2800 series
ii. H & H Specialties 400 series.
iii. Approved equal.

2. Tracks shall be supported within 12 inches of the live and dead ends, at the center of the overlap, and no more than seven (7) feet O.C. in between, as shown in the Drawings.
3. Carriers shall be constructed of steel bodies with a "hollow center" design to contain operating line, with nylon tired ball bearing wheels and six (6) inch trim chains on plated swivels.

a. Approved Carriers:

i. ADC 2851 (single) and 2852 (master).
ii. H & H 416 (single) and 417 (master)
iii. Approved equal.

4. Live and dead end pulleys shall contain eight (8) inch diameter sheaves on ball bearings. For travelers mounted in rigging systems using lineset spacing of nine

(9) inches or less, mount eight (8) inch dead-end pulleys at a 45 degree angle, with a total projection not greater than six (6) inches from lineset center line.

a. Approved Pulleys:

i. ADC 2863-A (live) and 2864-A (dead).
ii. H & H 423M (live) and 424M (dead).
iii. Approved equal.

5. Operating line shall be 3/16 inch galvanized aircraft cable. For systems utilizing traction drive, the operating line shall be provided with an extruded nylon cover.

D. Finishes

1. All Steel Components shall be painted or powder coated flat black.
2. All Aluminum components shall be anodized flat black.
3. All plastic or nylon components shall be inherently colored black.
4. All operating line and tow ropes shall be black.

E. Every track segment shall be one (1) continuous piece of maximum catalog length, except where splicing clamps are required. Splicing clamps shall provide a flush, positive alignment of track sections.

F. All rope operated and motorized tracks shall be provided with rear fold devices to stack curtain only at offstage track ends. Rubber washers shall be placed on both sides of each rear fold tab.

G. Provide and install tow ropes for each end of each walk-draw curtain panel. Tow ropes shall be 3/8 inch braided cotton rope with two (2) inch diameter wood balls on the operating end, four (4) feet above stage level. Ropes and handles shall be black.

H. All pulleys shall provide for positive retention of the operating line.

I. Quantities, sizes, and locations as per Drawings.

2.31 TRACKS – AUDITORIUM LIGHT FIXTURE SERVICE

A. Tracks shall be of the heavy-duty channel type, approximately 3-inches x 3-inches, 12-gauge aluminum or 14 gauge steel, entirely enclosed except for slot in bottom. Automatic Devices Company 382 series or H&H Specialties #410S-B series, or approved equal.

B. Each track shall be one continuous piece, except where splicing clamps are required. Splicing clamps shall provide a flush, positive alignment of track sections. ADC 2824-BL or H&H #407B, or approved equal.

C. Tracks shall be supported at both ends and no more than 6'-0" O.C. in between. Coordinate suspension points with the building structure and all associated trades.

D. Carriers shall be constructed of steel bodies with a "hollow center" design to contain operating line, with nylon tired ball bearing wheels. Remove all trim chains. ADC 2851-BL (single) and 2840-BL (fixture) or H&H #418 (single) and #451 (fixture), or approved equal. Fixture carrier shall be configured to allow attachment of standard 4-inch square electrical box (by others). Provide one (1) fixture carrier per light fixture (by others), provide one (1) single carrier per 3’-0” of track to support electrical cable (by others).

E. Operating line shall be 3/8" braided cotton with a fiberglass center, ADC 2828 or H&H #414, or approved equal.

F. Live end pulleys shall contain two (2) 5” diameter nylon sheaves on ball bearings. Dead end pulleys shall contain a single 5” diameter nylon sheave on ball bearings. ADC 2863-BL (live) and 2864-BL (dead) or H&H #433 (live) and #434 (dead), or approved equal.

G. Floor pulleys shall contain a 5-inch diameter nylon sheave on ball bearings. Side plates shall be slotted to allow a min. 7 inch vertical adjustment. ADC 2866-BL or H&H #432, or approved equal. The floor pulleys shall be securely anchored to the catwalk floor.

H. All pulleys shall provide for positive retention of the operating line.

I. Provide end stops for placement at each track end. ADC 2809-BL or H&H 411B, or approved equal.

J. All tracks and associated hardware shall be flat black.

K. All tracks shall be provided with rear fold devices. Rubber washers shall be placed on both sides of each rear fold tab.

L. Complete track assembly and operating line provided and installed by the Stage Rigging Contractor.

M. All required power feeds, wire, conduit and light fixtures provided and installed by the Electrical Contractor. Coordinate track installation with the Electrical Contractor. Locate end stops to assure proper alignment of light fixtures in deployed position.

N. Quantities, sizes, and locations as indicated on the Drawings.

2.32 MOTORIZED RIGGING COMPONENTS

A. Motors

1. General

a. Except as otherwise specified, all motors shall have minimum Class A winding insulation in accordance with NEMA Standard MG 1-12.40 rated for 15 to 20 minute intermittent duty cycle.

b. All motors shall be equipped with grease lubricated anti-friction ball or roller bearings. Two (2) removable, threaded lubrication plugs shall be furnished for each bearing housing, both to be removed for lubrication with low-pressure grease tube applicator. Upper plug opening shall be for lubricant entrance, and lower plug opening shall permit simultaneous purging of spent lubricant from the bearing.
c. Provide a drain plug in the bottom of the frame on the bearing brackets so as to permit periodic drainage of any possible accumulation of moisture.
d. Conduit connection box shall be watertight, of cast iron, aluminum, or wrought iron construction, with neoprene gasket. A tapped hole shall be provided for conduit entrance and connection box shall be oriented and coordinated with associated equipment to provide full access to internal connections. Corrosion resistant, high melting point, non-flammable sealing compound shall be used around motor leads where they pass through the motor frame.

2. AC Motors

a. All AC motors shall be squirrel-cage type, of NEMA torque design B, with medium starting torque, normal breakdown torque, low slip, and low starting current.
b. All AC motors shall be TEFC (totally enclosed, fan cooled) enclosures as defined by NEMA Standard MG 1-12.21.

3. For all fixed speed winches, the gear reducer shall incorporate a high inertia flywheel at the motor stage for "soft start" and "soft stop" capability.

B. Gear Reducers

1. Right Angle and Helical Bevels

a. Each right angle bevel or spiral bevel gear drive shall be selected to transmit twice required torque, horsepower, and impact. All ratings shall be AGMA mechanical ratings for load classification service factor equal to 2.0, except as otherwise noted.
b. Each right angle bevel gear drive unit shall consist of the following:

i. One housing made of high tensile nickel cast iron, properly reinforced at all strain points for maximum rigidity, with precisely located gear set bearing supports. Each housing shall have sufficient capacity for lubricant, and surface area for adequate heat dissipation.
ii. Pinions, gears, and gear shafts manufactured from chromium, molybdenum alloy steel (AISI C-4150) and heat-treated to 32 Rockwell "C" scale minimum core hardness.
iii. Pinion and gear shafts supported by tapered roller or precision ball bearings of adequate capacity, properly mounted, and furnished with oil seals.
iv. All shaft diameters precisely ground, stepped, and radiused to minimize stress concentrations.

2. Helical Worm

a. Gear reducers shall be combination helical-worm reducer, directly flange-mounted to the motor/brake assembly. The reducer shall have two (2) gear stages; the first stage shall be helical and the second stage shall consist of a worm and worm wheel. The worm shaft shall be milled, hardened, and ground to insure maximum efficiency and long life.
b. Gear reducers shall be enclosed in high-strength gray cast iron housings with precisely located gear set bearing supports. Each housing shall have sufficient capacity for lubricant, and surface area for adequate heat dissipation.
c. Gear reducer shall incorporate a high inertia flywheel at the motor stage for "soft start" and "soft stop" capability.
d. Gear reducers shall be SEW-Eurodrive "Helical-Worm Gear", or approved equal.
e. Gear reducers shall be of the worm gear type with compound helical bevel to single envelopment worm or double enveloping worm gears. Single stage 'Spirol' gearing is not acceptable equipment provided for the Work of this Specification.
f. Worm gear reducers shall be selected to safely transmit specified torque and horsepower. Capacity and type shall be as required. Design of the power transmission train shall provide for gearing ratios of the worm gear stage to be greater than 40:1 wherever practical. Ratios less than 40:1 shall require approval of the Theatre Consultant. All ratings shall be AGMA Class 2 mechanical ratings with a load classification service factor equal to 1.3, except as otherwise noted or approved.
e. Each worm gear reducer shall consist of essentially the following:

i. One housing made of high tensile nickel cast iron, properly reinforced at all strain points for maximum rigidity, with precisely located gear set bearing supports. Each housing shall have sufficient capacity for lubricant, and surface area for adequate heat dissipation.
ii. Worm gears manufactured from gear bronze with minimum tensile strength of 40,000 PSI and properly keyed or splined to the gear shaft. Gear shafts shall be manufactured from chromium, molybdenum alloy steel (AISI C-4150).
iii. Worm and worm shaft manufactured from chromium, molybdenum alloy steel (AISI C-4150) and heat- treated to 32 Rockwell "C" scale minimum core hardness.
iv. Each worm gear and shaft supported by two (2) tapered roller bearings of adequate capacity, properly mounted, and furnished with oil seals.
v. All shaft diameters precisely ground, stepped, and radiused to minimize stress concentrations.

C. Primary Brake

1. Except where indicated otherwise, all brakes shall operate from single-phase AC, and shall be electrically released/spring applied, designed to conform to applicable NEMA standards for intermittent duty. Springs shall be sized to limit

brake release noise to comply with the noise requirement as outlined in this article. All brakes shall be furnished with means for manual release.

2. Brakes shall have drip-tight NEMA Type 2 enclosures.
3. All disc brakes, except primary shaft safety brakes, shall be designed for mounting directly to motor frame and bells.
4. All brakes shall stop and hold a minimum of 200 percent of motor full torque capacity.

D. Secondary brakes

1. All motors shall incorporate a secondary brake method described below and as shown in the Drawings
    a. Centrifugal overspeed
        i. Brakes shall be a fully mechanical overspeed brakes, directly mounted to the drum shaft or sprocket drive shaft.
        ii. The overspeed brake shall engage automatically when the set exceeds maximum speed.
        iii. It shall be possible to preset the brake tension to adjust the stopping distance, so that it brings the load to a controlled stop without shock.
        iv. The secondary brake shall stop and hold 200 percent of the full load torque.
    b. Pneumatic-release disk brakes.
        i. Brakes shall be spring-applied, pneumatically released disk brakes, directly mounted to the sprocket drive shaft in two (2) locations.
        ii. The brakes shall engage automatically when the set exceeds maximum speed, E-stop is engaged or the control system detects a fault.
        iii. Each secondary brake shall stop and hold 125 percent of the full load torque.
    c. Drive-through brakes
        i. The brake shall be a continuously applied, automatic load brake with a retarding torque matching the load on the hoist.
2. All secondary brakes shall be placed between the gear reducer and the load.

E. Frames & Guards

1. All motors and associated gearboxes shall be installed on built-up frames, which contain all elements of the lifting system.
2. All motor units shall have drip pans of at least 16-gauge sheet steel to contain leakage of oil from motor, gearbox and/or pillow blocks.
3. All moving equipment, devices, and cables shall be guarded in a manner to prevent accidental contact with other machinery, devices, lines, or personnel. Guards shall not impede the operation of the protected device or adjacent devices.
4. All motor assemblies shall include shrouds to incorporate this protection.

a. Shroud construction shall be sufficient to resist incidental impact without deforming. Shroud material shall be open metal mesh with openings not to exceed 1/2 inch unless otherwise noted in the Drawings.
b. Shrouds shall be removable for maintenance
c. Overall shroud construction and attachment shall not produce additional noise when the motor is in operation.
d. Shroud construction must be designed so as to not impede cooling.

F. Grooved Cable Drums

1. Cable drums shall be grooved cast or welded steel, properly annealed. Minimum tread diameter shall be at least 30 times the diameter of the wire rope employed. Drums shall be grooved for cable and sized as noted in Drawings.
2. All cable drums shall have sufficient cable capacity in a single layer for maximum travel plus a minimum of three (3) dead wraps for each cable connection. One (1) hole shall be drilled through the root of the groove for each cable end. This hole shall have an axis which, in section, is angled 45 degrees from a radial line drawn from the shaft to the center of the hole. Hole shall be chamfered, free of burrs and of correct size to retain stop sleeve cable retainer.
3. Cable grooves shall be lathe turned and machined to the proper size for cable used, with groove diameter clearances to fit cable closely and prevent cable from assuming oval or elliptical shape under load. Groove diameter clearance shall be 10 percent for cables smaller than 3/8 inch diameter, and eight (8) percent for cables 3/8 inch diameter and larger. Minimum groove depth shall be 40 percent of the cable diameter.
4. Adjustable steel or UHMW plastic rollers or guards shall be provided to prevent cable from jumping out of grooves. These elements shall be adjusted so that they do not bear on the cable when the cable is correctly seated in the groove. Rollers shall be supported at both ends by precision ball bearings.
5. Fleet angles shall not exceed ± 1.5 degrees.
6. All cable drums shall be appropriately supported by shafting of sufficient size closely supported on both ends by bearings to minimize bending stresses in the shaft. Bearings shall be ball bearings with self-aligning, four-bolt, flange-mount style, cast iron housings, Peer UCF-200 series, or approved equal. Each bearing shall be selected to support at least three (3) times the total load of the respective drum.

G. Shafts, Keys and Couplings

1. All shafting shall be designed and proportioned in accordance with the "Code for Design of Transmission Shafting" of the ANSI to safely transmit all applied loads and torques and their combinations with proper allowance for impact.
2. All shafting shall be designed to satisfy critical speed and torsional deflection requirements.
3. All shafting shall be of AISI C-1018 steel minimum, unless otherwise specified.
4. All keys and keyways shall be designed to safely transmit all applied loads and shall be proportioned according to ANSI standards.
5. All stepped down shaft corners shall be properly radiused.

6. Shaft couplings shall maintain the proper alignment and load rating of the shaft. System design shall employ the fewest number of couplings possible. Couplings shall be Rigid/Flexible type couplings.

H. Traction Blocks

1. A V-grooved sheave designed to drive lift lines in a motorized lineset application. The sheave shall be designed to minimize wire rope slippage and abrasion during operation.
2. Traction block shall hold the load without slippage in a static condition.
3. Traction Block shall be rated for the loads and capacities as shown in the Drawings.

I. Chain Drive Components

1. Chain drives shall be used only on motor-assisted counterweight line sets. Design schemes employing chain transmission of power are not acceptable for any 'dead-lift' applications. Any other applications must be specifically approved by the Theatre Consultant.
2. All chain transmissions shall be double ANSI standard roller chain, type selected to safely transmit the required torque, horsepower, and impact.
3. Unless otherwise noted, all roller chain up to and including 3/4 inch pitch shall be riveted type, and all sizes one (1) inch pitch and above shall be detachable type with cotter pins. Use proper mounting links and attachments to connect roller chains or to fasten roller chains to driven object. Terminations shall be bolted with a minimum of two (2) high strength bolts and locking nuts at each termination. The strength of all connections shall be equal to the strength of the roller chain.
4. Sprockets shall be machined from steel plate. All sprocket teeth shall be accurately cut to ANSI dimensional standards. Bore diameters shall be held to proper tolerances to prevent side-weave, run-out, and eccentricity. The hub diameter shall be at least 1.7 times the bore size.
5. Large steel sprockets shall be manufactured by inserting a steel hub into a steel plate sprocket. Steel hub and sprocket contact surfaces shall be accurately machined before welding. Welds shall be continuous and shall have strength equal to the sprocket shear area at the hub diameter.
6. Sprocket pitch diameter as indicated in the Drawings.
7. Sprockets shall be keyed to shafts.
8. All chain drive systems shall be accurately aligned with sprockets, spaced at a proper center distance, and closely supported by approved tapered roller bearings. Provide means for appropriate bearing lubrication
9. Chain tensioning devices must be provided as required maintain appropriate chain tension. Tensioning devices must be field-adjustable and must be installed so as to not impede operation of device or adjacent devices.
10. Guides shall be provided to maintain full engagement of the chain on all sprockets.

J. Electrical Enclosures

1. Recessed panels shall be contained within code gauge, formed, and welded, steel back boxes or rack mount style enclosures. The operating panels shall be minimum 16-gauge steel or 6061-T6 aluminum plate, recessed within the back box to a depth sufficient to permit a locking hinged door to completely cover the panel without affecting any device within the enclosure. The front surface shall be flush with the finished wall surface.
2. Surface mounted control panels shall be contained within code gauge steel back boxes, with all seams and joints continuously welded and ground smooth. Surface mounted panels shall conform to NEMA 9 standards. Operating panel shall comprise the front cover of the enclosure.
3. Complete accessibility to internal components shall be provided by screw-down, hinged operating panels; a friction-lock or bar-lock shall be provided to hold the operating panel open for service. Panels shall have a minimum thickness of 16-gauge and shall incorporate internal bracing where required by panel size to prevent flexing of the panel.
4. All steel shall be zinc-phosphate treated, primed with a coat of zinc chromate, and finish painted with baked enamel. All aluminum panels shall be anodized and then be painted with a thermo setting epoxy paint. All finish colors shall be as selected by the Theatre Consultant.
5. All labels and legends shall be permanently engraved directly into the faceplate. Engravings shall be filled with contrasting color enamel. Micarta, lamicoid, and other types of engraved plastic labels shall not be used unless specifically noted. Dry transfer, decals, plastic "dymo," or other types of adhesive labels or silk screened legends shall not be used.
6. All control panel face plates shall have beveled edges and rounded corners.
7. Panel(s) shall have a nameplate in a conspicuous location identifying the Rigging Contractor, Project and Panel Designation.
8. Each panel shall be completely factory-wired internally, with permanently identified barrier type terminal strips provided for the connection of the external wiring. All panels shall be factory tested.

K. Motor control cabinets

1 Cabinet(s) shall be of steel framed construction with applied steel side, top and bottom panels, equal to a NEMA-9 rating. All components shall be factory primed and painted.
2 Cabinet(s) shall have a locking front door with an integral safety-interlock, which when the door is opened shall automatically disable the main electrical feed to the panel.
3. Cabinet(s) shall contain all motor control system electronics, starters, and power as shown in the Drawings.

   a. All wires inside the cabinet(s) shall be identified at the jacket with separate numbers.

4. An engraved lamicoid label shall be bolted or riveted to the front of the cabinet, to read:

Motor Control Cabinet (Number)
Set (Name #1)
Set (Name #2)

(Etc.)
Schuler Shook Theatre Planners, Chicago, IL
(Name, Location and Phone Number of Rigging Contractor)
(Year of Commissioning)

5. Install as shown in the Drawings.

L. Limit Switches

1. All linear motion monitoring switches shall be furnished with rotary lever arm, cam, or plunger style operators.
2. All rotary motion monitoring limit switches shall have a minimum NEMA-12 or IP-55 rated surface mounted enclosure with provisions for conduit fitting mounting. Each limit switch shall employ a lead screw or gear driven, ball bearing supported camshaft and associated precision, snap-action type contact assemblies. Each circuit shall be actuated by an individually adjustable cam operator.
3. All adjustable linear motion monitoring limit switches shall include sufficient liquid-tight, flexible conduit and wire including grounding conductor, to permit at least ten (10) feet of movement for adjustment.
4. All intermediate position limit switches shall provide accurate positioning regardless of direction of travel. See Drawings for intermediate preset positions.
5. All motor-operated equipment shall be equipped with normal travel limit switches to stop motion at each end of travel and redundant over travel limits which shall remove power from the motor when actuated at each ultimate limit of travel. All ultimate limit switches, when struck, shall de-energize the corresponding motor, and all other affected motors until the assembly is manually re-set. Motor control cabinets shall be equipped with over travel bypass key switches to permit resetting the affected unit. Normal travel limit switches and redundant over travel limit switches shall each be individually enclosed devices with independent motion sensing.
6. All rotary limit switches shall be located so as to be easily accessible following installation.
7. Verify exact limit locations in field.

M. Encoders shall be used to provide position and speed data for all permanently installed motorized rigging sets. These encoders shall be capable of retaining position data during emergency stop and normal power down events.

N. Safety and Protective Devices

1. Slack Line Detection. Slack Line Dectection shall be provided by means of a low-voltage detecting device. Lift line contact with this detector shall signal a slack condition to the control system.

2.33 MOTORIZED RIGGING ASSEMBLIES

A. Lineshaft hoists

1. Lineshaft hoists shall be motorized. Capacity, speed, drum quantity and capacity as shown in the Drawings. Each winch drive unit assembly shall consist of a motor, primary brake, gear reducer, limit switch assembly, drums, and secondary brakes. All drives shall be direct.
2. Install drums using opposing spiral groove patterns, so that line sets retain a plumb vertical movement through the entire set travel.
3. Hoist components shall be enclosed by a common frame. Frame shall be designed and engineered to resolve all lateral forces associated with normal set operation.

B. Counterweight Assist Hoists

1. Winches shall be sprocket drive and motorized. Capacity and speed as shown in the Drawings. Each winch shall be capable of overcoming an imbalance of 50% of the scheduled payload capacity. Each winch drive unit assembly shall consist of a motor, primary brake, gear reducer, limit switch assembly, drive sprocket, and secondary brakes. All drives shall be direct.
2. Drive Chain termination at bottom of arbor shall include a threaded tensioning device.
3. Sprockets support bearings shall be designed for a dynamic radial loading of at least 1.5 times of the weight required in item 1 above.

C. Horizontal Traversing motors

1. Curtain operator shall be equipped with either a ten (10) inch steel "pay-in/pay-out" grooved drum driven by roller chain and sprockets from the output shaft of a gear reducer or a double V-groove eight (8) inch cast iron pulley mounted to the output shaft of a gear reducer. Curtain operating line speed shall be as shown in the Drawings.
2. Steel frame assembly shall include spring-loaded nylon pulley to keep proper tension on operating line.
3. Unit shall be driven by an instantly reversing motor coupled directly to a worm gear reducer.
4. For motors mounted on moving elements, provide a single multi-conductor cable for power and control. Cable shall be type SC or SO and shall be of sufficient length to allow track to be brought to within four (4) feet of the floor. Cable management shall be provided as shown in Drawings.
5. Approved Manufacturers
    a. ADC.
    b. H&H Specialties.
    c. Approved equal.

D. Fire Safety Curtain

1. The curtain assembly shown in the Drawings and described herein is intended to be compliant with relevant governing standards for Fire Safety Curtains. The

Rigging Contractor is responsible for designing, providing and installing a fire safety curtain system that is in compliance with all applicable local codes and requirements.

2. Fire curtain shall be motorized. Subject to the requirements previously noted in this Section, the curtain motor shall provided with a rated capacity of equal to the weight of the curtain and a hoisting speed as shown in the Drawings. Unless otherwise noted, all cables shall run continuously from the curtain assembly or counterweight assembly to the motor assembly without clewing. The motor assembly shall consist of a motor, primary brake, gear reducer, limit switch assembly, drum(s), and secondary brake(s). All drives shall be direct.
3. All components of the fire curtain assembly shall be subject to the requirements previously described in this section unless noted otherwise.
4. The emergency release of the fire safety curtain shall be controlled by a hydraulic governor which, in the event of an emergency release, shall regulate the closing of the curtain to be compliant with the aforementioned performance standards.
5. Stay chains shall be minimally compliant with OSHA Requirements for sling usage, CFR 26 1910.184 (e)(5). Chain shall have a breaking strength of 13,000 pounds Chains shall be securely fastened to the curtain's top batten. Chain shall be one of the following:

    a. JR Clancy “Alpha Chain”.
    b. “Secoa Theatrical Chain”
    c. Alternatively chain shall be rated for overhead lifting and shall be 9/32 inch System 8 alloy chain, rated at not less than 7,500 pounds breaking strength.

6. Smoke pocket shall be of all steel construction, with bolted assembly and connections, as indicated in the Drawings. All bolts attached within the curtain operating plane shall be installed to present the bolt head side in the pocket interior. Paint all exposed surfaces with one (1) coat of rust-inhibiting primer and one (1) coat of enamel, color: black.

    a. Access for servicing the curtain and vertical guide shall be provided by means of a movable or removable panel for a minimum of ten (10) feet above the floor for an unframed and braille curtain and the full height for a framed curtain when closed.

7. Side guides shall consist of roller guides attached to sides of curtain. Roller guides shall each consist of two (2) roller or ball bearing steel wheels. Guides shall be spaced minimum 18 inches O.C. Each guide shall be attached to the curtain's metal stiffened edges by way of three (3) or more minimum machine screw assembly or an equivalent attachment system. Guide wheels shall be contained within 14-gauge galvanized steel tracks installed rigidly in place so that roller guides will operate smoothly. The guide track shall be installed for the entire height of the vertical guide pockets, less 3 inches at the bottom.

8. Curtain Fabric

    a. Curtain fabric shall comply with all local fire codes for thermal conductivity, air pressure resistance, and corrosion resistance. Subject to the above requirements, the curtain fabric shall be of one of the following types:

        i. 100% glass yarn, nickel wire-inserted, minimum 38 oz. per square yard. Type THERMO-SPEC FABRIC STYLE 44-WFCC by Canvas Specialties Company, Greenville, South Carolina; or #3140 by W. E. Palmer Company, Boston, Massachusetts.
        ii. 100% glass yarn, minimum 34 oz. per square yard, without wire. Type 1210 ZetexPlus by Newtex Industries, Victor, New York, or THERMO-SPEC FABRIC STYLE 37-FCC by Canvas Specialties Company, Eldersburg, Maryland; or #3035 by W. E. Palmer Company, Boston, Massachusetts.

    b. Fabric shall be sewn into a single panel, size per Drawings, using vertical lap seams, double stitched using flame resistant thread.

9. Curtain Construction

    a. Unframed

        i. Side Reinforcement shall be provided in accordance with the requirements of NFPA 80.
        ii. Top hem shall be 6 inch and contain a nominal two (2) inch I.D. black steel pipe, ASTM A53/A Strong (Schedule 40), with riveted internal pipe sleeves, 18 inch long.
        iii. Bottom hem shall be 12 inches and contain a nominal two (2) inch I.D. black steel pipe, ASTM A53/A Strong (Schedule 40) with riveted internal pipe sleeves, 18 inches long.
        iv. A minimum three (3) inch thick, three (3) pound per cubic foot density flameproof yield pad shall be sewn to the curtain, with two (2) rows of flame-resistant thread. Yield pad shall compress to seal the bottom of the curtain tight against the passage of smoke.
        v. Lift line attachment to top batten shall be made with two-piece pipe clamps made of minimum 12-gauge steel with corners rounded and entire assembly deburred. Clamps shall attach to the batten using two (2) minimum 3/8 inch Grade 5 bolts, one (1) under the batten and one (1) over the batten, with the lift cable securely attached using a thimble and three (3) forged wire clips or one (1) swaged fitting. No method of attachment shall require cutting the curtain fabric as to leave exposed cut edges.
        vi. Side guides shall be attached as noted in this Section.

10. Smoke seal. Smoke seal shall be an approximate three (3) inch diameter seal made of the curtain fabric and filled with fiberglass insulation or other noncombustible materials, to a density of not less than three (3) pounds per cubic foot. Smoke seal shall be attached to the upstage side of the proscenium wall, above the proscenium opening. The seal shall contact the curtain's top edge, and compress against it when the curtain is in its deployed position to make the seal as smoke-tight a seal as practical.

11. Fire curtain safety assemblies shall be designed to operate in emergency and nonemergency conditions for all imposed loads, including dead loads of the assembly, and for a pressure differential of two (2) pounds per square foot on the fire safety curtain over the area of the proscenium opening.
12. Release system. Release system shall be designed and installed to lower the curtain automatically and by manual trip from either side of the proscenium opening. When released, the curtain shall lower to the floor in a manner and timing that is compliant with the applicable fire codes. In addition, it shall be possible to manually lower and raise the curtain without engaging the trip system. The components of the release system shall include, but not be limited to, the following:
    a. Release line: 3/32 inch 7x19 aircraft cable.
    b. Release: An easily graspable handle or lever that is attached to the emergency release line. Color: Red. Force required for activation shall not be more than five (5) pounds
    c. Fusible links: Designed to separate automatically when ambient temperature reaches 160 degrees Fahrenheit. Quantity, location and installation per Drawings.
    d. Electronic Heat Detection in accordance with the requirements of ANSI E1.22-2016.
13. Signage
    a. Emergency Release: One sign near release line on each side of stage. Sign shall be white with bold red letters not less than one (1) inch high:
    IN CASE OF FIRE, PULL RED HANDLE
    TO LOWER FIRE CURTAIN AUTOMATICALLY.
    b. Non-Emergency Release: One sign near motor control panel for the fire curtain system. Sign shall be white with bold red letters not less than one (1) inch high:
    NONEMERGENCY FIRE SAFETY CURTAIN OPERATION ONLY
    FIRE CURTAIN IS TO BE LOWERED ALL HOURS THAT STAGE IS NOT IN USE
14. Code Compliance. Rigging Contractor is responsible for submission to local fire officials for compliance with appropriate fire codes. This submission includes fabric, construction, rigging, release system, smoke pocket, and top and bottom seals.

E. Install as indicated in the Drawings.

F. Quantities as per Drawings.

2.34 MOTORIZED RIGGING CONTROL SYSTEM

A. The control system shall be specifically designed for the control of motorized theatrical rigging equipment. It shall provide a level of reliability, accuracy, and integrity appropriate for overhead lifting in places of public assembly.

B. The control system shall perform the functions as noted for specific elements below.

1. Stage Electrics

a. Operator authorization levels to ensure secure access levels and lockout levels of operation and control as noted in this Section.
b. Programmability of target position.
c. Indication of position. All position data to be acquired from positional encoders specific to each axis.
d. Slack-Line Detection

2. Orchestra Ceilings

a. Operator authorization levels to ensure secure access levels and lockout levels of operation and control as noted in this Section.
b. Programmability of target position.
c. Indication of position. All position data to be acquired from positional encoders specific to each axis.
d. Slack-Line Detection

3. Acoustical Curtains

a. Operator authorization levels to ensure secure access levels and lockout levels of operation and control as noted in this Section.

This list of functional requirements describes the minimum operating parameters of the systems.

C. Emergency Stop

1. The emergency stop system shall meet NFPA-79 (Electrical Standard for Industrial Machinery)
2. The emergency stop circuit shall be a normally closed circuit or a supervised circuit that provides the same or greater level of reliability and security. Its operation shall not depend on software or semiconductors.
3. Emergency Stop. There shall be a single emergency stop system that shall, when activated, stop all elements as shown in the Drawings.

a. Emergency stop actuators shall be rear-illuminated mushroom pushbutton switches. Operation shall be PUSH to engage and TWIST to release. Color: red.

4. System shall function as noted below.

a. Category 0: Activation shall directly remove power by means of electromechanical components, using a UL580E Type 2, non-welding, positive break contactor(s).
b. Engagement of the system shall remove power from the motors, but not the control system electronics.
c. Feedback

i. When activated all pushbuttons described in this paragraph shall be illuminated and shall flash to indicate a “STOP” condition. Buttons

shall continue to flash until system has been taken out of “STOP” condition.

d. When the system is taken out of the “STOP” condition no movement shall begin automatically.

5. Panel design and location as shown in the Drawings.

F. Software

1. Motor Control

a. The system shall provide a controller; and a display of the current position and target position of each hoist.

2. The system shall be capable of the following operating parameters:

a. Jog - One axis can be selected and operated directly without presets.
b. Single Axis – One axis can be selected and directed to a preset position.

3. Presets shall be able to be stored, modified, and recalled to allow recording and re-creation of movements.
4. The system shall monitor and provide feedback on the following system components:

a. Axis position
b. Limit Switch Status
c. Emergency Stop Status
d. Fault condition
e. Electrical supply status
f. Slack Line Detection

5. System Hierarchy – The system shall provide the following levels of operational access:

a. System Administrator. User shall be able to modify all operational parameters. This level shall be password protected. The password shall be user-defined at system startup.
b. Supervisor. User shall be able to set targets, create presets, and monitor feedback parameters. This level shall be password protected. The password shall be user-defined at system startup.
c. Operator. User shall be able to jog sets as noted above, execute presets, and monitor feedback parameters. This level shall be password protected. The password shall be user-defined at system startup.
d. Manufacturer Access. Access is password protected and shall be set by the manufacturer and is not user-definable. This level of access shall be equal to System Administrator level access.

G. User interface

1. The control system shall be comprised of individual control panels as shown in the Drawings. Each panel may contain one or more of the following control elements:

   a. Emergency Stop Button(s) as described in this section.
   b. One ON/OFF key switch. Provide five (5) keys. Switch shall not allow removal of key when in the ON position.
   c. Movement Controls: One set of two (2) momentary contact switches, labeled with the appropriate directional destination. It shall be necessary to maintain contact on the switch in order to maintain movement. A dedicated DEADMAN switch shall be acceptable as an alternative to push to run switches.
   d. Positional Readout: One illuminated digital readout for each winch. Readout shall at all times indicate the axes' location as related to a defined datum point. Readout shall be in feet and inches, accurate to 0.25 inch
   e. Set Trim Controls: Controls shall be an illuminated push-button. Controls shall set two (2) intermediate targets between the mechanical upper and lower limits. The location of these intermediate targets shall be as indicated in the dynamic display, and shall be selectable within 1/2 inch. Button shall flash when the location has been stored in the control software. The user will be required to hold the button for three (3) seconds in order to set the trim position.
   f. Visual Feedback Indicators

      i. Control Power Status shall indicate when illuminated that the control panel is active and communicating with the control system/software. Color: Green
      ii. Motor Power Status shall indicate when illuminated that the motor(s) in the system are energized and within the acceptable amperage range. Color: Yellow
      iii. Interlock faults/Error Reporting shall indicate when illuminated that an error condition exists in the system. The indicator shall monitor the following conditions. Color: Red

         a) Overtravel
         b) Slack Line Detection

2. Local Control

   a. Provide local motor control in immediate proximity to each individual motor location.
   b. Control at motors shall be in NEMA Type 1 housings. In addition to pushbuttons for control of stop, up, down and overtravel limit bypass, control stations at motors shall include a three-position switch for delegating control of motor to local-off-normal. All STOP functions, whether local or remote, shall function regardless of the position of the local-off-normal selector switch.

      i. Maintenance pendants may be provided for local control functions provided that the connection of a fixed speed style control pendant to

a variable speed unit will not result in motion or damage to the connected units or vice versa. Connectors shall equal AMPHENOL MS or 97 series. When a maintenance pendant is plugged in the unit shall automatically switch from Normal to Local mode.

3. Push Button Motor Control Panel (MCP-X)
    a. The Motor Control Panel shall be a surface mounted panel and completely wired internally. Design and configuration as shown in the Drawings.
    b. The panel shall contain the following:
        i. Control Panels as shown in the Drawings
    c. Install as shown in the Drawings.
4. All labels and legends shall be permanently engraved into the face of the panel and filled with a contrasting paint. No surface-mounted labels or tags of any kind will be permitted. No decals or silk-screened legends will be permitted.
5. Provide vinyl dust covers for all equipment components that are not wall mounted.

H. Safety & Protective Devices

1. Each winch set that employs slack-line detection shall create an Emergency Stop condition when a slack line is detected.
2. Secondary brake systems shall provide feedback to the control system to alert the operator(s) that the brakes have engaged.

I. Signage

1. Provide an engraved lamicoid placard at each control panel location.
2. Placard shall include the following information:
    a. Name, address, and phone number of stage rigging contractor.
    b. Cautionary notice:

CAUTION
HEAVY LOADS OVERHEAD.
DO NOT OPERATE STAGE RIGGING SYSTEM
WITHOUT PROPER TRAINING.

    c. Notice regarding the necessity of periodic inspections.

J. All components shall be listed by and carry labels from a Nationally Recognized Testing Laboratory.

K. Install as indicated in the Drawings.

L. Quantities as per schedule.

2.35 ADJUSTABLE TORMENTOR PANELS.

A. Panels shall be constructed as shown in the drawings.

B. Panels shall be hung from tracks as shown in the Drawings and Schedules. Provide a stainless steel wheel carrier at each end of the panel. Each carrier shall be of a sufficient capacity to support the full weight of the panel. Length of tracks as shown in the Drawings and Schedules.

C. The Panel shall be fully framed and cross-braced using standard steel shapes and forms and shall be appropriately braced and reinforced to withstand regular usage.

D. Provide a spring loaded master carrier at the offstage side of each panel. Provide and install tow ropes for each end of each panel for floor operation of the spring brake. Tow ropes shall be 3/8-inch braided cotton rope with 2-inch diameter wood balls on the operating end, 4-feet above stage level. Ropes and handles shall be black.

E. Panel shall be covered on front with 3/16-inch A/C plywood, painted flat black. A fabric covering shall be stretched around the panel.

1. Fabric: 100% Wool Serge, black. Refer to paragraph 2.37-A-11.
2. Refer to paragraph 2.37-B-9 for construction requirements.
3. Provide hooks on inside of rear face for stretching of bungee cord tight on sides and top.
4. Provide hook and eye type fasteners on the bottom front face for attachment of the fabric panel.

G. Quantities per Schedules.

H. Install as shown in Drawings.

2.36 ACOUSTIC PANELS.

A. Panels shall be constructed as shown in the drawings.

B. Panels shall be hung from tracks as shown in the Drawings and Schedules. Provide a stainless-steel wheel carrier at each end and middle of the panel. Each carrier shall be of sufficient capacity to support the full weight of the panel. Length of tracks as shown in the Drawings and Schedules.

C. The Panel shall be fully framed and cross-braced using standard steel shapes and forms and shall be appropriately braced and reinforced to withstand regular usage.

D. Panel shall be covered on front with an acoustic fabric as noted in Architectural Drawings and Specifications. Fabric covering shall be stretched around the panel.

E. Rear of Panel shall be covered with ~~a 1/8-inch thick tempered hardboard~~ **perforated metal panel**. **Panel shall be minimum 20-gauge carbon steel with round perforations. Perforations shall be 1/4-inch on 5/16-inch staggered centers for an open area of not less than 50%.** Paint exposed surfaces black. **Provide plastic edge banding at all panel edges to reduce wear on acoustic fabric.**

F. Panel shall be filled with **2-inch thick fiberglass panels with a density of 6 to 7 pounds per cubic foot** ~~acoustic absorption material as selected by Acoustics Consultant~~. **Refer to Section 098413 – Sound Absorbing and Diffusing Wall Panels.**

G. Quantities per Schedules.

H. Install as shown in Drawings.

2.37 CURTAINS

A. Fabrics

1. All fabrics not inherently flameproof shall be fully mill flameproofed by the immersion process to meet or exceed the minimum requirements set forth by NFPA "Small Scale 701." The Contractor shall submit certificates so stating.
2. All fabrics shall be produced from one (1) dye lot per color. Color quality shall be consistent throughout, with no visible streaking, striping, or spotting.
3. All curtain color selections shall be submitted to the Theatre Consultant following selection by Architect. Final color approval by the Theatre Consultant is required prior to ordering fabric.
4. Inherently Flame-Retardant Main Curtain. 100 percent carded Inherently Flame Retardant velour, 54 inches wide, weighing 25 ounces per linear yard. "Prestige" as manufactured by KM Fabrics, Inc., Greenville, South Carolina, or approved equal by J. L. DeBall Fabrics or J. B. Martin Fabrics. Color: custom dyed to color selected by Architect.

    a. 45 backing ends per inch
    b. 51 pile ends per inch
    c. 48 picks per inch
    d. 1148 pile tufts per square inch
    e. Pile height: approximately .120 inch

5. Inherently Flame-Retardant Masking Curtains: 100 percent carded Inherently Flame Retardant velour, 54 inches wide, weighing 25 ounces per linear yard. "Charisma" as manufactured by KM Fabrics, Inc., Greenville, South Carolina, or approved equal by J. L. DeBall Fabrics or J. B. Martin Fabrics. Color: as shown on the Drawings.

    a. 48 backing ends per inch
    b. 51 pile ends per inch
    c. 46 picks per inch
    d. 1173 pile tufts per square inch
    e. Pile height: approximately .120 inch

6. Lining. IFR blackout lining fabric, Rose Brand “Avora Lining Plus” or approved equal.
7. Cyclorama. Front/rear projection screen. Gerriets "Opera creamy white" or Rosco "Twin White".

8. Scrim. 100percent cotton, sharkstooth weave. Gerriets “Falstaff,” Dazian “Sharkstooth Scrim – 3 thread, 35-feet wide,” or approved equal. Flameproofed. Color per schedule.
9. Heat resistant border. 100 percent glass yarn, coated both sides with a fiber-containing coating. Non-asbestos. Weight: 32 ounces per square yard. Continuous service temperature: 1100 degrees Fahrenheit . Color: black. Newtex Zetex 800 or Canvas Specialty Co. CSC-G2P or W. E. Palmer Co. "Heatstop".
10. Webbing
    a. Natural Jute. 3-1/2 inches tall in a 72 yard long roll.
    b. Heavy Weight Polypropylene. 3 inches tall, 1.7 mm thick. Rosebrand “Poly Pro Webbing” or equal. Color: Black.
11. Wool Serge. 100 percent wool serge, 59 inches wide, weighing 800 grams per square meter. Inherently flame-retardant . “WoolSerge 1000” as manufactured by Gerriets International, Ewing, New Jersey or approved equal.

B. Fabrication

1. General
    a. Unless otherwise noted, all pile fabrics shall have pile running up.
    b. All seams shall be vertical, unless otherwise specifically indicated. All fabric widths shall run full height, with no vertical piecing. All hems shall be sewn for the complete length of the hem.
    c. Thread shall match face fabric in color and material.
    d. The center of every curtain shall be indicated by a 1/2 inch wide fabric strip sewn to the back of the webbing. In addition, the center grommet of each border, backdrop, cyclorama and scrim shall be provided with a tie line in a color that is obviously different than the rest of the tielines.
    e. All grommets shall be black in finish.
    f. Every curtain shall contain permanent labels sewn to all off-stage ends of each curtain. Labels shall be located at the top webbing for all curtains. For any curtain taller than 10-feet, labels shall also be provided at 48 inches above the bottom hem. Stitches shall not penetrate the front face fabric of the curtain. Labels shall indicate fabric, color, finished size, and method and date of flame-retardant treatment, if applicable.
    g. Immediately below every curtain’s lowest label shall be sewn, on one edge, one (1) 4-inch wide x 18-inch long swatch of cloth provided from the same bolt(s) and having undergone the same flame-retardant treatment as the curtain itself. The swatch shall be sewn to the curtain along the length of the swatch. Each swatch will carry the following label:

        “This swatch is a flame test sample for curtain XXX.
        It is taken from the same fabric bolt(s) and has received identical flame treatment on date XXX”

        Contractor shall complete items shown as XXX above.
    h. Sizes and quantities per Drawings.

2. Main curtain.

a. Fabric pile shall run down.
b. Top hem shall be single turned and reinforced with continuous 3-1/2 inch webbing. Fullness shall be sewn into the curtain by means of box pleats 12 inch O.C. Two (2) No. 3 brass grommets shall be provided at each top corner of each finished panel and one (1) grommet shall be provided at the center of each box pleat along the top hem. One low-profile, heavy duty self-closing snap hook installed in each grommet for attachment to track.
c. Bottom hem shall be six (6) inch double turned and contain a continuous No. 6 plated jack chain held in a separate muslin pocket four (4) inches above bottom of curtain and tacked at each vertical seam to prevent bunching. A dust ruffle of the face fabric shall be sewn at the back of the bottom hem and shall be exposed two (2) inches below the bottom hem. The dust ruffle shall be a single turn of face fabric on both sides, for the full height of the dust ruffle. The dust ruffle shall be inside of the vertical hems. The dust ruffle shall be equal to the width of the curtain panel and shall not turn back at the vertical hems.
d. All vertical hems shall be faced back with 1/2 width of face fabric. The hem shall be continuously sewn to the selvage edge of the previous panel seam.
e. Lining shall be applied with the same fullness as the face fabric. The lining shall be sewn to the face fabric only along the top and bottom hems. An inverted tuck of six (6) inches at the bottom shall be sewn into the lining to allow for shrinkage difference between face fabric and lining. The side hems of the lining shall be two (2) inches single turned and shall be attached to the inside edge of the face fabric vertical hems by means of continuous twill tape laced through tape loops attached to both curtains 18 inches O.C. and evenly staggered between the two (2) panels.
f. A pocket of black canvas and of sufficient size to accommodate the track floor block comfortably shall be suspended from the pipe batten on two (2) chains at the offstage end curtain track at the operating end of the track. The bottom of this pocket shall hang 12 inches off the finished floor of the stage when the curtain is in the lowered position. The top of the pocket shall contain a velcro closure.
g. Main curtain height shall be determined by field measurement, to ensure that top of curtain is not visible from any seat in auditorium. Finished height shall be this field measurement or dimension stated in curtain schedule, whichever is greater.

3. Legs and backdrops

a. Top hem shall be single turned and reinforced with continuous 3-1/2 inch webbing. One No. 3 brass grommet shall be provided at each top corner of each finished panel and six (6) inches O.C. along the top hem. One tie line shall be provided for each grommet. Tie lines shall be braided cotton, black in color, and 36 inches long.
b. Bottom hem shall be six (6) inches double turned and contain a continuous No. 6 plated jack chain held in a separate muslin pocket four (4) inches above bottom of curtain and tacked at each vertical seam to prevent bunching.
c. Vertical hems shall be four (4) inches double turned.

4. Travelers
    a. Top hem shall be single turned and reinforced with continuous 3-1/2 inch webbing. Fullness shall be sewn into the curtain by means of box pleats 12 inches O.C. Two (2) No. 3 brass grommets shall be provided at each top corner of each finished panel and one (1) grommet shall be provided at the center of each box pleat along the top hem. One low-profile, heavy duty self-closing snap hook installed in each grommet for attachment to track.
    b. Bottom hem shall be six (6) inches double turned and contain a continuous No. 6 plated jack chain held in a separate muslin pocket four (4) inches above bottom of curtain and tacked at each vertical seam to prevent bunching.
    c. All vertical hems shall be faced back with 1/2 width of face fabric. The hem shall be continuously sewn to the selvage edge of the previous panel seam.
    d. A pocket of black canvas and of sufficient size to accommodate the track floor block comfortably shall be suspended from the pipe batten on two (2) chains at the offstage end curtain track at the operating end of the track. The bottom of this pocket shall hang 12 inches off the finished floor of the stage when the curtain is in the lowered position. The top of the pocket shall contain a velcro closure.

5. Borders.
    a. Top hem shall be single turned and reinforced with continuous 3-1/2 inch webbing. One No. 3 brass grommet shall be provided at each top corner of each finished panel and 12 inches O.C. along the top hem. One tie line shall be provided for each grommet. Tie lines shall be braided cotton, black in color, and 36 inches long.
    b. Bottom hem shall be eight (8) inches double turned and contain a separate non-flameproof eight (8) ounce cotton duck pipe pocket that shall hold the pipe within the bottom of the curtain. A five (5) inch tall reinforced buttonhole opening shall be provided at the centerline of the curtain along the back of the bottom hem and pipe pocket to facilitate the coupling of pipe sections. At the edges of the opening the face fabric and pipe pocket shall be whip stitched together. The buttonhole opening shall start no less than two (2) inches above the bottom of the curtain. Provide 3/4 inch I.D. schedule 40 galvanized steel pipe in ten (10) foot sections with internal sleeve couplings; lengths as necessary to run full width of curtain.
    c. Vertical hems shall be four (4) inches double turned.

6. Cyclorama
    a. All seams shall be vertical and shall be ultrasonically welded so as to be invisible in normal operation. Top, bottom, and side finishes shall be 12 centimeter reinforced vinyl webbing folded around and ultrasonically welded to the main fabric, resulting in a 6 centimeter border. One No. 3 plastic grommet shall be provided at each top corner of each finished panel and 12 inches O.C. along the top and side hems.

b. Bottom finish shall include two (2) 6 inch pipe pockets electrosonically welded to the back that shall hold the pipe two (2) inches above the bottom of the curtain. The pockets shall meet at the centerline of the curtain with a one (1) inch gap between the pocket ends. Provide 3/4 inch I.D. schedule 40 galvanized steel pipe in ten (10) foot sections with internal sleeve couplings; lengths as necessary to run full width of curtain.
c. One tie line shall be provided for each grommet, top and sides. Tie lines shall be braided cotton or polyester, white in color, and 36 inches long.

7. Scrims

a. Top hem shall be single turned and reinforced with continuous 3-1/2 inch heavy jute webbing. One No. 3 brass grommet shall be provided at each top corner of each finished panel and 12 inches O.C. along the top hem.
b. Bottom hem shall be six (6) inches double turned and contain a separate non-flameproof eight (8) ounce cotton duck pipe pocket that shall hold the pipe two (2) inches above the bottom of the curtain. Color of cotton duck for pipe pocket shall match the color of the scrim. A five (5) inch tall reinforced buttonhole opening shall be provided at the centerline of the curtain along the back of the bottom hem and pipe pocket to facilitate the coupling of pipe sections. At the edges of the opening the face fabric and pipe pocket shall be whip stitched together. The buttonhole opening shall start no less than two (2) inches above the bottom of the curtain. Provide 3/4 inch I.D. schedule 40 black steel pipe in ten (10) foot sections with internal sleeve couplings; lengths as necessary to run full width of curtain.
c. Vertical hems shall be four (4) inches double turned and reinforced with 3-1/2 inch jute webbing. One no. 2 brass grommet shall be provided six (6) inches above the bottom pipe and two (2) feet O.C. along both side hems.
d. One tie line shall be provided for each grommet, top and sides. Tie lines shall be braided cotton, color to match the color of the scrim fabric, and 36 inches long.

8. Heat Resistant Borders.

a. Top hem shall be double turned. One No. 2 brass grommet shall be provided at each top corner of each finished panel and 12 inches O.C. along the top hem.
b. Bottom and side hems shall be double turned.
c. One tie line shall be provided for each grommet. Tie lines shall be braided cotton, black in color, and 36 inches long.
d. Panel sizes and quantities as shown in the Drawings. Deliver to owner.

9. Tormentor Panels.

a. Top hem and side hems shall be single turned and reinforced with continuous 3-1/2 inch heavy jute webbing. One No. 3 brass grommet shall be provided at each corner of each finished panel and 6 inches O.C. along the top and side hems. A continuous “bungee” type elastic cord shall be threaded through the grommets for securing the panel to the hard frame. Cord shall be sewn into bottom of side hems with sufficient tautness to

allow secure installation around the hard frame. Cord shall be black in color.

b. Bottom hem shall be single turned and reinforced with continuous 3-1/2 inch heavy jute webbing. Sew hook and eye type fastener to the webbing for attachment to the mating fastener on the face of the hard frame.

C. Fabricate and install as shown in the Drawings and Schedules.

D. Provide and deliver to Owner one (1) dustproof canvas storage bag for each and every individual curtain except for the main curtain. Label each bag, in painted letters not less than 1-1/2 inches high, with the color, fabric, type, and size of the curtain contained.

2.38 CURTAIN HAMPERS

A. Basket fabric shall be heavy duty canvas sewn and riveted to frame. Canvas handles shall be provided at the two (2) ends.

B. Basket frames shall be electro-welded high tensile spring steel.

C. Truck frames shall be hardwood, with four (4) hard rubber heavy duty swivel casters in the four corners.

D. Hinged tops shall be resin laminated plywood with steel corner plates and chain-tethered snaps.

E. "Dandux 40-720" by C. R. Daniels, Inc., Ellicott City, Maryland, or approved equal.

F. Provide a sufficient quantity of 20-bushel hampers for the storage of all stage curtains with the exception of the Main Curtain.

G. Stencil with paint on all hamper lids, "STAGE CURTAINS ONLY."

H. Deliver to Owner.

2.39 PERSONNEL LIFTS

A. Lift shall meet ANSI A92.3 requirements for aerial work platforms.

B. Personnel lift shall be single-person, manually propelled, and vertically powered by a 120V AC electric motor and hydraulic pump.

C. Normal raise and lower controls shall be located at the platform. Emergency lowering valve shall be provided at ground level. Lift shall include a 25 foot power cord and cleats for storing cord when not in use. The platform shall have a 120V, 20amp power socket fed by a cord on a spring-powered reel.

D. The platform shall be 27 inches by 26 inches and shall include safety rails and toeboard of welded aluminum. The platform shall be raised on a single telescoping aluminum mast assembly. The base structure shall accommodate socket-mounted outriggers, and the lift shall be equipped with an outrigger interlock system that prevents operation without the outriggers correctly installed. The base structure shall include minimum five (5) inch swivel casters and minimum eight (8) inch rear wheels, both of non-marking tread material.

E. The lift, when collapsed, shall be capable of rolling through a 36 inch x 84 inch door opening.

F. Platform capacity shall be 350 pounds, and maximum extended height, measured from floor to platform floor, shall be 29 ft 6 inches.

G. Acceptable products:

1. AWP-30S by Genie Industries, Redmond, Washington, USA
2. 30-AM by JLG Industries, McConnellsburg, Pennsylvania, USA
3. UL-32 by Snorkel, St. Joseph, Missouri, USA

H. Quantity: 1.

I. Deliver to Stage.

2.40 STEP LADDERS

A. Step ladders shall meet ANSI A14.5 and OSHA requirements for stepladders.

B. Step ladders shall be constructed with non-conductive fiberglass rails and serrated surface aluminum steps.

C. Acceptable products:

1.	6-foot ladders:	Louisville Ladder FG 306 Werner 7406
2.	8-foot ladders:	Louisville Ladder FG 308 Werner 7408
3.	12-foot ladders:	Louisville Ladder FG 312 Werner 7412

D. Quantities: 6-foot ladders: 2
8-foot ladders: 4
12-foot ladders: 2

E. Deliver to Stage.

2.41 EXTENSION LADDERS

A. Extension ladders shall meet ANSI A14.5 and OSHA requirements for stepladders.

B. Extension ladders shall be constructed with non-conductive fiberglass rails and serrated surface aluminum steps.

C. Steps shall be flattened at stepping surface.

D. Ladders shall extend between 14 feet (full overlap) and 21 feet (maximum working length).

E. Acceptable products: Louisville Ladder CFGD-1224
Werner D7124-2

F. Quantity: 2

G. Deliver to Stage.

PART 3 - EXECUTION

3.1 FABRICATION

A. This Contractor is responsible for becoming familiar with and verifying all pertinent dimensions and conditions, both in the Drawings and in the field, before proceeding with any work.

B. Coordinate the design, planning, and scheduling of the work of this Section with the work of all other trades. Notify the Architect of any difficulties in coordinating work with other contractors. Failure to do so shall constitute acceptance of construction as suitable in all ways to receive the work of this Section.

C. All electrical components shall be fully assembled and internally wired, with terminals of the proper rating and clearly labeled, provided for external feeder and control wiring.

D. All metal fabricated items shall be given at least one (1) coat of primer and one (1) coat of finish paint. Color: flat black.

E. Where not specifically called out in the Drawings and Specifications, tracks and fittings shall be painted or anodized black.

F. Verify curtain height dimensions after track installation is complete, prior to fabricating curtains.

G. All curtain color selections shall be submitted to the Theatre Consultant following selection by Architect. Final color approval by the Theatre Consultant is required prior to ordering fabric.

H. All equipment shall be fabricated and installed to facilitate maintenance and future replacement.

3.2 INSTALLATION

A. Contractor shall employ only experienced stage riggers for the installation of work of this Section. A competent supervisor shall be maintained on this Project during the entire installation. A change of supervisor shall not be acceptable unless by written authorization of the Architect.

B. Coordinate installation with all other trades doing adjoining work.

C. Examine all existing conditions at the jobsite prior to beginning installation. Report to Architect any conditions that vary from the Drawings that could prevent the correct installation of the specified system, including, but not limited to, out-of-plumb, out-of-square, out-of-true and out-of-level conditions. Failure to do so shall constitute acceptance of construction as suitable in all ways to receive the work of this Section.

D. Blow all accumulated dust from gridiron, using compressed air, prior to installation of new system.

E. Provide protection for all stage flooring, regardless of whether flooring has been stained or sealed. Flooring shall be protected from both structural damage and cosmetic damage.

F. Provide and install all supplementary structural support as required for the installation and safe operation of equipment and materials supplied under this Section.

G. Do all required cutting, drilling, tapping, and welding necessary for proper installation. Cut no structural members unless specifically shown in the Drawings or indicated in the Contractor's shop drawings, or unless written approval is obtained from the Architect.

H. Install all items in conformity with standard trade practices and manufacturers' recommendations. Position all items accurately and true to plumb line and level. Maintain maximum headroom and clearances at all locations.

I. Ropes and cables shall enter rigging blocks and drums at a fleet angle not exceeding ±1.5 degrees.

J. All turnbuckles and screw-pin shackles shall be seized in place with either wire or standard (50-lb capacity) black nylon (UV stabilized) cable ties after final adjustment. Loose ends of seizing material shall be trimmed to be no longer than one-quarter (1/4) inch in length.

K. Number all line sets at the Loading Gallery, at the top of the kick plate, and at the gridiron, at the top flange of the centerline loft well, so as to facilitate the identification of sets at these locations. Use white enamel paint and stencils for all numbering. Numerals shall be at least one (1) inch high.

L. Install all electrical plugging strips associated with rigging sets, with the exception of multi-cable physical and electrical connections, and advise and assist as required in the installation of other electrical equipment related to the work of this Section.

M. Install all traveler tracks with three (3) foot overlap at center.

N. Install all curtain tracks with the turnbuckles at the mid-point of travel, to allow future adjustment in either direction. Install all curtains on tracks at the mid-point of the carrier trim chain, to allow future adjustment in either direction.

O. No curtains shall be installed until construction and painting are complete and the building has been cleaned. Any curtains delivered to the job site prior to their installation shall be stored in a clean area in dustproof bags.

P. After first rigging lineset has been fully installed, contractor shall report to Theatre Consultant, recording the top and bottom batten trim heights, before proceeding with the remainder of the linesets.

Q. Manual Lineset Operation – all linesets shall run smoothly with no perceptible binding for the entire length of travel. Operation of the lineset shall not require an unreasonable amount of force to initiate movement. Reasonable force shall be defined as not more than 30 pounds of vertical force to initiate movement, when the arbor is balanced and at the midpoint of the travel distance.

END OF SECTION 11 61 33

SECTION 11 61 34 – THEATRICAL LUMINAIRES AND ACCESSORIES

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 SCOPE

All materials, components, and services necessary to provide a complete system indicated in this Section, as specified herein and shown on related Drawings, including:

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division1 Specification Sections, apply to this Section.

B. Preparation and submission of complete shop drawings and samples for review prior to fabrication.

C. Verification of dimensions and conditions at the job site.

D. Shipment of equipment to the job site and the secured storage of all non-fixed equipment.

E. Installation and completion in accordance with these Specifications, related Drawings, the Equipment Manufacturer's recommendations, established trade criteria, and all applicable code requirements.

F. The inspection, demonstration, and necessary adjustment of the completed installation by the Manufacturer's engineering personnel.

G. Preparation and submission of complete record documents and operational and maintenance data and certificates.

1.3 WORK INCLUDED

A. Theatrical Luminaires.

B. Theatrical Followspots**.**

C. Accessories.

The above is for reference only and is not intended to define the limits of the work for a complete installation.

1.4 RELATED WORK IN OTHER SECTIONS

A. General requirements for all electrical work.

B. Electrical service

C. General lighting system.

D. Theatrical rigging system.

E. Theatrical sound and communications system.

F. Theatre Stage Lighting System.

G. Alternates

1.5 QUALIFICATIONS

A. All equipment shall be provided by qualified Stage Lighting Dealers. All equipment provided under this Section shall be provided by a single Dealer.

1. Each fixture type described in this Section shall be by a single manufacturer.

B. Equipment Manufacturers shall have at least ten (10) years experience in the fabrication of similar equipment.

C. If requested, the Manufacturers shall submit a representative list of installations during the above period.

D. Subject to the above requirements, the equipment indicated herein shall be by one of the following manufacturers:

1. Altman Lighting, Yonkers, NY
2. Chroma-Q – distributed by A.C. Lighting Inc., Toronto, Ontario, Canada
3. City Theatrical, Carlstadt, New Jersey
4. Color Kinetics, A Signify Company, Burlington, MA
5. Electronic Theatre Controls, Middleton, Wisconsin
6. LEX Products, Stamford, Connecticut
7. Lycian, Sugar Loaf, New York
8. Robert Juliat USA, Wallingford, Connecticut.
9. Strand Lighting, a Signify Company, Dallas, Texas
10. Strong Lighting, Omaha, Nebraska
11. TMB, New York, New York
12. Union Connector, West Babylon, New York
13. Vari-Lite, A Signify Company, Dallas, Texas

E. Other manufacturers may be considered with the prior review of the Theatre Consultant. Manufacturers seeking review must contact the Theatre Consultant not later than fourteen (14) days prior to bid date.

F. The luminaire package shall be provided by a qualified theatrical dealer, who shall have at least five (5) years experience in the sales and installation of similar systems and who shall be factory certified to provide warranty service for all of the equipment in this Section. Dealer shall be a Business member, accredited as a Dealer/Retailer, of the entertainment service organization ESTA.

G. Dealer shall be responsible for the integration, operation, and performance of all elements of the system described in this Section. Dealer shall provide all warranty work and equipment upgrades as called for in this Section. The dealer shall be available for product service onsite within (24) hours of a call for service.

H. Subject to the above requirements, the equipment indicated herein shall be provided by one of the following dealers:

1. Barbizon Lighting, Chicago, Illinois 773-276-8500
2. Intelligent Lighting Creations, Arlington Heights, Illinois 847-933-9792
3. Grand Stage, Chicago, Illinois 312-332-5611
4. Protolight, Des Plaines, Illinois 847-869-5000

Other dealers may be considered with the prior review of the Theatre Consultant. Dealers seeking review must contact the Theatre Consultant not later than fourteen (14) days prior to bid date.

1.6 SUBMITTALS

A. With bid.

1. Identification of qualified Theatrical Dealer providing package.
2. All deviations and exceptions from specification must be revealed with bid. Deviations and exceptions from specification submitted after this time shall not be accepted.

B. Submittals

1. Within thirty (30) days of receipt of order, the Manufacturer shall submit a Bill of Materials showing quantities of each component and sub-assembly.
2. Shop drawings. Within sixty (60) days of receipt of order, the Manufacturer shall submit drawings and equipment data sheets to the Architect for distribution to the Theatre Consultant for review and action prior to fabrication:

a. Dimensions, components, and finishes of all equipment and accessories.
b. All system assemblies and major sub-assemblies, cabinets, and enclosures, including notation of type and manufacture of switches, pilot lights, locks, hardware, and electrical and electronic connectors.
c. Block schematics of system internal wiring and system element interconnection.
e. Indication by boxed caption of any and all variations from contract Drawings and Specifications, whether or not these variations have been formally or informally accepted by the Theatre Consultant.

C. Samples. Within sixty (60) days of receipt of order, the Manufacturer shall submit to the Architect for review prior to fabrication samples of any equipment component requested by the Theatre Consultant. Samples shall not be included in quantities of equipment specified but shall be returned.

D. Final submittal. Within thirty (30) days of final tests, and as a condition for final review, the Manufacturer shall submit to the Architect:

1. Three (3) sets to the Architect and one (1) set on electronic media to the Theatre Consultant. Format of sets shall be compliant with Division One of this Specification.

a. Receipt signed by owner or owner's designee for Bill of Materials showing delivered quantities of each component and sub-assembly
b. "As built and approved" drawings and equipment data sheets showing all systems and components as installed, including all field modifications.
b. Operating and maintenance manuals.
c. Parts lists.
d. Training videos as noted below.
e. Certificates of warranty, as set forth below.

1.7 TESTING AND INSTRUCTION

A. Upon completion of all installation work, the Contractor and Dealer shall certify in writing to the Architect that the work is complete and ready for final observation. Final observation shall be scheduled by the Owner, the Architect, and the Theatre Consultant within fourteen (14) days following the Contractor's notice of completion.

1. Observation shall include demonstration by the Stage Lighting Dealer that all fixtures of each type of LED fixture described in this Section meets the color consistency requirements outlined within.

a. Demonstration shall be accomplished through the illumination of at least 50% of the specified quantities in the space(s) through the full range of output colors. Fixtures shall be aimed at the cyclorama.

B. As a condition of final completion, the Dealer's technician shall instruct the Owner's staff or representatives, under the observation of the Architect and Theatre Consultant, in the operation and maintenance of the equipment.

1. Initial Instruction: This instruction session shall be scheduled for a minimum duration of six (6) hours. While it may be possible to schedule this instruction session to coincide with the system checkout, such coincidence shall not be assumed. Instruction shall be scheduled by the Owner, the Architect, and the Theatre Consultant to occur within fourteen (14) days following the Contractor's written notice.

1.8 GENERAL REQUIREMENTS

A. General Conditions of the project contract, work schedules, and site regulations apply to this work. Refer to Division 1.

B. This work shall comply with local codes and applicable standards as established by NEC and approved testing agencies, and all components shall carry pertinent labels by approved testing agencies.

C. The Contractor shall provide full insurance against loss or damage during shipment, storage, installation, and testing. Certification of such coverage shall be furnished to the Architect within thirty (30) days of award of contract.

D. Warranty

1. The Dealer shall unconditionally warrant all equipment and systems provided under this Section to be free from defects in materials and workmanship for a period of at least twelve (12) months from the date of final acceptance of all work of this Section. Lamps and normal wear and tear are exempted.
2. Appropriate additional equipment to replace equipment removed for service shall be provided at the job site at no expense to the Owner to replace any and all equipment which must be removed for service.
3. All warranty service shall be performed by technicians factory certified for the installed equipment.

E. State-of-the-art assurance: All products specified shall be the Manufacturer's most recent iteration and most recent product. No products shall be accepted if they have been discontinued or superseded at the time of shipment. Should the Manufacturer develop products above and beyond the specification of the listed product, the Dealer shall make the newly developed product available to the project at no additional cost. The Dealer shall notify the Architect and the Theatre Consultant of any developments to the specified products, and shall note any change in the requirements of building infrastructure(s) to support the developments. The Architect and Theatre Consultant shall then determine whether upgraded products shall be accepted.

PART 2 - PRODUCTS

2.1 GENERAL

A. All components shall be new, in good condition, and under warranty.

B. All components shall bear the following labels:

1. Certification from a Nationally Recognized Testing Laboratory such as UL, ETL or CSA suitable to the applicable standard for that equipment.
2. Identification of the manufacturer, model number, and serial number.
3. All such labels shall be permanently attached in a conspicuous location.

C. Control signal protocol and connector types shall comply with the following standards:

1. ANSI E1.11 – 2008 (R2013) - Entertainment Technology USITT DMX-512-A Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories.
2. ANSI E1.20 – 2010 Entertainment Technology – RDM Remote Device Management over DMX512 Networks.

3. ANSI E1.27-1 - 2006 (R2011)Entertainment Technology-Standard for Portable Control Cables for Use with USITT DMX512/1990 and E1.11 (DMX512-A) Products
4. ANSI E1.31 - 2009 - Entertainment Technology – Lightweight streaming protocol for transport of DMX512 using ACN

D. All control, signal, and video connectors shall be of substantial construction and shall be of the locking or latching type. All plate-mounted connectors shall be bolted to faceplates - rivets shall not be acceptable.

2.2 STAGE LIGHTING CONNECTORS

A. Two Pin and Ground

1. 20-Ampere devices.
    a. Connectors shall be 20-ampere slip pin, 2 wire plus ground, with integral strain relief.
    b. Unless otherwise noted provide transparent plastic covers
    c. The following manufacturer’s devices shall be acceptable:
        i. Union Connector
        ii. Marinco Bates® Plug
        iii. LEX Products

B. TWIST-LOCK

1. 20-Ampere devices
    a. Connectors shall be 20 ampere, 2 wire plus ground, locking, with nylon bodies and casings, and integral cable clamp. Configuration shall be NEMA L5-20.
    b. The following manufacturer’s devices shall be acceptable:
        i. Hubbell
        ii. Leviton
2. 20-Ampere 208V devices
    a. Connectors shall be 20 ampere, 2 wire plus ground, locking, with nylon bodies and casings, and integral cable clamp. Configuration shall be NEMA L6-20.
    b. The following manufacturer’s devices shall be acceptable:
        i. Hubbell
        ii. Leviton

C. PowerCon devices

1. A locking 3 conductor equipment AC connector with contacts for line, neutral and pre-mating ground contact.
2. Power In Devices shall be Blue
3. Power-Out Devices shall be Grey.

4. The following manufacturer's devices shall be acceptable:
    a. Neutrik "powerCON"
    b. Approved Equals

D. 20-ampere 6-circuit multi-pin
1. A threaded coupling 19-pin cylindrical connector for theatrical lighting applications
2. All multi-conductor connectors shall be wired in accordance with the recommended practice RP-1 as published by the U. S. Institute for Theatre Technology.
3. The following manufacturer's devices shall be acceptable:
    a. Veam
    b. Socapex
    c. LEX Products
4. All products shall be compatible with Socapex 419 Series connectors.

E. SINGLE POLE LOCKING CONNECTORS
1. Connectors shall be 400 ampere, single wire, locking with Thermoplastic Elastomer bodies and casings and two nylon set screws.
2. Connectors shall accept wire sizes from #4 to 2∅.
3. Acceptable Products:
    a. Hubbell Single Pole Devices
    b. Crouse-Hinds Cam-Lok
    c. ECT Leviton Helox
4. Compatibility – All devices shall be compatible with Crouse-Hind Cam-Lok devices.

F. Quantities per Drawings & Schedules.

2.3 FOLLOW SPOTS

A. Specifications
1. Source must have an approximate color temperature of 5600 degrees K., and an average rated life of not less than 250 hours.
2. Optical train: Fixture shall provide a zoom lens system. Criteria noted below are based on a throw distance of 150 feet. System shall produce a beam field diameter that is no larger than 2-feet with use of iris fully closed when at narrow focus. System shall produce a beam field diameter of at least 15-feet with the iris open full and at flood focus.
3. Optical performance: Fixture shall produce 200 foot-candles with an 8-foot diameter beam at a distance of 150 feet.
4. Beam control: iris, horizontal shutters, and douser.
5. Color boomerang: six colors with automatic release. Boomerang must be able to retain two color frames in use simultaneously.

6. Electrical: Fixture shall draw no more than 50 Amps at 208 volts AC. Connector shall be 2 wire plus ground and coordinated with the followspot room receptacles, locking, with nylon body and integral cable clamp.
7. Stand – Fixture shall be provided with a stand, complete with locking casters. Stand shall provide smooth operation of fixture with pan and tilt.

B. Acceptable units

1. Aramis, as manufactured by Robert Juliat USA, Wallingford, Connecticut.
2. Cyrano, as manufactured by Robert Juliat USA, Wallingford, Connecticut.
3. M-2 Long Throw 2500, as manufactured by Lycian Stage Lighting, Sugar Loaf, New York.
4. Super Trouper II, as manufactured by Syncrolite, Dallas, Texas.
5. Approved Equal.

C. Quantities per Schedule.

D. Install in Follow Spot Room.

E. As part of the work of this Section, experienced theatrical technicians shall provide the following assembly and alignment services at the job site prior to delivery to Owner:

1. Uncrating from factory containers and disposal of containers.
2. Full assembly.
3. Lamp alignment for maximum performance.

2.4 TUNGSTEN LUMINAIRES

A. General

1. Wiring: Three (3) 36-inch type SF-2 leads in fiberglass sleeve.
2. Connector shall be installed prior to shipment to job site.
3. Front Accessory Slot: Two separate slots at the front of the lens assembly. Fixture shall provide positive retention of all accessories mounted in these slots.
4. Color frame: free of burrs and sharp edges; painted or anodized flat black.
5. Lamp: provide (1) per fixture, plus additional lamps. Lamp wattage, type, and total quantity shown in Schedule.
6. As part of the work of this Section, experienced theatrical technicians shall provide the following assembly and alignment services at the job site prior to delivery to Owner:

    a. Uncrating from factory containers and disposal of containers.
    b. Full assembly, including installation of C-clamps and lamps.
    c. Lamp alignment to cosine (hot center) distribution.

B Ellipsoidal Reflector Spotlights

1. Specifications

    a. Wattage: 575, 600, 750 watt.
    b. Socket shall be mounted and shielded to withstand maximum lamp seal temperatures without substantial deterioration.

c. Reflector: Molded borosilicate, ellipsoidal, double flatted. Dichroic coatings to produce 95% minimum reflectance of visible light and 90% minimum transmission of infrared radiance.
d. Shutters: Four (4) stainless steel, operating in three (3) different planes. Shutter gate shall be rotating and locking, permitting flexible shutter cuts.
e. Pattern slot: accepts standard pattern (template) holder.
f. Iris: in addition to shutters, when specified.
g. Lenses: Aspheric, with anti-reflective coating to reduce light loss. Lenses shall be reasonably clear, with no perceptible discoloration or clouding.
h. Lamp adjustment: Vertical, horizontal, and axial adjustment.
i. Connectors: All fixtures shall be provided with Two-Pin & Ground Connectors

2. Acceptable units (categorized by field angle)

a. ETC Source Four

C. PAR Spotlights

1. Specifications

a. Wattage: 575, 750 watt.
b. Socket shall be mounted and shielded to withstand maximum lamp seal temperatures without substantial deterioration.
c. Reflector: Integral die-cast aluminum, faceted.
d. Lenses: Removable, rotating lenses fitting into fixture without the use of tools. Lenses shall be reasonably clear, with no perceptible discoloration or clouding. Each fixture complete with (4) lenses: Wide Flood, Medium Flood, Narrow Spot, and Very Narrow Spot.

2. Acceptable units: ETC S4 PAR-EA

D. Quantity per schedule.

E. Deliver to Owner.

2.5 LED LUMINAIRES

A. General

1. The fixture shall be a color-mixing high-intensity LED illuminator with DMX control of intensity and color.
2. Power supply, cooling and electronics shall be integral to each unit.

B. Physical

1. The following shall be provided with each fixture:

a. 5-foot input power cord with twist-lock connector rated for the maximum input current of the fixture. Connector shall be installed prior to shipment to job site.
b. 5-foot pass-through power cord with connectors rated for the maximum input current of the fixture. Connectors shall be installed prior to shipment

to job site. Connector configuration shall be compatible with receptacles on fixture.
c. Color frame: free of burrs and sharp edges; painted or anodized flat black.
d. Steel yoke with two mounting positions allowing at least 300-degrees rotation of the fixture within the yoke
e. Positive lo cking, hand operated yoke clutch

2. The fixture shall have a durable black finish

C. Thermal

1. The fixture shall utilize advanced thermal management systems to maintain LED life to an average of 70% intensity through at least the first 20,000 hours of use

D. Electrical

1. The fixture shall be equipped with 100V to 240V 50/60 Hz internal power supply
2. The fixture shall support power in and thru operation via integral, modular panel-mount connectors. Connectors shall be fully rated for 20A at 120V.
3. Power supply outputs shall have self-resetting current limiting protection.
4. Maximum inrush shall not exceed the characteristics defined in NEMA-410-2015 Performance Testing for Lighting Controls and Switching Devices with Electronic Drivers and Discharge Ballasts.

E. LED Emitters

1. Manufacturer of LED emitters shall utilize an advanced production LED binning process to maintain color consistency. Color consistency of the emitters within each individual color shall be within 3 MacAdam ellipses or better through rated life of the emitter and the entire dimming range.
2. All LED fixtures (100% of each lot) shall undergo a minimum eight-hour burn-in test during manufacturing.

F. CALIBRATION

1. Fixture shall be calibrated at factory to achieve consistent color and intensity output.
   a. Calibration data shall be stored on the LED array as a permanent part of on-board operating system
   b. All arrays, including replacement arrays shall be calibrated to the same standard to ensure consistency

G. DIMMING

1. Fixture shall dim completely to 0% without observable flicker, pulsing or stepping. Fixture shall comply with IEEE 1789-2015 Recommended Practice for Modulating Current in High-Brightness LEDs for Mitigating Health Risks to Viewers

H. CONTROL AND USER INTERFACE

1. The fixture shall be ANSI E1.11 (DMX 512A) compatible via In and Thru 5-pin XLR connectors

2. The fixture shall be compatible with the ANSI E1.20 (Remote Device Management) standard
    a. All fixture functions shall be accessible via RDM protocol for modification from suitably equipped control console
3. The fixture shall be equipped with a user interface.
4. The fixture, at a minimum, shall provide direct, independent control of each individual primary color channel.

I. As part of the work of this Section, experienced theatrical technicians shall provide the following assembly and alignment services at the job site prior to delivery to Owner:
    a. Uncrating from factory containers and disposal of containers.
    b. Full assembly, including installation of C-clamps, safety cables and power supply cables.

J. LED ELLIPSOIDAL REFLECTOR SPOTLIGHTS
1. Specifications
    a. Shutters: Four (4) stainless steel, operating in three (3) different planes. Shutter gate shall be rotating and locking, permitting flexible shutter cuts.
    b. Pattern slot: accepts standard pattern (template) holder. Fixture shall also include a separate slot with sliding cover for motorized pattern devices or optional iris
    c. Iris: in addition to shutters, when specified.
    d. Lenses: Aspheric, with anti-reflective coating to reduce light loss. Lenses shall be reasonably clear, with no perceptible discoloration or clouding.
    e. Front Accessory Slot: Two separate slots at the front of the lens assembly. Fixture shall provide positive retention of all accessories mounted in these slots.
2. LED Emitters
    a. The fixture shall contain a minimum of four different LED colors in an array designed for broad spectrum colors, light tints and variable whites.
3. Acceptable units (categorized by field angle)
    a. ETC “Color Source Spot” with Enhanced Definition lens tubes
    b. Altman Lighting “PHX 250 RGBW”
    c. Chauvet “Ovation E910FC”

K LED PAR Spotlights
1. Specifications
    a. Optical: The fixture shall provide a native beam angle of not less than 17-degrees and not more than 20-degrees.
    b. Fixtures shall be provided with the following lenses, within a tolerance of +/- 2-degrees:
        i. **32** ~~21~~ degree round
        ii. **50** ~~27~~ degree round
        iii. **29** ~~21~~ degree by **58** ~~37~~ degree oblong

iv. **76** ~~68~~ degree round

c. Use of a barn door must result in uniform color, single-edged beam cutoff.
d. Front Accessory Slot: Two separate slots at the front of the lens assembly. Fixture shall provide positive retention of all accessories mounted in these slots.

2. LED Emitters

a. The fixture shall contain a minimum of four different LED colors in an array designed for broad spectrum colors, light tints and variable whites.

5. Acceptable Units:

a. ETC ColorSource Par
b. Chauvet ColoRado 2 Quad Zoom

L LED Linear Striplights

1. Specifications:

a. Mounting hardware: One (1) complete set of hanging trunions and one (1) complete set of floor trunions per unit.

2. Thermal

a. If required to meet the above requirements fixture shall be equipped with a cooling fan.

i. Fan control mode via a DMX channel shall be possible
ii. Fan control software shall permit the fixture to override DMX control setting to prevent heat damage to the fixture

3. LED Emitters

a. The fixture shall contain a minimum of four different LED colors in an array designed for broad spectrum colors, light tints and variable whites.

4. Acceptable units:

a. Chauvet “Ovation B2805FC”
b. Chroma Q “ColorForce II 72-inch w/Cyc Lens”
c. Vari-Lite ShowLine “SL Bar 660 RGBW 60 degree”

M. LED Single Cell Cyc Lighting

1. Specifications

a. The fixture shall be a DMX Controlled LED Cyclorama wash fixture with asymmetric distribution.
b. Front Accessory Slot: Two separate slots at the front of the lens assembly. Fixture shall provide positive retention of all accessories mounted in these slots.
c. Fixture shall be designed or equipped to be floor mounted or hung from an overhead pipe batten.

2. Fixture shall have color mixing capability with a minimum of 4 different colors of LED emitters (with 3 of the colors being Red, Green, and Blue).

3. Acceptable Units:

   a. Altman Lighting “SSCYC100-RGBA-B”
   b. ETC “ColorSource Cyc”
   c. Approved Equal

N. Quantities per Schedules

2.6 ELLIPSOIDAL REFLECTOR SPOTLIGHTS - SPARE LENS TUBES

A. Specifications

1. Lenses: Aspheric, with anti-reflective coating to reduce light loss. Lenses shall be reasonably clear, with no perceptible discoloration or clouding.
2. Lens tubes shall be interchangeable among all beam spreads, to fit same fixture body.
3. Provide complete spare lens tube assembly, to fully replace lens tube of ellipsoidal reflector spotlight.
4. Lens tubes shall be provided by the same manufacturer as the ellipsoidal spotlights provided.
5. All lenses shall be provided as enhanced definition tubes.
6. **All lenses shall be provided with color frame.**

B. Field angles:

1. 90 degree
2. 70 degree
3. 50 degree
4. 36 degree
5. 26 degree
6. 19 degree
7. 14 degree
8. 10 degree

C. Quantities per Schedule.

D. Deliver to Owner.

2.7 ACCESSORIES

A. Sidearms

1. 18 inches long, 1/2-inch diameter pipe with C-clamp and sliding tee.

   a. Altman 509 (18-inches)
   b. The Light Source MDB18

2. 24 inches long, 1/2-inch diameter pipe with pipe clamp and two sliding tees.

   a. City Theatrical – “Safer Sidearm Original #204”

B. Pipe booms

1. Assembly shall consist of the following:

a. Base. Base shall weigh at least 50 pounds. Base shall be threaded or incorporate a welded collar that is threaded to accept a 1-1/2-inch nominal (1.9-inch O.D.) pipe.

i. Altman B50
ii. SSRC 50BB

b. Pipe. 12'-0" long 1-1/2-inch nominal (1.9-inch O.D.) Schedule 40 pipe. Pipe shall be painted black and threaded on both ends.

c. Boom Tie off: Tie-off shall consist of a 1/2-inch steel rod welded to a 1-1/2-inch NPT steel pipe coupling.

i. Altman 530
ii. City Theatrical #1310

C. Pattern holders

1. Stainless steel, with epoxy handle
2. For holding standard "B" size theatrical "gobo" patterns within the designated slot in the lighting instrument.

D. F-stop "donuts"

1. Fabricated of min. 20-gauge steel, outside dimension to fit color frame holder of ellipsoidal spotlights, with diameter of circle to match the focal plane "gate" dimension for ellipsoidal spotlight served.
2. Paint flat black with high-temperature paint.

E. Drop-in iris assemblies

1. Provides irising of beam size from 100% to 10% of rated beam.

F. Top hats

1. Square frame attached to cylinder. Cylinder length shall be equal to its diameter.
2. Painted or anodized flat black with black flocking on the interior.

G. Stage cable

1. 20-ampere cable shall be 12-3 type SO cord with male plug at one end and female connector at other end.
2. 50-ampere cable shall be 6-3 type SO cord with male plug at one end and female connector at other end.
3. Cable lengths shall be identified with the length near the receptacle ends of the cables with 1/4" high black numbers on a colored background and sealed with clear shrink tubing. Colors as follows:

a. 100’ cables – blue
b. 50’ cables – green
c. 25’ cables – red
d. 10’ cables – yellow
e. 5’ cables – white

4. Each cable shall have (1) "Velcro" tiewrap permanently attached to the insulation near the female connector.
5. Refer to Paragraph 2.2 for specification of connectors.

H. DMX cable

1. Cable shall be one of the following:
   a. Pro-Plex “PC224P” as manufactured by TMB, Los Angeles, California
   b. “Power Flex DMX” as manufactured by Lex Products, Shelton, CT
2. Connector shall be a locking 5-pin XLR connector
3. Cable lengths shall be identified with the length near the receptacle end of the cables with 1/4" (6mm) high black numbers on a colored background and sealed with clear shrink tubing. Colors as follows:
   a. 50’ cables – green
   b. 25’ cables – red
   c. 10’ cables – yellow
   d. 5’ cables – white
4. Each cable shall have (1) "Velcro" tiewrap permanently attached to the insulation near the female connector.

I. Extension cords

1. 12-3 type SO cord with male plug at one end and female connector at other end.
2. Connectors shall be NEMA 5-15 15A 125V, Hubbell HBL5266EBK (plug) and HBL5269EBK (connector), Leviton 5266-CB (plug) and 5269-CB (connector), or approved equal.

J. Two-fers

1. Two-fers shall contain one male plug and two female connectors, wired in parallel with molded "Y" configuration.
2. Cable shall be 12-3 type SO cord.
3. Refer to Paragraph 2.2 for specification of connectors.

K. Adapters

1. Adapters shall be constructed of 12-3 type SO cord, 18 inches long, with a male plug at one end and a female connector at other end.
2. Connector types as per Schedule.

L. Safety cables

1. Minimum 1/8-inch aircraft cable, with 2-inch diameter loops on each end, seized by swaged copper sleeves; one loop shall include an operable spring clip rated for 200 pounds breaking strength, Acco 2450-7 or approved equal. Finished cable length: 36 inches.

M. Ghostlight

1. 72-inch stand with tripod base including locking casters, cable hook and lamp guard.

2. 25-foot cable lead.
3. Wiring: 12-guage three-conductor.
4. Connector: NEMA 5-15P.
5. Socket: E26 medium screw base.
6. Lamp: E26 base, 800-lumen, 3000K CCT LED A19 lamp
7. UL Listing required.
8. Altman Stage Lighting “GHOST,” or approved equal.

N. Quantities, lengths, and types as per Schedule.

O. Deliver to Owner.

2.8 PROSCENIUM THEATRE SCHEDULE OF QUANTITIES

Section		Description	Quantity
2.2		Connectors	1 for each unit, installed
		Spare Connectors, Male	6
		Spare Connectors, Female	6
2.3		Followspots	2
2.6		Tungsten Luminaires:	
	B	Ellipsoidal Spotlights	
		90 degree	8
		70 degree	0
		50 degree	12
		36 degree	20
		26 degree	20
		19 degree	20
		14 degree	0
		10 degree	20
	C	PAR Spotlights	24
2.7		LED Luminaires:	
	J	Ellipsoidal Spotlights	
		90 degree	10
		70 degree	0
		50 degree	10
		36 degree	10
		26 degree	10
		19 degree	0
		14 degree	8
		10 degree	0
	K	Par Spotlights	24
	L	Linear Striplights	24
	M	Single Cell Cyclorama Lights	0
2.8		Ellipsoidal Reflector spotlights - Spare Lens tubes	
	B1	90 degree	2
	B2	70 degree	2
	B3	50 degree	2
	B4	36 degree	2
	B5	26 degree	2
	B6	19 degree	2
	B7	14 degree	2
2.10	A	18-inch Sidearm	0
	A	24-inch Sidearm	30
	B	Pipe booms w/pipe	8
	C	Pattern holders	20
	D	F-stop "donuts"	20
	E	Drop-in iris assemblies	4

2.8 PROSCENIUM THEATRE SCHEDULE OF QUANTITIES, PAGE 2

Section	Description	Quantity
F	Top hats -for 50,36,26, and 19-degree ellipsoidal	24
G	Stage cable – 2P&G	
	100 ft.	2
	50 ft.	6
	25 ft.	30
	10 ft.	40
	5 ft.	30
G	Stage cable – L5-20	
	25 ft.	15
	10 ft.	20
	5 ft.	15
G	Stage cable – L6-20	
	25 ft.	12
	10 ft.	12
H	DMX Cable -	
	50 ft.	4
	25 ft.	4
	10 ft.	4
	5 ft.	100
I	Extension cords - 50 ft.	5
J	Two-fers (2P&G)	18
J	Two-fers (L5-20)	6
K	2P&G (Female) / “Edison” (Male)	6
K	“Edison” (Female) / 2P&G (Male)	6
K	2P&G (Female) / NEMA L5-20 (Male)	6
K	“Edison” (Female) / NEMA L5-20 (Male)	6
L	Safety cables	1 per fixture and 50% additional
M	Ghostlight	1

Lamps -

Followspots..... 3

Tungsten Ellipsoidal Spotlights – 575w, long-life - ..... as required plus 20% spares

Tungsten PAR spotlights - 575 watt, long-life-..... as required plus 20% spares

Color frames: One for each unit, plus 50% spares.

C-clamps: One for each unit, installed.

2.9 STUDIO THEATRE SCHEDULE OF QUANTITIES

Section		Description	Quantity
2.2		Connectors	1 for each unit, installed
		Spare Connectors, Male	6
		Spare Connectors, Female	6
2.3		Followspots	0
2.6		Tungsten Luminaires:	
	B	Ellipsoidal Spotlights	
		90 degree	0
		70 degree	0
		50 degree	6
		36 degree	6
		26 degree	6
		19 degree	6
		14 degree	0
		10 degree	0
	C	PAR Spotlights	12
2.7		LED Luminaires:	
	J	Ellipsoidal Spotlights	
		90 degree	10
		70 degree	0
		50 degree	10
		36 degree	10
		26 degree	10
		19 degree	0
		14 degree	10
		10 degree	0
	K	Par Spotlights	36
	L	Linear Striplights	0
	M	Single Cell Cyclorama Lights	20
2.8		Ellipsoidal Reflector spotlights - Spare Lens tubes	
	B1	90 degree	0
	B2	70 degree	0
	B3	50 degree	0
	B4	36 degree	0
	B5	26 degree	0
	B6	19 degree	0
	B7	14 degree	0
2.10	A	18-inch Sidearm	0
	A	24-inch Sidearm	30
	B	Pipe booms w/pipe	8
	C	Pattern holders	20
	D	F-stop "donuts"	20
	E	Drop-in iris assemblies	0

2.9 STUDIO THEATRE SCHEDULE OF QUANTITIES, PAGE 2

Section	Description	Quantity
F	Top hats -for 50,36,26, and 19-degree ellipsoidal	12
G	Stage cable – 2P&G	
	100 ft.	0
	50 ft.	0
	25 ft.	30
	10 ft.	40
	5 ft.	30
G	Stage cable – L5-20	
	25 ft.	8
	10 ft.	10
	5 ft.	8
G	Stage cable – L6-20	
	25 ft.	0
	10 ft.	0
H	DMX Cable -	
	50 ft.	0
	25 ft.	4
	10 ft.	8
	5 ft.	110
I	Extension cords - 50 ft.	5
J	Two-fers (2P&G)	18
J	Two-fers (L5-20)	6
K	2P&G (Female) / “Edison” (Male)	6
K	“Edison” (Female) / 2P&G (Male)	6
K	2P&G (Female) / NEMA L5-20 (Male)	6
K	“Edison” (Female) / NEMA L5-20 (Male)	6
L	Safety cables	1 per fixture and 50% additional
M	Ghostlight	1

Lamps -

Followspots..... 0

Tungsten Ellipsoidal Spotlights – 575w, long-life - ..... as required plus 20% spares

Tungsten PAR spotlights - 575 watt, long-life-..... as required plus 20% spares

Color frames: One for each unit, plus 50% spares.

C-clamps: One for each unit, installed.

PART 3 - EXECUTION

3.1 FABRICATION

A. Operating elements shall be mechanically safe and electrically "dead."

B. All steel parts and panels shall be cleaned and primed with rust inhibiting primer. Exterior finishes shall be epoxy resin or baked enamel in matte black, or in Manufacturer's standard color where not specified.

C. All internal wiring shall be factory completed. All wiring shall be in harnesses and bound. No loose or randomly routed wires shall be permitted.

D. All wire sizes and insulation shall comply with NEC and UL meet or exceed electronics industry standards.

E. Unless noted otherwise all power and data cable shall be black.

3.2 PACKING AND SHIPPING

A. Equipment shall be wrapped and sealed in polyethylene and substantially crated for shipment. Crates shall clearly indicate equipment contained, nature of components, and theatre site allocation.

3.3 INSTALLATION

A. Install all items in conformity with standard trade practices and Manufacturer's recommendations.

B. Consult and coordinate work with trades doing adjoining work.

C. Do not uncrate, unpack, unwrap, or install control console, video monitor(s), remote controls, or other auxiliary control components until construction is complete and environment is clean and dust-free.

D. Align all ellipsoidal spotlights for cosine (hot center) alignment at jobsite, prior to delivery to Owner. Such alignment to be supervised by experienced representatives of theatrical Dealer. Note: If union jurisdictions do not allow on-site work to be performed by theatrical Dealer, Dealer shall train and supervise union electrical workers in the alignment of ellipsoidal spotlights.

3.4 SYSTEMS INTEGRATION AND PROGRAMMING

A. Stage Lighting Dealer shall install the most current LED fixture profiles at each control console and train the owner to add and update fixture profiles during the Owner training required herein.

B. Stage Lighting Dealer shall provide theatrical luminaires as specified in this Section. Fixtures shall be provided with all required power and data cables.

END OF SECTION 11 61 34

SECTION 274100 – PERFORMANCE AUDIO-VIDEO SYSTEMS

PART 1 - GENERAL

1.1 GENERAL DESCRIPTION

A. The section provides the Contract Specification for the Audio-Video (AV) Systems to be installed in the performance spaces and related areas at Downers Grove South High School. This includes the Auditorium and Studio Theatre and the adjacent lobby and public restrooms, dressing rooms, shop, and theatre classroom.

1.2 RELATED DOCUMENTS

A. The Contractor shall read, review and understand all documents listed below prior to bidding or proceeding with work. The Contractor shall also refer to and understand all other related documents indicated herein.
   1. This section of the Specification.
   2. Division 1
      a. Applicable provisions of Division 1 shall govern all work under this section.
   3. Contract
      a. In addition to the conditions and work described herein, all conditions of the Contract shall apply.
   4. AV Equipment Schedule, observing:
      a. Product descriptions, manufacturers' names and model numbers.
      b. Quantities (to be confirmed by Bidder) for base pricing.
      c. Listed additive and/or deductive alternates which, if accepted by Owner, may alter the intent of, or negate, the text of this Specification or the details of the Drawings with respect to the facility afforded by said alternates.
   5. Audio-Video (PA) Systems Drawings: AV Systems drawings including schematics, elevations, sections and details designated as "PA".
   6. Other Drawings:
      a. Related Architectural Drawings; for reference only.
      b. Related Electrical Drawings; for reference only. Drawings with prefix "EA" identify electrical rough-in including conduit, junction and pull boxes, et cetera, for use with the audio-video systems. Power requirements for the audio-video systems are shown on drawings with "E" prefix. Work described by "EA" and "E" drawings is not included in this Section. However, the EA drawings indicate the locations for devices provided as part of the PA scope.
      c. Other, as appropriate; for reference only.

1.3 DEFINITIONS

A. "ADA" - Americans with Disabilities Act.

B. "Ancillary Equipment Rack" - The moveable equipment rack with equipment serving the main mixing console.

C. "Architect" or "Architect of Record" – Wight & Company, 2500 N Frontage Road, Darien, IL 60561, 630.969.7000, www.wightco.com.

D. "ASITG" - Audio System Isolated Technical Ground.

E. "Audio Video Panel" - Input/Output panel for audio connectors and/or video connectors. (Single-use connector panels shown on drawings are, in some instances, identified according to use.)

F. "AV" – Audio-Video.

G. "AVC" – Audio-Video Systems Contractor.

H. "AVP" - Used herein and on Drawings to abbreviate Audio Video Panel.

I. "Bid" - Herein, used interchangeably with "proposal."

J. "Center Array or Center Loudspeaker" - Loudspeakers at center of proscenium.

K. "Contract" - Used herein, refers to the Audio-Video Systems prime contract or subcontract.

L. "Contractor" – Audio-Video Systems Contractor.

M. "Control Booth" - Synonymous with "Control Room". Unless otherwise noted, references that which is made part of the particular space being described.

N. "Consultant" - Kirkegaard Associates, 110 West Kinzie Street, 4th Floor, Chicago, IL 60654, 312.441.1980, www.kirkegaard.com.

O. "Dedicated Movable Equipment" - Equipment furnished for a specific facility and not considered part of an AV equipment pool.

P. "Delay" - When referring to audio signal, same as "electronic delay."

Q. "Design Architect" – Wight & Company, 2500 N Frontage Road, Darien, IL 60561, 630.969.7000, www.wightco.com.

R. "DSP" - Digital Signal Processor.

S. "EC" - Electrical Contractor.

T. "EE" - Electrical Engineer.

U. "Facility-Wide" - For purposes of the Project, inclusive of the performance spaces and ancillary and technical support spaces.

V. "Floor Box" – Audio/Video/Power floor boxes.

W. "Furnish" - Supply, to Owner's representative, all equipment, parts or materials not requiring installation. Such equipment, parts and material may be supplied loose but must be appropriately packaged. Excludes test equipment, et cetera, "furnished" for use during system testing.

X. "GC" - General Contractor.

Y. “He,” “Him,” “His,” et cetera - Third-person singular used without preference or regard to gender.

Z. “HMP” - House Mix Position.

AA. “ICT” - Information Communication Technology.

BB. “IT” – Information Technology.

CC. “Incidental” - A minor item or expense associated with this work that a reasonable person would believe to be included without requiring explicit description.

DD. “IR” - Infrared.

EE. “Jack” - A receptacle used to make electrical low-voltage signal connections via a cord-mounted plug.

FF. “Left Array” - Loudspeakers at house-left with respect to audience members’ view of stage.

GG. “MDF” – Master Distribution Facility (IT Head-End).

HH. “MIAGP” - Main Isolated Audio Ground Point (within audio equipment racks).

II. “Mobile Equipment” - Generally, equipment on wheels. Considered part of an AV equipment pool furnished as part of these systems.

JJ. “Mobile Rack” - See “Ancillary Equipment Rack”.

KK. “Movable Equipment” - Generally, equipment that may be employed at various positions but requiring infrequent repositioning, or, requiring more effort to reposition than “Portable Equipment”. Considered part of an AV equipment pool furnished as part of these systems.

LL. “N/A” – Not Applicable.

MM. “N.I.C.” - Not included in AV Systems Contract.

NN. “Normalled” - Connected through a patchbay so that no patch cable is required to make the subject connection. Unless otherwise noted, Insertion of patch cable breaks “normal”.

OO. “Others” - Persons or contractors other than the Audio-Video Systems contractor responsible for the work described by this section of the overall project Specification.

PP. “Portable Equipment” - Generally, equipment that may be readily carried, repositioned or deployed by one person.

QQ. “Proposal” - Herein, used interchangeably with “bid,” or, “tender.”

RR. “Provide” - Unless otherwise indicated, requires contractor to furnish and install.

SS. “RGBx” - refers to both RGBHV and RGBS video.

TT. “Right Array” - Loudspeakers at house-right with respect to audience members’ view of stage.

UU. "Shop Drawings" – Drawings used by technicians offsite and onsite of the project for assembly and installation of the equipment.

VV. "Terminate" - Provide end-of-line impedance matching if specifically indicated, otherwise, synonymous with "connect" or "land".

WW. "Volume" - Sometimes used in lieu of "level" or "sound pressure level" when the former may be confused with elevation or height and when the latter is cumbersome.

XX. "Work" - When used as a noun, refers to the overall materials and labor required by the Contract to be provided or furnished.

1.4 SCOPE OF WORK

A. Complete System
1. Provide all described systems complete and working, according to the detailed information contained in the Contract Documents, the omission of minor details notwithstanding.
2. All system components should be connected and tested in the shop prior to delivery and installation at the project site. Any system functions or equipment which do not work properly during this test must be communicated in writing to the Consultant. Repair or replace equipment which is broken, damaged or failing to meet manufacturer's specifications; and retest entire system for proper functioning.

B. Test all AV cable and terminations to ensure compliance with criteria contained in this specification and applicable industry standards.
1. The thorough testing of the AV cable installation, including terminations is required. Such testing will quantify the quality of the cable installation. To such degree that the cable installation and terminations do not meet the project's stated requirement, the Contractor will be required to repair or replace, at no cost to the Owner, the poorly performing cable or terminations. The Contractor will also bear any additional expenses for having the cable or terminations re-tested.
2. Provide the test results to Consultant as detailed in this specification.

C. Contractor shall provide the following in accordance with Specifications and Drawings:
1. Submittals as described hereinafter. Furnish catalog sheets, color and material samples for approval only upon request by Owners' Representatives. Do not furnish catalog sheets except for equipment for which authorization to substitute is requested.
2. Verification of dimensions and other conditions at project site.
3. Verification that any component required by this Section, if suspended or mounted overhead, bears appropriate approval by a structural engineer of hanging or mounting hardware integral and/or attached to that component.
4. Verification that all hardware, rigging or structural elements, as provided by others, bear appropriate structural engineering approval prior to components required by this Section being suspending from or mounting to said elements
5. AV equipment, accessories and mounting hardware.
6. Control equipment and accessories.
7. Programming of Integrated Control System. *Note: Consult with System Designer for full scope of control requirements prior to starting programming.*

8. Within each of the audio Digital Signal Processor systems, create system equipment, and connection, functional diagrams (a.k.a., “maps”) including remote-control accommodations based on the systems described herein. Such maps shall be well-labeled, neatly organized and ready for operation at the time of Acceptance Testing. Submit design with Shop Drawings. *Note: Consult with System Designer for full scope of DSP requirements prior to starting programming.*
9. Installation, configuring and programming of any software systems purchased through this contract.
10. Cabling, wiring connectors, connector panels and accessories.
11. Equipment racks and associated accessories.
12. Power distribution within equipment racks made part of this work, ready for power connection by the Electrical Contractor.
13. Incidentals necessary for a complete working system.
14. Initial testing and adjustments, demonstration of system for approval, participation in acceptance tests, final adjustments as required.
15. Record Documents.
16. “As-Built” drawings and Owner’s Manual.
17. Instruction of operating personnel and video record of training sessions.
18. Maintenance services for one year following acceptance of system.

D. Special Insurance
1. Provide insurance fully covering all equipment against loss and damage during shipment, storage, installation, testing, adjustment and demonstration.

E. Not in this Scope of Work
1. Related work specified elsewhere or provided by Owner, including:
   a. All conduits/containment, cable trays, junction boxes, pull boxes, outlet boxes, floor boxes, and in-ceiling loudspeaker backboxes when not integral with loudspeaker devices.
   b. All project AC power, including but not limited to:
      1) Dedicated Audio-Video AC power system.
      2) AC power to individual equipment racks from dedicated AC power system.
      3) AC power receptacles not within equipment racks but dedicated for audio-video systems use and served by the dedicated AC power system.
   c. Audio System Isolated Technical Ground (ASITG) conductors from Main Building Technical Ground Points to Main Isolated Audio Ground Points (MIAGP) in AV equipment racks.
   d. All architectural millwork required in support of the AV systems.

1.5 BIDDING

A. Bids shall include specified equipment and pre-approved alternates.

B. The information included in the Quality Insurance section below shall be included in the bid proposal.

1.6 ASSURANCE OF MOST UP-TO-DATE EQUIPMENT

A. It is a project requirement that all AV equipment be each manufacturer's most recent models, especially as includes the introduction or integration of new technology, according to the following guidelines.
   1. Prior to ordering, the Contractor must verify that the equipment being purchased represents the manufacturer's most recent products within each product category.
   2. The Owner shall have 14 days to respond to any equipment changes which would be made due to such recent technology becoming available.

1.7 OWNER'S RIGHT TO SUBSTITUTE OR DELETE EQUIPMENT

A. Substitutions to or deletions of the specified equipment, as may be requested by the Owner or Owner's Representative, shall be allowed without cost penalty to the Owner prior to equipment being ordered by the Contractor, according to the following guidelines:
   1. The pricing of requested substitutions which are more or less expensive than the originally specified equipment will follow the provisions for Pricing of Changes, listed below.
   2. Substitution requests from the Owner or Owner's Representative which are made following approval of the specified equipment and after purchasing by the Contractor are subject to the provisions for Pricing of Changes.

1.8 PRICING OF CHANGES

A. Changes to the required equipment prior to the ordering of the equipment, as may be requested and approved by the Owner or Owner's Representative, shall be priced as follows:
   1. Such changes must be made at no cost penalty to the owner based on the Dealer Cost of each equipment item.
   2. Do the degree that the changes of equipment require additional engineering time, the Contractor may submit for additional engineering amounts at the change-order labor rate for the project.

B. Changes to the required equipment following the ordering of equipment, as may be requested and approved by the Owner or Owner's Representative, shall be priced as follows:
   1. When a manufacturer does not provide a Manufacturer's Suggested Retail Price (MSRP) or List Price, additions shall be at no more than 33% above wholesale or dealer cost based on the manufacturer's wholesale or dealer price list, according to the quantities required, and without regard for additional discounts afforded to preferred dealers by manufacturers. Conversely, deletions shall be at no less than 120% of wholesale.
   2. When a manufacturer does provide an MSRP or List Price, equipment additions shall be at no more than 90% of MSRP or no more than 33% above wholesale, as described above, whichever is less. Conversely, credited deletions shall be at no less than 80% of MSRP or 30% above wholesale, whichever is more.
   3. Additions, as approved by the Owner or Owner's Representative, to the required labor shall be priced at no more than the rate quoted on the bid form and therefore made part of the contract. Price conversely for credited deletions.
   4. Include change-order labor rate with bid for this project.

1.9 SUBMITTALS

A. The Contractor will provide all requested submittals in a timely manner according to the descriptions below, and the following list. Submittals must be approved prior to the commencement of purchasing or installation pursuant to the information contained within the submittal.
   1. Within Four Weeks of Contract Award:
      a. Milestone Dates
      b. Project Personnel
      c. Conduit/Containment Verification
         1) The statement must verify all conduit systems including those serving the AV systems in the base package and alternates, regardless the acceptance of the alternates as part of the final installation.
   2. Prior to Equipment Purchase
      a. Equipment list including manufacturer, model number and quantity arranged by room and/or system.
      b. Shop Drawings (see definition herein).
   3. Prior to Equipment Installation
      a. Rigging and Mounting Drawings.
      b. DSP files.
      c. Remote control files for the amplifiers dedicated for the main loudspeaker systems.
      d. Integrated control system simulation files for the touch panels.
   4. Prior to AV Commissioning (Checkout)
      a. Written notice of installation completion.
      b. Initial Testing and Adjustment Documentation.
   5. Prior to Completion
      a. Notification of completion of Punch List
      b. Outline of training sections
      c. Operating and Maintenance Manuals.
      d. As-Built Drawings.

B. Form
   1. Submit all materials for review as described below, referenced to the Specification paragraph number (where applicable).
   2. Submit two copies for AV review (photocopies and electronic copies are acceptable).
   3. Submit all major drawings on sheets of one size, preferably the project standard size.
   4. Where materials are presented on sheets 11” x 17” or smaller, organize into three-ring binders which include:
      a. Dividers or tabs between logical sections
      b. Project name and binder title labels on face and edge of binders
   5. Submit all minor drawings on sheets of one size.
   6. Contractor material submitted electronically shall be stored in CD or DVD. Arrange folders on submittal disks with a naming convention that makes clear the contents of files which, otherwise, have no distinguishable names.
   7. Contractor drawings submitted electronically shall be plotted to PDF format and at the standard sheet size for the project. Thus, if the recipient chooses to plot to paper at 1:1 ratios, the drawing will fit properly on this sheet size. (This paragraph intends to assure that drawings are well defined and readable, whether viewed electronically or on paper.)
   8. On submittal drawings, maintain 3/32” minimum lettering height wherever possible. Submittals with text less than 1/16” in height may be rejected.
   9. Partial Submittals may be rejected.

C. Documents
1. Provide the following documents for review by Owner's Representatives after award of Contract and prior to purchase, fabrication, assembly and installation of equipment and materials:
a. Milestones: Provide schedule of work with milestones for following tasks:
1) Submittals complete.
2) Shop fabrication complete.
3) Shop testing.
4) Shipment to site.
5) Installation.
6) Field testing.
7) Training.
b. First Event Date:
1) The scheduled project completion date will be provided to Contractor prior to making the contract. As of this date systems should be usable and substantially complete.
2) At the discretion of the Owner, Final Acceptance Testing and correction of "punch list" items may extend beyond the date for substantial completion. Contractor will be advised as to any changes in expected date of completion.
c. Personnel:
1) Provide, in writing within two weeks after award of Contract, names, mailing address, phone numbers with extensions, email addresses and paging service numbers (if available) of following project personnel:
a) Administrative Project Manager.
b) Technical Project Manager.
c) Service and Installation Manager(s).
d) Field Foreman.
d. Conduit Verification:
1) Within four weeks after award of Contract, submit:
a) Statement confirming that Contractor has reviewed the conduit system as shown in electrical section of building construction documents and, where applicable, as built.
b) Notification to Consultant, General Contractor, Architect and Electrical Contractor of deficiencies or inadequacies, if any, in conduit system design or installation. If none, so indicate.
e. Shop Drawings:
1) Provide the following Shop and Field drawings for review and approval prior to purchase, fabrication or assembly of equipment:
a) System functional diagrams showing all wire-tag numbers or nomenclature to be used in the assembly shop or in the field.
b) System conduit plan or riser drawing showing wire type and wire fill including quantity of each wire type.
c) Detailed system schematic wiring diagrams showing all wire-tag numbers or nomenclature to be used in the assembly shop or in the field. (To be provided for all wiring that cannot be accurately represented by one-line functional diagrams.)
d) Audio Digital Signal Processor functional diagrams in computer file format.
e) Integrated remote control system operational computer file and printed screen shots for the user-interface.
f) Patchbay layouts referenced to system functional diagrams.
g) Equipment rack layouts.

h) Shop drawings of all custom ("bespoke") assemblies such as racks, panels, et cetera.
i) Physical arrangement and circuiting of AC power distribution within AV equipment racks.
j) Shop drawings detailing cable management and including:
(1) Wire type and physical arrangement of ducts, trays, harness bars, et cetera.
(2) Major wire routes in racks according to signal groups.
(3) Transition at junction boxes and equipment racks.
k) Mounting and installation details of AV equipment requiring integration with cabinetry or architectural elements.
l) Catalog sheets as required by this Specification and for products where Contractor has choice allowed by this Specification.

f. Rigging and Mounting Drawings
1) Details, stamped and signed by an engineer licensed in the State of Illinois, of all equipment mounting methods and materials provided by the Scope of Work, wherein failure of method or materials used for mounting or hanging permanently installed equipment could result in serious personal injury.
2) Details provided by or requiring approval by licensed engineer may include: method of attachment to building structure or attachment and/or suspension points; method of attachment to supported equipment; all suspension materials; a materials list including specifications of all suspension materials; calculations used to determine loads and strengths of suspension materials; other as deemed necessary by the engineer.
3) In the absence of submitted approved, stamped and signed mounting and hanging details, the Owner reserves the right to acquire such engineering approval at the expense of the Contractor. Owner will notify Contractor of such intent. Contractor shall remedy within two weeks or Owner may proceed without Contractor approval and without relieving Contractor from any other obligations set forth by Contract.

g. Samples
1) Color and finish samples as required by this Specification and, additionally, as may be requested by Owners' representatives. In the absence of specific requests for the Owner's representatives, minimally, submit samples of…
a) …each wall plate/panel finishes type and color combination.
b) …each round, ceiling or wall-mounted, loudspeaker grille type.

h. Catalog sheets as required by this Specification and for products where Contractor has choice allowed by this Specification. (Reiterating: DO NOT submit the catalogue sheets for listed equipment.)

i. Initial Testing and Adjustment Documentation
1) Submit at least two weeks prior to final acceptance testing.
2) Preliminary performance test results.

D. Requests for Substitutions
1. Substitutions requested by Contractor before and/or after the Contract award shall be in accordance with the requirements of the Contract, this Specification Section, and, as applicable, the General Conditions. In any case, requests for substitutions, before and/or after the Contract award, must be in writing. Contractor shall receive authorization in writing from the Owner or Owner's representative prior to implementing substitutions.

2. Prior to purchase, fabrication or assembly of related equipment, provide:
   a. A list of all requested substitutions granted during or since the bidding and contract negotiation process, including the date granted and name of grantor. Written verification of granted substitutions may be required.
   b. A list of requested substitutions pending acceptance.
   c. Documentation in support of requested substitutions pending acceptance.
3. Contractors shall submit bids based upon the specified items. Contractors wishing to submit pre-approved substitutes based on cost savings to the Owner shall do so as voluntary deduct alternates with their bids.

E. Approvals
1. Do not proceed with the Work until approvals required by the Contract, this Specification Section and, as applicable, the General Conditions are granted by Owner's Representatives, specifically, the Architect/Engineer and the Consultant.
2. Receive written approval and editorial review from Architect and Owner prior to publication of any references, articles, and/or acknowledgments regarding this project.

1.10 RECORD DOCUMENTS

A. Operating and Maintenance Data Manuals:
1. Submit one paper set of Operating and Maintenance Data Manuals bound in heavy duty locking binders with steel hinges. Binders shall include heavy duty dividers and contain the following sections:
   a. Table of contents.
   b. Updated system functional descriptions.
   c. List of provided equipment, material, accessories, and loose items including quantities.
   d. Manufacturers' descriptions and specifications sheets arranged alphabetically by manufacturer and then by model number.
   e. Complete instructions including:
      1) System-specific operating instructions written by the contractor to instruct current and future users on how to run the system whether or not they have had the benefit of site training or oral history.
      2) Equipment-specific operating instructions including manufacturers' operating manuals arranged alphabetically by manufacturer and then by model number.
      3) Tabular, graphic, photographic or software record of settings and adjustments of semi-fixed controls.
   f. Test reports.
   g. Key Schedule. (i.e., a list of physical keys relating specifically to this project).
   h. Copies of the un-compiled source codes for the integrated control system, if any.
   i. Copies of warranty amendment letters.
   j. Copy of this Specification.
2. Submit three copies of the above on CD or DVD media. Include all of the above except for, or with the addition of, the following:
   a. Do not provide a "Table of Contents". Instead, organize data in folders with clear organization and readily understood file names (e.g.: "Equipment\[manufacturer's name]\[model number]"; "Software\Remote Controls\[room name]\[control system name]", et cetera).
   b. Provide software settings and data files for all computer-controlled equipment.
   c. Include DVD(s) shot during all Employer training sessions as recorded and edited by the Contractor.
   d. Provide, in "pdf" format, manufacturers' catalogue sheet for each piece of equipment.

B. System “As Built” Drawings:
   1. Upon completion of the project and final acceptance of the installation, update original drawings to accurately reflect the as-built conditions of all required modifications, executed change orders or other field conditions.
   2. Provide three copies of the following “As Built” drawings, in pdf format, on CD:
      a. System functional block diagrams.
      b. Detailed wiring diagrams including wire tag numbers and wire color codes.
      c. AV panel elevations.
      d. Patchbay layouts.
      e. Rack layouts.
      f. Terminal block layouts.
      g. Circuiting of AC power distribution within AV equipment racks.
      h. AC power sequence layouts.
      i. Conduit diagrams.
      j. Conduit-fill schedule diagrams.
      k. Other relevant drawings as appropriate.
   3. Provide two paper copies of the above “As Built” drawings on Project’s standard drawing size or reduced to sheets no smaller than 11”x17”. Maintain 3/32” minimum lettering height wherever possible and allow no lettering less than 1/16” in height.

C. Posted Operating and Maintenance Instructions:
   1. Provide and post at each equipment rack location and equipment backboard, mounted behind glass or acrylic plastic, a bond-paper xerographic (not blue-line) reproduction of the following:
      a. Instructions indicating the method and/or sequence for powering the system on and off.
      b. System block diagram, System block diagram. If large paper is used, fold and store in protective envelope in back of equipment rack at the Rack Room. Provide heavy-duty envelope(s), as required.

D. Infrastructure Testing Manuals
   1. Submit, as recorded media, one Infrastructure Testing Data Manual containing the following sections:
      a. Table of contents.
         1) Logical section breakdown of testing conducted.
      b. Test reports.
   2. Submit three copies of the above on CD or DVD media.

E. AV System Training Video Recordings
   1. Make a video recording of all training sessions and provide two copies on DVD media to the Owner.

F. Software Passwords:
   1. Software Password Schedule (i.e., a spreadsheet listing the manufacturer, model number and location in the Facility of each piece of audio-video systems equipment, the software for which is password-protected).
   2. Provide three copies of software passwords as unprotected .pdf files on CD or DVD media.
   3. Provide to Owner’s Representative as a secure document separate from Operating and Maintenance Manuals and As-Built Drawings.

G. Source Code Files
1. The Contractor shall provide to the Owner, at the conclusion of acceptance testing, any system source codes, touch panel source material and audio processor files.
2. All electronic files become the property of the Owner and shall be fully functional and able to be modified.
3. Provide three copies of the source code files on CD or DVD media.

1.11 QUALITY ASSURANCE

A. Contractor Qualifications
1. AV Contractors (or their subcontractors) submitting proposals on any work covered by the Audio-Video Systems Contract Documents for the construction of the project shall be recognized contractors engaged in the types of work covered under said Contract Documents. Said Contractor (or their subcontractors) must possess sufficient technical, operational, and financial resources to perform and complete the contract, and shall furnish evidence thereof on request and prior to contract award.
2. To qualify as the AV Contractor, a contracting firm shall have been, for at least the past five years, in the business of providing systems comparable to those described by the Audio-Video Systems Contract Documents. Submit with proposal, documentation verifying the AV contractor's experience in fabricating and installing audio-video systems of similar scope and size to that of this project. Contractors not having the requisite applicable experience may be disqualified.
3. To qualify as the AV Contractor, a contracting firm shall have factory-trained programmer(s) of the specified integrated control system and the specified audio digital signal processor on staff. Contractors without certified programmer(s) on staff shall contract independent programmer(s) with said training. Submit with proposal, documentation indicating compliance and include name(s) of programmer(s). When using independent programmer(s), the Contractor shall complete the installation with acknowledged programmer(s) or provide a written notification and proposed alternative to the Consultant, Owner's Representatives or Architect for approval.
4. To qualify as a Contractor, a contracting firm shall maintain facilities, test equipment and trained technicians for fabricating, installing, and servicing the equipment specified, and have done so for at least the past five years. Said service facility shall be fully staffed with qualified personnel. Contractor shall maintain a parts inventory and stock of "loaner" or rental equipment sufficient to provide, within 24 hours of notification, any necessary in-warranty or out-of-warranty service or equipment replacement to prevent loss of use of the System due to equipment failure.
5. To qualify as a Contractor, a contractor shall be an experienced user, and be able to provide, at request of consultant, at least one-each during Initial Testing and Acceptance Testing, of test equipment items listed below. Alternatively, professional-grade test-equipment which combines the functions of the individual pieces of equipment listed may be used in the testing procedures. Kits, "home-built" and other nonprofessional test equipment shall not be acceptable.
    a. 1/3-Octave Real Time Analyzer
    b. Distortion Analyzer (Tektronix, Hewlett Packard, Audio Precision, B&K or Neutrik)
    c. Low Distortion Audio Oscillator
    d. Precision Sound Level Meter
    e. Impedance Bridge
    f. Oscilloscope
    g. Random Noise Generator
    h. Digital Volt-Meter
    i. Smaart Live version 6 or later or a comparable dual channel FFT system

j. Waveform Monitor
k. Vectorscope
l. Function Generator
m. Video Signal Analyzer, e.g. Tektronix VM700T
n. Video Test Generator with RGBHV, component video, SDI/HD-SDI, DVI and HDMI outputs.

B. Contractor Responsibilities and Miscellaneous Understandings at Time of Proposal:
1. The Contractor shall verify correctness and completeness of materials lists and model numbers prior to bidding and shall assume responsibility for correctness of quantities. If a conflict exists between system drawings and/or written descriptions and/or itemized equipment lists, or if mathematical errors within the Specification result in low equipment totals, the Contractor shall provide the higher quantity unless directed by the Architect or Consultant to do otherwise.
2. A Contractor intending to utilize the services of another company or person in fulfillment of the Specification shall include, with the Bid Submittals, copies of the intended written contract between that other person or company and the bidding firm. The Contractor shall utilize only employees of his firm for the fabrication and installation of the systems specified unless participation by others has been indicated by the Contractor and accepted by the Architect as part of the Bid. In any case, the Contractor shall be wholly and singly responsible for all details of the Contract Documents.
3. The Contractor shall submit a complete, concise, and unambiguous bid document inclusive of all design, materials, equipment, technical and non-technical installation labor, specialized tools and test equipment, system warranty and documentation and any and all applicable taxes, fees and permits.
4. The Contractor shall submit, with the bid document for the base package, pricing in separate line items for each alternate.
5. Provide a Letter of Qualifications with the Proposal according to the following guidelines:
   a. Send letter to Architect.
   b. List the AV Contractor's name, address, email address, telephone and fax numbers, number of employees, date of establishment as a business, date of incorporation (if applicable) and contractor's license number (if applicable).
   c. List at least two previously completed systems of similar scope and complexity completed within the previous seven years. Provide names, addresses, and phone numbers of Owner, Consultant (if any), Construction Manager, and Architect contact for each project listed.
   d. List and profile experience and training (formal and factory) of proposed:
      1) Technical Project Manager.
      2) Service and Installation Manager(s)
      3) Field Foreman.
      4) Analysis equipment owned and maintained by Subcontractor.
   e. List subcontracting intent (including testing services):
      1) List, for each subcontractor, name, address, email address, telephone and fax numbers, number of employees, date of establishment as a business, date of incorporation (if applicable) and contractor's license number (if applicable).
      2) Proposed subcontractor scopes of work.
      3) List and profile experience of each subcontractor in designated scopes.
6. Authorization to Contact References
   a. By bidding this work, the bidding contractor agrees that the Architect/Owner/ Consultant may contact any reference provided by the bidding contractor for the purposes of verifying the information provided.
7. Letter of Qualification shall be signed, with name and title printed below signature, by a corporate officer or owner of the contracting company.

8. Pre-Bid Questions and Site Visits
    a. Pre-bid questions shall be addressed to the Owner's representative(s) in writing. Verbal instructions to either bid or perform the Work in a manner which does not comply with the Contract Documents do not bind the Owner or Subcontractor.

C. Field Personnel
1. When such training is available, Technical Project Manager and Field Foreman shall be factory trained in installation and adjustment of specified equipment prior to commencement of installation.
2. Maintain the same individual in charge of work throughout execution unless illness, loss of personnel, or other circumstance(s) beyond the control of the Contractor intervenes. Immediately inform Architect, Consultant, GC, EC, ICT Contractor and Owner's Representative, by fax or email, of change of individual in charge.

D. Coordination
1. Coordinate work of this Section with work of other Project Manual sections and associated trades.
2. Specific references, herein, requiring coordination of certain work shall not obviate responsibility for other required coordination.

E. Contractor shall
1. Verify correctness of Equipment Schedule with regard to quantities and model numbers.
2. Verify dimensions and other relevant conditions at Site prior to installation.
3. Review conduit system as shown in electrical section of building construction documents and, where applicable, as built.
    a. Notify Consultant, Architect, GC, and EC within four weeks after award of contract of deficiencies or inadequacies in conduit system design.
4. Notify Consultant, prior to submitting shop drawings, conflicts and/or deficiencies in the system diagrams, equipment, and system description.
5. Notify appropriate parties of conflicts in timely manner.
6. Work cooperatively with other trades to resolve conflicts.
7. Furnish specified Submittals in a timely fashion.
8. Meet requirements and milestones of project schedule.
9. Use equipment in the manner specified.
10. To the greatest extent possible, assemble and wire equipment racks off-site.
11. "Burn-in" or "Break-in" electronic equipment for 72 hours minimum.
12. Replace failed equipment.
13. Repair or replace with approved alternate, new components found not to meet manufacturers' specifications, when such failure has an adverse effect on the installation.
14. Provide Field Personnel with a copy of this Specification, AV Equipment Schedule and the original AV and EA bid drawings for reference in the field.
15. Following manufacturer's instruction for installation and testing procedures of the equipment.

F. Standards and Codes
1. Comply with local, state and federal codes and applicable National Electrical Code, American National Standards Institute and Underwriters' Laboratories, Inc. standards.
2. All equipment, material, accessories, and loose items furnished shall be new and shall conform to applicable requirements of the above-mentioned agencies.
3. If required by local authorities, provide certificates and labels indicating compliance with above-mentioned codes and standards where applicable.

G. Testing
1. Submit preliminary performance test data at least two weeks prior to final testing.
2. Equipment shall be operated under standard conditions as recommended by manufacturer during performance testing.
3. Final Acceptance Testing shall be performed in presence of Owner's Representative to demonstrate acceptability of project as installed.
4. Repair conditions caused by defective workmanship.
5. Replace defective material and equipment.
6. Re-testing may be required to demonstrate compliance with Drawings and Specification.

1.12 WARRANTY AND TECHNICAL SUPPORT

A. One year warranty
1. Contractor shall warrant the system against failure resulting from defects in material or workmanship for a period of one year from final acceptance by Owner.
2. If the manufacturer of any equipment used in these systems provides less than a one-year warranty for that equipment, Contractor shall assume warranty responsibility for the balance of the one-year period not covered by the manufacturer.
3. Within warranty period, Contractor shall make necessary repairs and replacements at the convenience of and at no cost to Owner. Within warranty period, provide prompt replacement of defective materials and repair of faulty workmanship at no cost to the owner.
4. Paint, exterior finishes, fuses and lamps are excluded from guarantee except when damage or failure results from defective materials covered by guarantee.

B. On-site service
1. Provide, at no cost to Owner, maintenance service during above mentioned warranty period. At minimum, this service shall include a visit to the site, one visit six months prior to expiration of the warranty period and one visit two to four weeks prior to expiration of the warranty period, for checking AV systems and equipment. Perform standard maintenance and effect any warranty service requirements revealed during these visits. (No limitation of warranty service is intended by these instructions).
2. During warranty period, Contactor shall answer all service calls within one business-day.
3. Provide on-site service within 24 hours of notice by Owner if instructions from Contractor to Owner fail to correct system-critical faults within two hours of notice by Owner.
4. Provide on-site service within 72 hours for faults determined by the Owner to be not system-critical. Alternatively, at the discretion of the Owner, components to be removed and replaced by Owner may be transported via common carrier shipments.

C. Extended Warranty Option
1. If Owner accepts any Extended Warranty Option, fulfill the requirements of the Extended Warranty as described for original one-year warranty and according to any agreed-to special terms.

1.13 SYSTEM DESCRIPTION

A. General
1. This System Description supplements other information in this Specification, AV System Drawings, AV Equipment Schedule, and related architectural, electrical and other drawings. The Work shall include, but not be limited to, the systems, system elements, components and related cabling infrastructure, panels and hardware described in this System Description.

2. Provide new audio and video equipment interfaced with new conduit and power systems (the latter two systems by others)
3. Install owner-furnished equipment, if any, interfacing with the new systems and the conduit and power systems.
4. Provide installed cabling and connector panels (AVPs & JBs) for connectivity to support the program requirements described for each space.
5. Provide programming for the integrated control system and all DSP based systems.
6. Coordinate with the *owner's IT personnel for assigning the IP address for the related AV systems equipment that connects to the building network.*

B. Auditorium
1. Loudspeaker systems.
   a. The left, center, and right main loudspeakers are constant curvature line arrays with multiple loudspeaker cabinets, whose combined effect will provide proper dispersion control and consequently good intelligibility within the auditorium.
   b. An array of under-balcony fill loudspeakers provide coverage for audience at the back of the main floor who do not have line-of-sight to the center loudspeaker array.
   c. Small front-fill loudspeakers are integrated into the orchestra pit railing to serve audience seated in the front rows of the Auditorium.
   d. An array of subwoofers mounted at the catwalk closest to the stage supply low-frequency support.
   e. Additional loudspeaker connection points in the seating area provide for temporary installation of surround or effects loudspeakers.
   f. Additional loudspeaker connection points on stage provide for portable stage monitor loudspeakers for musician or confidence monitoring.
2. Mixing Position. The principal audio control position is located at the orchestra level parterre in front of the edge of the balcony. The main audio mix console is located here. For live shows with multiple inputs, a professional digital mixer coupled with a digital stage box is used.
3. Simple (Utility) Mode. In addition to the main mixing console, a simple operational mode allows events requiring only basic functions of the AV systems to be operated without the main console. The control system will primarily control the video system, a limited number of wired or wireless microphones, and the operation of a pan/tilt/zoom video camera.
4. Lectern. The AV system will include a moveable lectern to be used for AV presentations and lectures.
   a. The lectern to be a cosmetically finished model as determined by the architect and owner.
   b. Lectern equipment will include computer connections, a lecture microphone, and a dimmable task light.
5. Audio Playback
   a. A Blu-Ray/CD/Media player is provided for use at the mix position.
   b. Other portable devices can be connected as needed at the AV panels, floor boxes, or mixer.
6. Wired and Wireless Microphones. Reinforcement requires a supply of high-quality microphones designed to withstand the rigors of live use on stage. A complement of wireless mics, floor mics, overhead mics and stand-mounted vocal and instrument mics meet program needs.
7. Audio Recording. Infrastructure and equipment are included for stereo archival recording.
   a. For archival recordings, a pair of microphones are hung from the catwalks. These mics also serve as a source for the hearing assistance system and monitor/page system.
   b. These microphones will feed signal to a stereo recorder at the mixing position and the recording process can be controlled from the touch panels or manually at the mixing position.

c. For performances that use the mix console, a recording can also be made to a USB drive connected to the console.
d. Multitrack recordings can be made via a USB connection on the back of the digital mixer to a separate computer. A portable computer is typically used for this function (not included in AV equipment).

8. Video Projection.
   a. A fixed-frame video screen is flown on a lineset in the stage house. This screen is normally located about 10' behind the stage plasterline, in a location that can (if needed) be deployed between the first and second orchestra shell ceilings This screen can also be relocated upstage, if needed. (A second screen for use farther upstage is included as a project alternate.)
   b. A permanently mounted video projector sized to match the screen described above is located in an acoustically isolated space in the booth.
9. Enhanced Video Projection. Connections are provided to enable additional projectors to be deployed for projecting digital backdrops for performance events. These additional projectors are rented and installed on an as-needed basis and are not included as part of the installed systems.
10. Video Switching, Transport, and Playback. The video system will include both 3G-SDI coax cable for cameras and monitors and NDI/HDBaseT transport of HDMI over Category and fiber-optic cabling. This will provide a flexible and expandable system to handle a wide variety of production video requirements.
    a. Video input panels will be located onstage at floor boxes, at the Control Booth, and in-house mix position for the connection of video sources including school provided computers. These inputs rely on video encoders that are included with the playback equipment and lectern.
    b. Video playback capability will also be included at the backstage rack via a player.
11. Video Cameras. The video system will be equipped for video capture and video streaming.
    a. A high-definition (HD) pan-tilt-zoom (PTZ) video camera will be provided in the booth and an H.264 streaming media recorder will be included in the system for live streaming and archival recording of performances.
    b. A HD/SDI fixed focus camera adjacent to the PTZ camera provides confidence monitoring for the stage manager and lobby displays.
    c. Additional connection points in the Auditorium seating area provide connection for owner-provided additional cameras used for multi-camera video productions.
12. Support Systems.
    a. Four-channel production Intercom provides communication amongst technical staff in and around the Auditorium.
    b. A hearing assistance system that transmits to users via wireless headsets is provided for ADA compliance.
    c. A production audio monitor/page system provides audio program from the Auditorium to backstage, support areas, and the lobby. The stage manager can page backstage areas and the house manager can page lobby areas using this system.
    d. Video from the HD/SDI camera is distributed to the video monitors in the stage rack and the stage manager's rack, the dressing rooms, Green Room, and Theatre Classroom allowing production staff and performers to follow the program.
    e. Video monitors provided in the Lobby can be used as latecomers' monitors during performances and events. These displays can also be used as digital signage displays during regular hours when there are no performances in the Auditorium.
13. AV Infrastructure. Audio (microphone level, line-level and loudspeaker level), Video, and AV Data (Cat 6 F/UTP) infrastructure is provided in support of functions described above.

C. Studio Theatre
1. Semi-permanent loudspeakers. A pair of stereo playback loudspeakers provide reinforcement and playback for the default room setup.
2. Portable loudspeakers. Additional portable loudspeakers are provided that can be deployed as needed to support theatrical presentation requirements in various seating arrangements.
3. Mixing Position and Equipment. The principal audio control position would be located at the second-level control booth. A smaller digital mixer similar to the one provided for the Auditorium provides for live mix events with multiple input requirements. Because the console uses a digital connection, it can also be relocated to a floor position, if needed.
4. Lectern. The AV system will include a moveable lectern to be used for AV presentations and lectures.
    a. The lectern to be a cosmetically finished model as determined by the architect and owner.
    b. Lectern equipment will include computer connections, a lecture microphone, and a dimmable task light.
5. Audio Playback
    a. A Blu-Ray/CD/Media player is provided for use at the mix position.
    b. Other portable devices can be connected as needed at the AV panels, floor boxes, or mixer.
6. Wired and Wireless Microphones. Reinforcement requires a supply of high-quality microphones designed to withstand the rigors of live use on stage. A complement (or pool) of wireless mics, floor mics, overhead mics and stand-mounted vocal and instrument mics meet program needs.
7. Audio Recording. Infrastructure and equipment are included for basic archival recording.
    a. For archival recordings, a single omni-directional microphones is hung from the ceiling. This mic also serves as a source for the hearing assistance system and monitor/page system.
    b. For performances that use the mix console, a recording can also be made to a USB drive connected to the console.
    c. Multitrack recordings can be made via a USB connection on the back of the digital mixer to a separate computer. The computer is not included in AV equipment.
8. Video Projection.
    a. A motorized roll-down screen is located on one wall to serve the default room setup.
    b. A permanently mounted video projector sized to match the screen described above is located in an acoustically isolated housing in the room.
9. Video Switching, Transport, and Playback. The video system will include both 3G-SDI coax cable for cameras and monitors and NDI/HDBaseT transport of HDMI over Category cabling. This will provide a flexible and expandable system to handle a wide variety of production video requirements.
    a. HDMI input panels will be located around the stage floor and at the Control Booth.
10. Video Cameras. The video system will be equipped for video capture and video streaming.
    a. A high-definition (HD) pan-tilt-zoom (PTZ) video camera is provided that can be mounted where needed to meet production requirements and an H.264 streaming media recorder will be included in the system for live streaming and archival recording of performances.
    b. A HD/SDI fixed focus camera is provided that can be mounted where needed to meet production requirements to provide confidence monitoring for the stage manager.
    c. Additional connection points around the stage deck provide connection for owner-provided additional cameras used for multi-camera video productions.

11. Support Systems.
    a. Two-channel production Intercom provides communication amongst technical staff in and around the theatre.
    b. A hearing assistance system that transmits to users via wireless headsets is provided for ADA compliance.
    c. A production audio monitor/page system provides audio program from the theatre to backstage, support areas, and the lobby. The stage manager can page backstage areas and the house manager can page lobby areas using this system.
    d. Video from the HD/SDI camera is distributed to the video monitors in the stage rack and the stage manager's rack, the dressing rooms, Green Room, and Theatre Classroom allowing production staff and performers to follow the program.
    e. The audio and video monitor feeds from the Auditorium are also routed to the Studio Theatre to allow the Studio Theatre to act as either an overflow or staging space for the Auditorium.
12. AV Infrastructure. Audio (microphone level, line-level and loudspeaker level), Video, and AV Data (Cat 6 F/UTP) infrastructure is provided in support of functions described above.

D. Support Spaces
1. Theatre Classroom. In addition to a school-standard classroom AV system (by others, not in the performance AV scope) this classroom will also have audio and video program and paging feeds from the Auditorium and Studio Theatre to allow it to act as a staging area for events in those spaces.
2. Lobby. As described above the Lobby area will have audio and video program and paging.
3. Dressing Rooms. As described above the Dressing Rooms and related backstage spaces will have audio and video program and paging.
4. Shop. As described above the Shop will have audio program and paging.

PART 2 - PRODUCTS

2.1 GENERAL

A. Refer to Appendix A: Equipment Schedule. The specific products listed in the Equipment Schedule and/or shown on the drawings represent the Design Basis for the described systems. Substitutions for specific equipment will be considered only according to the conditions listed herein in the "Quality Assurance" section, and, according to any additional conditions set forth in Division 1 of the Specification.

B. Refer to "System Description", herein, and Contract Drawings and manufacturers' manuals for certain product use, assembly and mounting information.

C. For required incidental and miscellaneous products not listed in the "Equipment Schedule", the Audio Systems Contractor shall select products that satisfy the Contract Documents including "System Descriptions", "Performance Requirements", Drawings and general product descriptions that follow.

D. Incidental wording of this section shall not be construed to diminish product quantities indicated by the Equipment Schedule or other Contract Documents.

2.2 MAIN SYSTEMS AND EQUIPMENT

A. Equipment Schedule
1. See Appendix A for equipment schedule.

B. Audio Equipment
1. Digital Signal Processing (DSP)
a. Refer to “System Description” section herein for additional information.
b. Design complete signal-processing system utilizing virtual audio processing objects, within the DSP platform, to implement a fully functional system according to this specification, the drawings and the equipment schedule.
c. Submit DSP system design to Consultant for approval.
d. Program DSP with distribution and processing objects to implement a fully functioning system. Specifically, but not exclusively:
1) Main Loudspeakers
a) If applicable, include dedicated signal delays, gain controls, level controls and parametric equalizers, to implement manufacturer’s specifications for signal processing unique to the actual loudspeakers.
b) Include independent high-pass filters, signal delays, gain controls, parametric equalizers, et cetera, as required for system tuning.
c) Include limiters for protection of loudspeaker components.
2) Hearing Assistance System
a) Include signal routing and gain controls.
b) Include compression, equalization and delay.
e. Configure the DSP power up mode to resume last known state.
f. Install DSP control software on an owner furnished computer dedicated to user control of the DSP system if requested to do so.
g. For Acceptance Testing, provide a portable computer and cabling to control the DSP system from the in-house mix position at each space.
2. Loudspeakers
a. Provide rigging/mounting suitable for hanging the loudspeakers while maintaining aim of the loudspeakers according to drawings. Provide substructure to support the rigging of the loudspeakers as needed. Design rigging to allow for convenient maintenance, repair and replacement of loudspeakers without disturbing loudspeaker aim. Submit shop and field drawings. (Refer to "Submittals" section of this document.
b. Rigging/Mounting must not touch building structure in any way that produces audible vibrations when the audio system is in use. Submit shop and field drawings according this Specification.
3. Audio Patchbays, Panels, Specialty Cables and Miscellaneous Distribution Components
a. Patchbays:
1) Listed as if a single assembly provided by manufacturer. May be assembled from components at Contractor’s discretion. Follow all normalling conventions as indicated in drawings, functional descriptions, and according to good engineering practice.
2) Provide unit-type or harness-type routing to terminal block at Contractor’s discretion.
3) For Line-level patchbays, Contractor may opt for punchdown, pinned, screwed or soldered connections at his discretion; similarly for Microphone patchbays except, NO punchdowns. (Submit model number for approval by consultant).
b. Loudspeaker Patch Panel:
1) Engraved labeling must include “Use only custom cross-wired loudspeaker patch cables.”

c. Loudspeaker Patch Cables:
   1) Refer to AV drawings for custom wiring of loudspeaker patch cables.

4. Hearing Assistance System
   a. Verify with owner representatives if there are any existing RF Hearing Assistance Systems in the building.
   b. Coordinate channel assignments for each space with owner representatives.
   c. Inform Owner and Consultant if changing the system with different frequency band for selected spaces is required to avoid interference.

2.3 RECEPTACLES

A. General
1. Use specified brand and type or approved equal.
2. For each receptacle-type, use same make and model throughout the project.
3. Provide connector colors as listed in the schedule.
4. Use termination types listed:
   a. Single circuit audio signal cabling shall use soldered connections; crimp down, or other terminations not acceptable.
   b. On multi-channel audio cabling, using high-density connectors, crimp connections are preferred for convenience of maintenance.
   c. Single circuit video signal cabling shall typically use crimp connections terminated with appropriate, manufacturer recommended crimp equipment.
5. For soldered connections, use solder containing at least 2% silver.
6. For crimp connections, use appropriate, manufacturer recommended crimp equipment, used by trained and experienced personnel.

B. Audio Receptacles
1. Portable Cabling:
   a. All portable cabling shall be of appropriate high-quality professional heavy-duty grade.
   b. In-line connectors:
      1) XLR: use Neutrik, Switchcraft or ITT/Cannon Digital XLR series.
      2) RCA: use 75 ohm impedance connectors, for male use Neutrik Profi (soldered), Canare RCAP-C series or ADC CRCA series.
      3) BNC: use true 75 ohm impedance connectors by Canare, Neutrik, Belden, ADC or Kings.
      4) Multipin: (also see Drawings)
         a) For audio: use Whirlwind, Radial or ITT/Cannon Mass Connectors as indicated on the drawings.
         b) For audio, video and data combines: use Wireworks AV-2000 series connectors with ‘Broadway’ BLS latching mechanism.
2. Microphone:
   a. Use soldered connections; 3-pin or Elco/EDAC only; crimp down, direct to PCB, punch-down, or other terminations not acceptable.
   b. Microphone female chassis-mount connector:
      1) Nickel shell: NC3FD-L-1 (silver).
      2) Black Shell: Neutrik NC3FD-L-B-1 (gold).
   c. Microphone male chassis-mount connector:
      1) Nickel shell: NC3MD-L-1 (silver).
      2) Black shell: Neutrik NC3MD-L-B-1 (gold).

3. Tie Lines:
   a. Use soldered connections; crimp down, direct to PCB, or other terminations not acceptable.
   b. Female chassis-mount connector:
      1) Nickel Shell: Neutrik Combo NCJ6FI-S (silver).
      2) Black Shell: Neutrik Combo NCJ6FI-S-B (gold).
   c. Male chassis-mount connector:
      1) Nickel Shell: Neutrik NC3MD-L-1 (silver).
      2) Black Shell: Neutrik NC3MD-L-B-1 (gold).
4. Unbalanced “Auxiliary In” female chassis-mount RCA connector: Neutrik NF2D, Canare RJ-RUD or Amphenol Audio ACJB series.
   a. Use soldered connections; crimp, direct to PCB, or other terminations not acceptable.
      1) For stereo pairs use connector with red color ring for the right channel and white color ring for the left channel.
      2) For mono connectors use connector with black color ring.
5. Unbalanced “Auxiliary In” female 3.5mm stereo mini-jack: DGS Pro-Audio (Mouser Electronics Stock #161-3502). Use soldered connections, crimp down, direct to PCB, or other terminations not acceptable.
6. Intercom male chassis-mount connector:
   a. Use soldered connections; crimp down, direct to PCB, or other terminations not acceptable.
      1) Nickel Shell: Neutrik NC3MD-L-1 (silver).
      2) Black Shell: Neutrik NC3MD-L-BAG-1 (silver).
7. Loudspeaker Receptacles: Neutrik NL4MP-UC.
8. Stage-boxes for tie lines and microphones shall be furnished with pairs of XLR-F and XLR-M, as listed above, wired in parallel.
9. Multi-pin connectors:
   a. Audio only:
      1) Use Whirlwind, Radial or ITT/Cannon Mass Connectors as indicated on the drawings.
      2) Provide hinged-mounts for connectors where shown on the panel elevations.
   b. Video-only or with audio combined:
      1) Use Wireworks AV-2000 series connectors as shown in the Drawings.
      2) Provide connectors with “Broadway Latching System” (BLS) option.
10. Panel color coordination:
    a. Use brushed ‘steel’ color connectors on white and steel color AV panels.
    b. Use black anodized connectors (if available) for black color AV panels.

C. Video and RGBx:
1. BNC bulkhead connectors: Neutrik, Kings, Canare or Belden 75 ohm impedance, isolated-ground connectors.
2. BNC chassis-mount connector: Neutrik, Kings or Canare 75 ohm impedance, isolated-ground connectors.
3. Inline: Neutrik, Kings or Canare 75 ohm impedance connectors, crimped.

D. AV Data:
1. Cat 6A RJ-45 data chassis-mount connectors: Neutrik EtherCon CAT6A chassis connectors.
2. Cat 6 RJ-45 data chassis-mount connectors: Neutrik EtherCon CAT6 chassis connectors.
3. Cat 5e RJ-45 data chassis-mount connectors: Neutrik EtherCon D series or Amphenol Audio D series chassis connectors.

E. Fiber Optic:
1. Two-channel chassis-mount connectors: Neutrik opticalCON DUO chassis connectors.
2. Four-channel chassis-mount connectors: Neutrik opticalCON QUAD chassis connectors.

2.4 CABLES

A. Use specified brand and type or approved equal. See Equipment Schedule for approved permanent installation cables.

B. Plenum rated cables shall be used per NEC Article 300.22 in any space above the ceiling tile system or other concealed if it is an environmental air space.

C. For each cable-type, use same make and model throughout the project.

D. Refer to “Cable and Conduit Anomaly Notes” at the end of this Specification, if any.

E. Audio Cables
1. Individual and multi-pair microphone and line-level shielded-pair cable in conduit and racks: #24 AWG (or larger) stranded conductors, 110 ohm, AES3-rated, low capacitance (13 pf/ft. between conductors or better).
2. Individual and multi-pair microphone and line-level shielded-pair cable for portable cable, including snakes: #24 AWG stranded conductors, 110 ohm, AES3-rated, low capacitance; Belden 1800F, Gepco DS401M, Mogami W3080 or W3135, or approved equal.
   a. Cable must be constructed for portable use and high-flexibility.
   b. Black jackets only.
3. Intercom cables in conduit:
   a. For runs under 500 ft.: #20 AWG (or larger) stranded conductors; 100% aluminum polyester foil shielding; PVC jacket.
   b. For runs greater than 500 ft.: #18 AWG (or larger) stranded conductors; 100% aluminum polyester foil shielding; PVC jacket.
   c. Verify with production intercom system manufacturer for recommended cables.
4. Individual and multi-pair intercom cable for portable cable: #24 AWG (or larger) stranded conductors, 100% aluminum polyester foil shielding; Belden 8413 or 8412, Gepco MP1022 or M1042, Sheer Wire SMR202, or approved equal.
   a. Cable must be constructed for portable use and high-flexibility.
   b. Black jackets only.
5. Loudspeaker cables in conduit:
   a. All loudspeaker cable must include twisted pair construction. Non-twisted conductors are not acceptable.
      1) Main Loudspeaker Cable: #10 AWG, twisted-pair. Use also as trunk feed to branches of low-impedance loudspeakers.
      2) Effects/Stage-monitor Loudspeakers: #10 AWG, twisted-pair.
      3) Surround Effects and Fill Loudspeakers: #12 AWG, twisted-pair.
      4) Monitor/Page Loudspeaker Cable in the public spaces and backstage areas: #14 AWG, twisted-pair wire.
6. Individual and multi-pair loudspeaker twisted-pair cable for portable use, including snakes: #12 AWG, twisted-pair wire; Belden, Gepco GSC, West Penn, or approved equal.
   a. Cable must be constructed for portable use and high-flexibility.
   b. Black jackets only.

7. Lines dropped to permanently mounted loudspeaker:
   a. Lines in conduit may be extended to loudspeakers if sheathed in black where visible to public. Absent sheathing, provide extra-flexible portable cordage and black neoprene, rubber or PVC jacket.
   b. Harness all lines for a neat installation, leaving a service loop at each termination facilitating servicing loudspeakers.
8. AVC may pursue multi-pair versions of cabling for convenience of cable-pull and termination for point-to-point connections only observing cable dressing requirements specified herein.
9. Color-Coding Required: All microphone and line-level cable should be color coded with distinct colors for each signal type based on the following list: (color coding may require that multiple cable types be used)
   a. Microphone circuits
   b. Audio Tie-lines (undedicated)
   c. Line-level feeds, system feeds and installed equipment interconnection
   d. Intercom and Monitor/Page system interconnection
   e. AES clock interconnection.

F. Video Cables
1. The permanent installed precision video cables shall be precision 75 ohm impedance, and consist of solid copper center conductor and gas-injected foam dielectric, full copper braid and foil shield with PVC jacket. The cables shall be compliant with SMPTE 292M and 424M 2.97 Gb/sec. specifications.
   a. For runs up to 230 feet: #18 AWG (or larger), RG-6/U type, low attenuation (5.0 dB/100' or less at 750 MHz; and 7.3 dB/100' or less at 1.5 GHz) and low return loss.
   b. For runs up to 300 feet: #16 AWG (or larger), RG-7/U type, low attenuation (4.2 dB/100' or less at 750 MHz; and 6.1 dB/100' or less at 1.5 GHz) and low return loss).
   c. For runs up to 370 feet: #14 AWG (or larger), RG-11/U type, low attenuation (3.7 dB/100' or less at 750 MHz; and 5.5 dB/100' or less at 1.5 GHz) and low return loss.
2. Color- Coding Required: All video cable should be color coded with distinct colors for each signal type based on the following list: (color coding may require that multiple cable types be used)
   a. Video/MADI Tie-lines within functional zones (undedicated)
   b. Video/MADI Tie-lines between functional zones (undedicated)
   c. Video cables between installed equipment
   d. Video Black Burst
   e. Word Clock
   f. Dedicated MADI connection.

G. Optical Fiber
1. The permanent installation optical fiber cables shall be compliant with or exceed the latest ANSI/TIA/EIA and ISO/IEC standards.
   a. Single-Mode Optical Fiber: ISO/IEC 24702 standard OS2 type.
   b. Multi-Mode Optical Fiber: ISO/IEC 11801 standard OM3 type.

H. Antenna Cables
1. Wireless RF transmission cable in conduit: #10AWG, RG8/U type, precision 50 ohm impedance, solid copper or copper-covered aluminum center conductor, gas-injected foam dielectric, full copper braid and foil shield with PVC jacket.

I. Category Cables
1. The permanent installation Category cables shall be compliant with or exceed the latest ANSI/TIA/EIA standard.
a. Shielded Category 6 F/UTP cables in conduit: #23 AWG, 4-pair solid bare copper conductors, overall foil shielded with PVC jacket, CMR rated cables. Comply with or exceed ANSI/TIA/EIA 568C.2 Category 6 specification. Suitable for gigabit Ethernet, digital and analog video, HDBaseT, networked audio and AES/EBU applications.
b. Category 6 UTP cables in conduit: #23 AWG, 4-pair solid bare copper conductors, unshielded with PVC jacket, CMR rated cables. Comply with or exceed ANSI/TIA/EIA 568C.2 Category 6 specification. Suitable for gigabit Ethernet, digital and analog video, networked ausio and AES/EBU applications.
c. Category 5e UTP cables in conduit: #24 AWG, 4-pair solid bare copper conductors, unshielded with PVC jacket, CMR rated cables. Comply with or exceed ANSI/TIA/EIA 568C.2 Category 5e specification. Suitable for gigabit Ethernet, digital and analog video, networked audio and AES/EBU applications.

J. DC Control Cables
1. Provide multi-conductor, stranded cable as necessary according to good engineering practice.

K. Serial Data Cables
1. Provide stranded shield-pair cable as necessary according to good engineering practice. Verify cable type to be adequate for length of signal run.

2.5 MISCELLANEOUS EQUIPMENT

A. General
1. Install patch-cord holders near all patchbays at fixed rack locations.
2. Provide security covers over all equipment with front panel controls intended for semi-fixed settings and not capable of software security.
3. Provide foam padding for the rack drawers where microphones are stored.

B. Panels
1. Maintain a uniform appearance of panels throughout the project. Specifically, but not exclusively, use this guideline if panels are fabricated by multiple manufacturers.
2. Fabricate AV panels and other device boxes cover plates from 5052-H32 or 6061-T6 aluminum sheet no less than 0.090” thick for standard “ganged” outlet boxes of three gangs or less, and not less than 0.120” elsewhere.
3. Aluminum panels:
a. For black aluminum panels, grain on horizontal axis and anodize.
b. Finish in epoxy-based paint only if directed by, and to color approved by Architect.
4. Engrave all nomenclature and graphics.
a. If mill engraved, ink-fill.
b. If laser engraved, submit sample of text color versus background.
5. Provide panel colors (and connector colors, see elsewhere herein) according to the schedule. The color combinations are:
a. Black panel, white lettering – generally in stage areas and in the audience chamber, and on equipment racks
b. Brushed steel (or aluminum), clear coated, with black lettering - generally in public spaces (confirm with architect).
c. See also panel schedule at EA drawings.

d. Use black connectors at black panels, brushed nickel connectors at white and steel color panels (if applicable; for instance, video bulkhead only come in brushed nickel, but XLR connectors come in black and brushed nickel).

6. Contractor may submit plastic strata for approval.
   a. Gravoglass 2-plex or Gravograph Ultra panels of 1.5 mm thickness are acceptable.
   b. For these panels, use 14 Ga steel as substrate panel.
   c. Use glue recommended by the manufacturer.
7. See Submittals for submission of one panel of each color combination for approval.

C. Equipment Racks
1. Provide internal 120 V.A.C. wiring and power outlets as required for equipment and such as not to overload branch circuits.
2. Fill all unused panel spaces with blank solid or vent panels, shelves and drawers where indicated on the drawings. Observe cooling and ventilation requirements of surrounding equipment for choice of panel.
3. Use tamper-proof rack screws: Lowell SRV (or equivalent).
4. Provide adequate service loop (minimum 5’-0”) and strain relief for installed cabling to equipment racks. Maintain separation of signal types when routing and bundling cable from pull boxes to the racks.
5. Use Velcro for cable dressing, Tie-wraps are specifically prohibited.
6. Fixed-in-Place Equipment Racks:
   a. Provide filtered, ventilation fan panels for each equipment rack in the Amplifier Rack Room.
   b. Locate racks so that equipment may be operated from the front and serviced from the rear without moving the racks (as conduits shall render them immovable).
      1) Wherever possible, install racks with a minimum of 36” clear in front and behind. Do not install with less than 30” in front and behind prior to seeking direction from Architect and Consultant.
   c. Carefully coordinate with Electrical Contractor to assure conduit entries into racks occur at appropriate locations on racks.
   d. Provide sides, doors and tops.
   e. Provide hinged and lockable back panels for all racks.
   f. Seal, where appropriate, openings to racks to ensure that no false air is pulled or pushed by ventilation system, whether furnished as a separate item, or as part of the internal ventilation of furnished equipment.
   g. Provide patch-cord and cable holders at each (bank of) equipment rack(s).
7. Mobile Equipment Racks and Podium/Lecterns:
   a. Bundle the umbilical cord cables. Wrap the umbilical cord with braided sleeving or use custom armored multi-cable.

PART 3 - EXECUTION

3.1 PERFORMANCE REQUIREMENTS

A. General
1. Certain of the AV System’s overall performance requirements may be checked readily by measurement.
2. The systems included in this work, as designed, are expected to meet the functional requirements stated hereinafter, based upon available data and the manufacturers’ published specifications.

3. During the Bid Phase, the Contractor shall have made himself familiar with the System Description stated hereinbefore, the overall system requirements and the capabilities of specified equipment.
4. The functional requirements stated hereinafter shall be used as a basis for evaluating requested substitutions and performing initial testing and tuning.
5. The contractor shall report obvious errors in the Contract Documents wherein such errors would preclude the possibility of fulfilling the functional requirements.
6. Aspects of the design which can only be verified by measurement of installed systems are not subject to reporting requirements. (However, the contractor is urged to share any concerns regarding the suitability of systems).
7. Upon award, Contractor shall provide labor, and major and incidental equipment and materials, required to provide complete and operating systems according to the design and the intent of the stated functional requirements.

B. Frequency Response and Sound Output:
1. Measure with “tone” controls set for flat response, using broadband calibrated pink noise applied to any microphone input for speech system or auxiliary line input for stereo system, measuring in specified bands using real-time analyzer or using specified bands of filtered pink noise centered on ANSI preferred frequencies, measuring with sound level meter.
2. Measure system acoustical performance using a calibrated real-time analyzer or an ANSI Standard Type 1 or IEC Precision Sound Level Meter set for “slow” meter damping and flat response at normal incidence, at a height of 4 feet and pointed at the loudspeakers. All interior finishes and furnishings shall be in place, and system gain shall be adjusted to provide levels of 70 to 85 dB during normal operation at the measuring locations for these tests, unless otherwise noted herein.
3. Unless restricted by the published specifications of a particular piece of equipment, or unless otherwise required by these Specifications, the following performance standards shall be met by each system:
    a. Set system gain to provide 75 to 85 dB SPL in measurement area during frequency response adjustments.
    b. Loudspeaker Systems in performance spaces working in consort: with respect to a response which is flat (0 dB) from 80 to 3,150 Hz, -1 dB at 4,000 Hz, and decreases 1 dB per one-third-octave band thereafter to -6 dB at 12,500 Hz, system response in one-third-octave bands averaged over at least six locations throughout the audience shall be adjusted to be within ±3 dB. All loudspeakers work together.
    c. Loudspeaker Systems in the backstage areas and public spaces: with respect to a response which is flat (0 dB) from 150 to 2,000 Hz, -4 dB at 4,000 Hz, and -8½ dB at 8,000 Hz, system response in octave bands averaged over at least three locations distributed throughout the areas served shall be adjusted to be within ±3 dB.
    d. Sound Output Capability: Systems shall be capable of producing peak program levels as specified below throughout the area served without objectionable distortion, buzz, or rattle, employing as test signals several samples of recorded speech and music.
        1) Performance Spaces, loudspeakers working together: 98 dB.
        2) Instructional Spaces, Loudspeaker Systems: 86 dB.
4. Electrical performance for Sound Reinforcement Systems:
    a. Frequency Response shall be +0 dB, - 0.5 dB from 20 to 20,000 Hz for any individual electronic component.
    b. Signal to Noise Ratio shall be 80 dB minimum from 20 to 20,000 Hz for any individual electronic component.
    c. Crosstalk shall be better than -60 dB from 20 to 15,000 Hz, better than -55 dB at 20,000 Hz, between adjacent channels for any individual electronic component.

d. Total Harmonic Distortion shall be less than 0.30% from 20 to 20,000 Hz for any individual power amplifier operating at rated power; less than 0.10% from 20 to 20,000 Hz for any other electronic audio component driven at maximum rated input.
e. Hum and Noise:
1) With building air-handling systems operating, hum and noise shall be inaudible at normal gain settings
2) Measured at amplifier outputs: -80 dB or better relative to rated maximum amplifier output, with minimum of six inputs, master set at normal operating levels.
f. Feedback Stability Margin:
1) Adjust all systems for optimum feedback stability margin.
g. Audio-for-Video Systems:
1) Audio Frequency Response: 50 Hz-15 kHz 0, + 3 dB.
2) Audio Wow and Flutter: 0.005% Wrms.

5. Electrical performance of NTSC Video Systems:
a. S/N (peak to RMS) unweighted dc to 4.2 MHz; 55 dB minimum.
b. Crosstalk, unweighted dc to 4.2 MHz; 45 dB minimum.
c. Frequency Response: within + 0.5 dB to 4.2 MHz.
d. Line and Field Tilt 2% maximum.
e. Differential Gain 3% maximum.
f. Differential Phase 2 degrees maximum.

6. Performance Test Signal Paths:
a. Audio:
1) Test from all source inputs (for microphones, audio tape units, et cetera) through all mixers, amplifiers, et cetera, to all signal destinations.
b. Video:
1) Test from all source inputs (for cameras, video tape units, et cetera) through all video distribution amplifiers, processors, switchers, et cetera.
c. Delineation of above signal paths shall not exempt Contractor from the responsibility of checking all paths and outlets for appropriate compliance with Performance Requirements.

3.2 INSTALLATION

A. General
1. Install equipment with all precautions necessary to prevent and guard against electromagnetic and electrostatic hum, to assure adequate ventilation, and to provide for safety of users.
2. Employ the latest and safest techniques throughout the installation.
3. Perform all work in strict conformance with the highest industry and craftsmanship standards. The following shall serve as guidelines:
a. Current broadcast standards;
b. Current recording studio practice and techniques outlined in:
1) “Handbook for Sound Engineers” by Glen M. Balou, 3rd Edition, Focal Press, 2002.
2) “Sound System Engineering” by Don and Carolyn Davis, 2nd Edition, Focal Press, 1997.
3) “Audio Systems– Design and Installation” by Phillip Giddings, Focal Press, 1990.
4) “Sound Reinforcement Handbook” by Gary Davis and Ralph Jones, Hal Leonard Publishing Corp., 1987.

5) "AV Design Reference Manual" by Bicsi & ICIA.
6) "Video Demystified, 4th Edition" by Keith Jack.

4. Install all equipment neatly, plumb, square and true to line and level except as necessary for loudspeaker or microphone aiming.
5. At Owner's discretion, repair or reimburse Owner for damage caused by any action of Contractor's employees or resulting from the process of installation.
6. Provide a safety factor of at least three for all fastening and supports for fixed equipment, cabling, and components.
7. Install all equipment, except portable equipment, such that it is held firmly in place. This shall include loudspeakers, amplifiers, cables, et cetera (an exception to this rigid mounting clause is when it is required to use resilient shock mounting to decouple a loudspeaker from the structure it is being mounted in/on).
8. Except as may be specifically indicated herein, use no fan-cooled equipment in mobile equipment racks intended for use within a performance or presentation space.
9. Mount all permanent electronic equipment and patching facilities (if any) in electronic equipment rack cabinets (or frames, according to these documents).
10. Avoid damage to cables, equipment, and wiring.
11. Provide incidentals and accessories, compatible with other equipment, necessary to meet requirements specified herein even though not specifically called out in this specification.
12. Remove dirt and debris from audio system racks, panels and junction, pull and device boxes.
13. Seal all pre-assembled equipment racks in plastic before shipping to Project Site. Maintain plastic cover when storing racks on site prior to installation to prevent damage by materials from other trades.
14. Leave job site and all equipment and materials clean and free from marks, blemishes and Contractor's debris.

B. Audio System Isolated Technical Ground (ASITG):
1. Feeds to in-rack Power Distribution are to be provided by the EC.
2. Maintain isolation between ASITG and building electrical system ground except at the Building Ground Bus connection.
3. Provide a main isolated audio ground point (MIAGP) within each bank of audio equipment racks (i.e., one rack or multiple adjacent racks). MIAGP shall consist of a copper bus bar bonded to the rack frame and of sufficient size to accommodate all secondary ground conductors. Provide a lug on MIAGP to which Electrical Contractor shall connect an insulated copper equipment grounding conductor having a maximum of 0.1 ohm total resistance between MIAGP and ground electrode connection point. If and where aluminum lugs are used with copper wire or bus bars, anticorrosive compound must be used. The AV Contractor shall be responsible for confirming technical ground is properly electrically bonded to the building technical ground system and shall report discrepancies.
4. Secondary system grounding conductors shall be provided from all racks, audio consoles, and otherwise-ungrounded audio equipment in each area, to MIAGP. Each of these grounding conductors shall have a maximum of 0.1 ohm total resistance. Alternatively, adjacent racks may be bonded together via grounding conductors terminated at lugs attached to abutting rack sides. Each such grounding conductor shall have a maximum of 0.01 ohm total resistance. Care shall be exercised to assure grounding lugs make low-resistance contact with the rack.

5. Shield Treatments:
   a. Patchbays:
      1) All audio cable shields for balanced lines from or to installed equipment shall be grounded to ASITG by a single path. Tie shields to isolated ground at the source end (i.e., equipment outputs) only. As relates to shield terminations for lines to or from patchbays:
         a) For all output jacks (generally, top row), float (i.e. do not connect) shield drains at the jacks. Leave jack sleeves of output jacks (generally, top row) unconnected and unbussed. Bus together (within the patchbay at the jacks) the sleeves of the input jacks (generally, bottom row). Connect this bus to MIAGP in rack via secondary grounding conductor. Wires between these jacks and patchbay output terminals shall have their shield drains connected at the jacks and landed at the output sleeve terminals. For patchbays preconfigured to this method, wires to and from the patchbay may have their shields terminated on the patchbay's sleeve terminal connectors, as requirements for floated shields are built into the.
         b) Tie the shields of balanced audio tie lines, used for temporary interconnection, to the ground pins of panel connectors and though to jack sleeve connections at patchbays. Do not bus together the shields of these lines either to or from patchbays.
   b. Other Shield Treatments:
      1) The shields of portable cordage, such as, microphone cables, shall be connected at both ends to cable-connector ground terminal (or pin).
      2) Insulate all cables from conduit and extraneous grounds. Do not tie the shell of cable-type microphone connectors to shield except within microphones themselves. Chassis connectors, which utilize their shells as conductors for shields (i.e. 1/4" phone jacks, 3.5mm mini-jacks, RCA jacks, et cetera), shall be insulated from their mounting plate.
      3) Maintain continuity of shields at all connecting points except as required by standard practice for 'floating' shields.
      4) Follow good engineering practice, as outlined above; deviate from these practices only when necessary to minimize crosstalk or to maximize signal-to-noise ratios in the audio and video systems; report deviations to the Architect and Consultant prior to implementation.

C. Wiring and Cables
1. Make wiring connections with rosin-core solder or mechanical connectors. Use mechanical connectors in strict conformance with the manufacturers' specifications with regard to wire gauge, wire type (stranding), insulation type and thickness, number of conductors at a single termination, terminal-screw diameter requirements, et cetera. Restrict use of 'wire nuts' to mains power wiring where acceptable to code and related sections. Wire nuts are not acceptable for audio connections.
2. "Punch-down"-type wire terminations are not allowed for microphone signal.
3. Clear all raceways, racks, and junction boxes of foreign matter and substances prior to installation of wire or cable.
4. Make no cable or wire splices inside of conduit or raceways.
5. Make no splices in any microphone lines. (Termination of a microphone line at an approved mechanical connector for making parallel wiring connections, or connection to pre-wired patch panels is not considered a 'splice').
6. Connections to rack-mounted equipment by means of phone plugs are not acceptable if the equipment has alternate connectors.

7. Use heat-shrinkable tubing to dress the shield and cable jacket wherever shielded cable is stripped-back for termination. The exception to this rule is when the cable terminates within the back shell of a single-circuit cable plug (accordingly, such terminations within multi-circuit plugs do require heat-shrinkable lead dress).
8. Install required microphone, line-level, loudspeaker, video and control wiring in conduits provided and installed by Electrical Contractor. Coordinate conduit-fill to minimize mixing of signal types. If cables of different signal types must be combined in conduits or raceways, the following schedule shall be used for determining acceptability of conduit fill:
    a. Microphone-level circuits below -30 dBu, 20 to 20,000 Hz; non-relay DC control less than 50 volts; DC power less than 30 VA into resistive loads; CATV signal less than 1000 microvolt peak-to-peak into 50 or 75 ohms, 47 to 890 MHz.
    b. Line level audio, -30 dBu to +24 dBu, 20 to 20,000 Hz; baseband and composite video, 1 volt peak-to-peak into 75 ohm, 0 to 10 MHz; color subcarrier, 0 to 4 volts peak-to-peak into 75 ohm, 3.57 to 4.43 MHz; non-relay DC control less than 50 volts; relay DC control less than 50 volts for runs less than 20 feet.
    c. Loudspeaker-level circuits, greater than +24 dBu, 20 to 20,000 Hz; relay or non-relay DC control less than 50 volts; DC power less than 60 VA; synchronous control or data wiring less than 40 volts.
    d. Baseband and composite video, 1 volt peak-to-peak into 75 ohm, 0 to 10 MHz; color subcarrier, 0 to 4 volts peak-to-peak into 75 ohm, 3.57 to 4.43 MHz; video synchronization and switching pulses, 4 volts peak-to-peak into 75 ohm; digital Video 0 to 3 GHz, 1Vp-p, non-relay DC control less than 50 volts; DC power less than 30 VA into resistive loads.
    e. AC Power alone.
    f. Additional cable combinations as approved by Consultant or specifically indicated by the Contract Documents.
9. Dress all cables within racks neatly and such that there is adequate service loop adjacent to terminations to allow at least one termination repair without unharnessing loom.
10. Install proper-fitting neoprene or nylon grommets where cables pass through holes in racks, boxes, or any other cabinetry, to prevent abrasion of the cables.
11. It is strongly recommended to test all cable lengths for serviceability before and during connection to equipment to determine if any faults have developed during the cable installation. Testing for open and short circuits shall be conducted on all cable after installation and before equipment and cable termination enclosures are closed.

D. Labels
    1. General
        a. Upon request by Owner, remove visible logos from loudspeaker systems.
        b. Affix a single, small acknowledgment plate listing “Designed By:” and “Installed By:” to one AV equipment rack in the Control Room. This plate shall list the firm name, address, phone number, email address and web site of the System Consultant and AV Systems Contractor.
        c. Apply no advertising to racks, equipment, and accessories.
    2. Wires and Cabling
        a. Label each and every cable in system with machine-printed wire tags protected by clear heat shrinkable tubing or with self-laminating “write-on” labels.
        b. Use a logically sequenced alphanumeric system, maintaining the same circuit designation from origin to destination.
        c. Use a color scheme that is legible and easy to understand.
        d. Attach wire tags to the cables such that they are easily read and the cable easily identified, usually about 1/2” from the cable end. Tag both ends of each cable.
        e. No two cables shall bear the same number.

f. Multi-paired and multi-conductor cables shall bear a single number with number and conductor colors appearing on “As-Built” record documents.
g. Ground wires need not be wire tagged.

3. Panels
   a. Clearly, logically and permanently label all custom controls, jacks and receptacles.
   b. Methods:
      1) Engrave and fill or silk screen custom rack panels.
      2) Engrave and fill receptacle box plates.
      3) Use characters at least 1/8” high on equipment mounted in rack cabinets and at least 1/4” high elsewhere, with character stroke width at least 10% of character height, wherever possible.
   c. Printed labels and embossed tape will not be accepted for labeling.
4. Racks, rack-mounted equipment and controls:
   a. Preferred method, see “Panels”.
   b. Label all rack-mounted equipment items and their controls where utilized.
   c. Engraved plastic lamicoid labels are acceptable. See “Panels” for character heights and spacing.
      1) Use simple and tasteful color scheme that is legible and easy to understand.
      2) Use uniform type face, font size and label size.
   d. Printed tape may be approved for labeling of racks, rack-mounted equipment and controls under specific circumstance(s). Submit request for approval to Consultant.
   e. Embossed tape will not be accepted for labeling.
   f. See “Panels” for character heights and spacing.

E. Polarity
1. Install all loudspeakers to exhibit uniform polarity.
2. Polarity of adjacent loudspeakers with respect to each other: a listener moving from in front of one loudspeaker to the next should sense a single apparent sound source which shifts smoothly and continuously as he moves. At midpoint, sound source should appear to be midway between loudspeakers.
3. Polarity of lines and microphones: check for uniform polarity with respect to each other, of: microphone lines; lines to loudspeaker receptacles; loudspeakers; reinforcement microphones of the same type.
4. Follow the “pin two is hot” standard for wiring ‘XLR’ terminations and ‘”tip is hot” for TRS-terminated lines.

F. Loudspeaker Components
1. Install loudspeaker systems so that loudspeaker devices may be removed and replaced from enclosures for service in the simplest possible manner.
2. Where specifically instructed to do so, provide vibration isolation (shock mounting) of all loudspeakers sufficient to insure that there is no mechanical coupling from loudspeaker to support members or structure which might limit system acoustic gain before feedback within full frequency range of sound system, or which might audibly degrade sound quality. Use isolators such as those manufactured by Mason Industries or Peabody. Contractor shall insure that all safety considerations are satisfied.
3. Provide sound insulation totaling at least one-half of the enclosure volume to inside of all metal back-cans. As a minimum, in cylindrical loudspeaker enclosures, line inside back and circumference. In rectangular loudspeaker enclosures, line inside back, top and/or bottom and left and/or right side. Commercially available, professional-grade, loudspeaker systems shall include internal sound insulation according to the manufacturer.

G. Trade Coordination
1. Make moderate moves or changes as necessary to accommodate other equipment or preserve symmetry and pleasing appearance without claim for extra payments.
2. Obtain approval from Consultant and Owner's Representative before making changes necessitated by field conditions.
3. Cooperate with other trades to achieve well-coordinated progress and satisfactory final results.

3.3 INITIAL TESTING AND ADJUSTMENTS

A. Equipment
1. Provide necessary calibrated test equipment.

B. Settings and Tuning
1. Adjust settings or modify components as necessary to achieve system performance conforming to Contract Documents.

C. Tests
1. Upon completion of installation, perform the following initial tests and record results:
a. Absolute Impedance
1) Measure impedance of each loudspeaker line at amplifier location at 250 Hz, 1 kHz; 8 kHz.
2) With lines disconnected from their destination, measure resistance in lines to microphone, auxiliary and line inputs with receptacles open and short-circuited.
b. Mechanical
1) Verify integrity of support provisions.
2) Verify absence of debris of any kind, tools, et cetera.
c. Power and Isolated Ground
1) Verify isolation of Audio System Isolated Technical Ground from raceway and building electrical ground.
2) Verify integrity of signal-ground and Audio System Isolated Technical Ground connections.
3) Verify proper provision of AC power to devices and equipment.
d. Signal Wiring and Cables
1) Verify absence of continuity in XLR cables between pin #1 and connector shell. Modify wiring of cables that do not conform to this standard.
2) Verify integrity of insulation, connections and shield terminations.
3) Verify integrity of soldered connections including absence of solder splatter, solder bridges and cold-solder joints.
4) Verify routing and dressing of wire and cable as neat and in accordance with good engineering practice. Correct installation conditions that do not meet these requirements.
5) Verify point-to-point continuity of all signal and control wiring and cables.
6) Verify conformance with wire designations on "As- Built" wiring diagrams.
7) Test microphones, loudspeakers and cables for proper polarity, correcting any discrepancies found.
e. AV Cable Infrastructure
1) Test all AV cable infrastructure including terminations within the project.
a) In most cases, cable will be terminated to an AV panel or patchbay at one end and another patchbay or connector at the other end. Test all cables after they are terminated using the contacts of the termination as test connection points.

b) If a cable fails an applicable test, then it must be disconnected from the termination and tested independently to determine whether the cable itself or the termination/connector is at fault. The results of this diagnostic test must be clearly stated in the Testing Report.

2) Microphone lines:
   a) All microphone cables, connectors, terminations, patchbays and patch cords must be capable of AES3-2003 signal transmission.
   b) Required tests for all microphone lines:
      (1) Length in feet.
      (2) Continuity of all conductors, including the shield/drain wire.
      (3) Freedom from short circuits.
      (4) Total capacitance between conductors: Using cap./ft. x length measured across open conductors, tolerance shall be + 15%/-25% of rated capacitance for subject length.
      (5) Impedance: Verify conformance with Audio Engineering Society standard AES3-2003.
3) Line-level audio tie-lines, line feeds and system feeds, and intercom cabling:
   a) All line–level cables, connectors, terminations, patchbays and patch cords, except intercom cabling, must be capable of AES3-2003 signal transmission.
   b) Required tests for all line-level audio tie lines, line feeds and system feeds are as described for microphone lines.
   c) Required tests for intercom cabling:
      (1) Continuity of all conductors, including shield/drain wire.
      (2) Freedom from short circuits.
4) Loudspeaker feeds:
   a) Required tests for loudspeaker level cabling:
      (1) Length in feet.
      (2) Continuity of all conductors.
      (3) Freedom from short circuits.
      (4) Total resistance: Using Ohms/ft. x length measured through one conductor and back on the other, tolerance shall be no more than + 15% of rated DC resistance for subject length.
5) Coaxial Cables:
   a) All coaxial cable runs must be capable of MADI and HD-SDI video transmission over the distances within the venues and between the venues.
   b) All video cables, connectors, terminations, patchbays and patch cords must be compatible with the SMPTE 424M-2006 standard for 2.97Gbit/sec. transmission of uncompressed HD-SDI video.
   c) Required Tests:
      (1) Length in feet.
      (2) Continuity of all conductors.
      (3) Freedom from short circuits.
      (4) Total resistance: Using Ohms/ft. x length measured through one conductor and back on the other, tolerance shall be no more than + 10% of rated DC resistance for subject length.
      (5) Total capacitance between conductors: Using cap./ft. x length measured across open conductors, tolerance shall be no more than + 10% of rated capacitance for subject length.

(6) Verify conformance with SMPTE 424M-2006, HD-SDI specification.

6) AV Data (F/UTP) and other Category UTP Cable Connections:
   a) All “AV Data” cables, connectors, terminations, patchbays and patch cords must be compatible with the latest ANSI/TIA/EIA-568 standard for Category 6 F/UTP standard.
   b) All F/UTP and UTP cables, connectors and terminations used for transmitting audio/video/control signals with dedicated equipment must be compatible with the latest ANSI/TIA/EIA-568 Category 5e, Category 6 UTP or Category 6 F/UTP standards based on the specification of the equipment.
   c) Required Tests:
      (1) Length in feet.
      (2) Conformance with the latest ANSI/TIA/EIA standards for Category 5e/6 UTP and F/UTP testing requirements, including but not limited to NEXT (Near End Crosstalk), Structural Return Loss, attenuation, open, shorts and characteristic impedance.
7) Fiber Optic Cables:
   a) All single-mode fiber equipment must allow the transmission of the specified signal types, such as HD-SDI video.
   b) All multi-mode fiber equipment must allow the transmission of the specified signal types, including MADI-over-fiber and DP-over-fiber.
   c) Required tests for all SMPTE fiber infrastructure:
      (1) Length in feet.
      (2) Continuity of copper conductors.
      (3) Freedom from short circuits in copper conductors.
      (4) Verify conformance with ANSI/TIA/EIA-526-7 Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant.
   d) Required tests for all non-SMPTE single-mode fiber infrastructure:
      (1) Length in feet
      (2) Verify conformance with ANSI/TIA/EIA-526-7 Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant.
   e) Required tests for all multi-mode fiber infrastructure:
      (1) Length in feet.
      (2) Verify conformance with ANSI/TIA/EIA-526-14-B Measurement of Optical Power Loss of Installed Multi-Mode Fiber Cable Plant.

f. Hum and Noise Level
   1) Adjust mixer/switcher input gain controls for 0 dB reading with pink noise at -55 dBu level at microphone input; 0 dBu at line level input.
   2) Without changing gain, terminate microphone and line-level inputs with shielded resistors of 150 and 1,000 ohm, respectively.
   3) Terminate power amplifier outputs with power load resistors matching nominal impedance of output terminals used in System.
   4) With amplifiers at full power, measure overall hum and noise level at each power amplifier output.
      a) Acceptable noise level: 80 dB below rated output of amplifier, minimum.

g. Electrical Distortion: (Only required during acceptance testing in the event of the use of non-approved equipment or evident audible electrical distortion.)
   1) Adjust mixer/switcher input gain controls as described for “Hum and Noise Level” tests.
   2) Terminate power amplifier outputs as described for “Hum and Noise Level” tests.

3) Apply 800 Hz sine-wave signal from oscillator having less than 0.5% total harmonic distortion to line-level input at level required to produce measured full amplifier output.
4) Measure distortion with distortion analyzer or observe waveform on oscilloscope to ascertain that distortion is less than that specified.
a) Total Harmonic Distortion: less than 0.20% max. from 20 Hz to 20 kHz.

h. Buzzes, Rattles, and Acoustic Distortion
1) Apply sine-wave sweep from 30 to 8,000 Hz at 6 dB below rated power amplifier output voltage.
2) Listen carefully for buzzes, rattles and objectionable distortion in loudspeaker systems and room furnishings, fixtures and finishes.
3) Remedy causes of objectionable electronic or loudspeaker distortion.
4) If within these systems remedy causes of buzzes or rattles.
5) If within room furnishings, fixtures or finishes, promptly notify Architect, Consultant and General Contractor indicating cause and suggesting corrective procedures.
6) Work with other trades to correct problems.

i. Basic video components when tested should read:
1) Looking at NTSC Bars the overall levels should read
a) Luminance: 100 IRE.
b) Sync: 40 IRE.
c) Burst: 40 IRE.
2) A more detailed look of the color information:

Color	Luminance (IRE)	Chrominance Level IRE
White	100.0	0.0
Yellow	89.5	82.8
Cyan	72.3	117.0
Green	61.8	109.2
Magenta	5.7	109.2
Red	35.2	117.0
Blue	18.0	82.8
Black	7.5	0.0

3) When testing each video line the NTC-7 Combination Test signal for NTSC, which contains a white flag, Multi-burst and a modulated pedestal signal, should have minimal roll off across the band from .4MHz to 4.2MHz.

j. Provide report two weeks before site visits and check-out(s).

2. Upon completion of installation, perform the following verifications, record results, indicate date and name of verifier(s):
a. Parasitic Oscillation and RF Pickup.
b. Set up system for typical modes of operation (i.e., microphones connected, auxiliary audio source connected, control system connected, et cetera).
c. Use 10 MHz bandwidth oscilloscope and loudspeaker monitoring.
d. Check to ensure that system is free of spurious oscillation, RF pickup in absence of input signal; also with system driven momentarily to full output at 160 Hz.
e. Remedy causes of parasitic oscillation and RF Pickup.
f. Report results two weeks before final check-out.

3. Overall Performance
   a. Measure performance to verify conformity with respective performance specifications herein.
4. Gain Control Settings
   a. Adjust gain controls on rack-mounted equipment for optimum signal-to-noise and signal balance. Place temporary marks on settings using small pressure-sensitive arrows (preferred) or pressure-sensitive dots with indicating line. “White-Out”, masking tape and other slipshod methods are not acceptable.
5. Report
   a. Upon completion of above tests and necessary adjustments, submit two copies of a written report presenting test results, including numerical values where necessary, for review by the Architect/Engineer prior to demonstration and acceptance testing.
6. Certification
   a. With the above report, submit written notice that the installation conforms to specifications, is complete, and is ready for inspection and testing by representatives of the Owner, Architect and Consultant.

D. Acceptance Testing and Demonstration of Completed Installation
1. Upon approval of the above report, and at a time set by the Owner, demonstrate operation of each major component, using all input, control, amplification, and projection equipment. After demonstration, assist as required in the following acceptance tests by representatives of the Owner.
2. To comply with Project Schedule and to avoid conflict with work of other sections, testing procedures may be required by Consultant to be performed at any hour of day or night. With a minimum of three-day notice of Acceptance Testing, provide specified personnel and equipment at any time during Acceptance Testing without claim for additional labor or other costs.
3. Provide services of designated supervisor and an adequate number of technicians familiar with Work of this Section as required to comply with Project Schedule.
4. Provide the following:
   a. Tools, as required for performance of adjustment and corrections to this Work.
   b. Spare wire and connectors and specialized connector tools if applicable.
   c. Ladders, scaffolding, lifts required to access sound system devices, connection points, junction boxes, including clusters.
   d. Test equipment specified, used for Initial Testing and Adjustments.
   e. A Complete set of latest stamped and actioned submittals for reference.
   f. A Complete set of Shop Drawings and Initial Testing Reports.
   g. Complete set of manufacturer’s original operation, instruction and service manuals for each equipment item for reference.
5. Equipment Tests
   a. All aspects of the AV installation are subject to testing by the Owner or Owner's representatives to determine compliance with project specifications. Non-compliant components or systems shall, at the Owner's discretion, be corrected or replaced at the AV Contractor's expense. The AV Contractor may appeal Owner's test results by providing proof-of-compliance to be considered by Owner. Owner's testing notwithstanding, AV Contractor shall test all systems and components for compliance with project specifications and to assure that provided components meet the manufacturers' published specifications. The AV Contractor will report findings of non-compliance with manufacturer’s specifications to the manufacturer, Owner and Consultant.
   b. If need for adjustment becomes evident during demonstration and testing, the Contractor’s work shall be continued until the installation operates properly in the opinion of the Consultant.

c. If final acceptance is significantly delayed because of defective new equipment or because of installation not in accordance with Contract Documents, the Contractor shall pay for all additional time and expenses of the Owner's representatives during any resultant extensions of the acceptance-testing period.

6. Listening Tests shall consist of subjective evaluations by observers listening at various positions under various operating conditions, using speech, music and recorded program material.

3.4 CLOSE-OUT

A. Punch List
1. Perform required remedial work, without claim for additional labor or other costs. Where required, re-test and submit revised Test Report.
2. Notify Consultant and Owner's Representative of completion of Punch List.

B. Training and instruction
1. Provide on-site training sessions to Owner in operation of system with various user groups.
   a. Renovation Spaces: provide up to three, four-hour sessions.
   b. Expansion Space: provide up to four, four-hour sessions.
2. Provide training and instruction by personnel thoroughly familiar with systems and infrastructure provided.
3. Submit session outline and copies of "handouts" for review by Consultant 10 business days prior to scheduled sessions. Impromptu training which may occur prior to submittal and approval of training docs will not be considered as fulfilling this requirement. Instruction shall include:
   a. Demonstration of purpose for, and operation of, each component and associated infrastructure.
   b. Review of functional diagrams and Owner's manual.
   c. Demonstration and explanation of operation of system controls and components including functional variations.
   d. Attendance at minimally one event involving major use of each specified systems and provision of any helpful suggestions that may be appropriate.

C. Warranty
1. Submit one-year warranty dated to begin with Acceptance of the Work of this Section.
2. Submit proposal for one year and three years of additional, continued warranty and maintenance service.

3.5 OWNER'S RIGHT TO USE EQUIPMENT

A. Acceptance of the Work of this Section shall occur after completion of corrections and adjustments required by "Punch List" (as generated during Demonstration and Acceptance Testing of Completed Installation).

B. Owner reserves the right to use equipment, material and services provided as part of Work of this Section, prior to Acceptance, without incurring any obligation to Accept any equipment or completed systems until Punch List work is complete and systems comply with Contract Documents.

APPENDIX A: BASE EQUIPMENT SCHEDULE

A.1 GENERAL DESCRIPTION

A. Bidders to confirm all model numbers, quantities, and accessories.

B. Preserve rack space and infrastructure for add alternates.

C. Provide incidentals and accessories, compatible with other equipment, necessary to meet requirements specified herein even though not specifically called out in this specification.

A.2 SPECIFIED EQUIPMENT, BASE SYSTEM

	Description	Manufacturer	Model	Qty
	AUDITORIUM			
	In-Room Equipment			
	Loudspeaker, constant curvature, narrow vertical	L'Acoustics	A15i Focus	6
	Loudspeaker, constant curvature, wide vertical	L'Acoustics	A15i Wide	2
	Loudspeaker, subwoofer, cardioid	Fulcrum Acoustic	CS118	4
	Loudspeaker, constant curvature, narrow vertical	L'Acoustics	A10i Focus	4
	Loudspeaker, constant curvature, wide vertical	L'Acoustics	A10i Wide	1
	Loudspeaker Fly Bar	L'Acoustics	A15 Bump	2
	Loudspeaker Fly Bar	L'Acoustics	A10 Bump	1
	Loudspeaker, small format	L'Acoustics	X4i	7
	Loudspeaker, small format	L'Acoustics	5XT	4
	Loudspeaker bracket	L'Acoustics	X-U4i	7
	Loudspeaker bracket	L'Acoustics	ETR5	4
	Loudspeaker, custom rigging (stage edge mount)	Custom by AVC	As needed	7
	Loudspeaker, custom rigging (subwoofer rigging)	Custom by AVC	As needed	4
	Loudspeaker, custom rigging (main arrays)	Custom by AVC	As needed	3
	Loudspeaker, custom rigging (under-balcony mounting)	Custom by AVC	As needed	4
	Digital Mixing Console	Yamaha Pro Audio	QL5	1
	Console Goose Light LED	Yamaha Pro Audio	LA1L	2
	Cable, Patch, Console Digital (confirm part #)	Whirlwind USA	MTD-0-6-C6A-020	1
	Cable, Patch, Console Analog 20x8 (28-pair) XLR-MassW6	Whirlwind USA	TBD	1
	Headphones	Sony	MDR-7506	1

	Description	Manufacturer	Model	Qty
	IR Illuminator	Univivi	U8R	2
	Microphone, Recording, Fixed ORTF Assembly	Schoeps	148003	1
	Cable, Microphone, Extension + Breakout, 5-pin	Schoeps	152202 + 152209	1
	Screen, Batten Flown. 16:10, 340" diag, PS1.0 Surf	Da-Lite	Contact manufacturer	1
	Touch-panel 8-in Wired, Table Top	QSC	TSC-80TW-G2-BK	2

Booth Equipment

	Desk, Rolling, ADA Adjustable	Geekdesk	Geekdesk V3 with casters	1
	Camera PTZ	Vaddio	RoboShot30 HDBT	1
	Camera Fixed HD/SDI	Marshall Electronics	CV350-10XB	1
	Accessory, Camera, Mount	Vaddio	As needed	1
	Accessory, Camera, Mount	Marshall Electronics	As needed	1
	Projector WUXGA 1DLP 18k lm	Digital Projection	M-Vision LASER 18K	1
	Decoder, Video	AMX	NMX-DEC-N2322	1
	Projector Lens	Digital Projection	***117-463***	1
	Projector Ceiling Mount Fixed	Pro-Mounts, Chief, or Premier	as needed	1

Stage Rack

	Stage Rack	Middle Atlantic	DWR-35-22	1
	Rack Accessories	Middle Atlantic	Power distro & top fan kit	Lot
	Digital Stage Box 16x8	Yamaha Pro Audio	Rio 1608D	1
	Digital Preamplifier	Focusrite	Red4Pre	1
	Remote D.S.P. I/O	QSC	IO Frame	1
	D.S.P. Analog Input Card	QSC	CIML4	4
	Patch Bay, Audio, 2x26, solder	Audio Accessories	612A/Type-3	2
	Patch Cable, Audio, 12" LF	Audio Accessories	621B	10
	Patch Cable, Audio, 24" LF	Audio Accessories	622A	10
	Patch Cable Holder	Audio Accessories	PCH-X	2
	Patch Panel, RF/HA Antenna	Custom by AVC	Per Drawing	1
	Patch Cable, Antenna	Custom by AVC	As needed	3
	Patch Bay, Video, 16x2, 2u	Audio Accessories	BNC-32	2
	Patch Cable, Video, BNC 24"	Audio Accessories	VBNC-24	16
	Video, HD/SDI DA, 1x8	Black Magic Designs	MiniCon Distro SDI4K	1
	Switch, D-Audio/D-Video/Control, 48P Managed POE	Luxul	XMS-7048P	1
	Switch, D-Audio/D-Video/Control, 24P Managed POE	Luxul	AMS-4424P	1
	Port, Uplink Fiber SFP+	Luxul	10G-MM-DX-LC	4
	Switch, Control, 24P Managed	Cisco	SG350-28	1
	Intercom Termination Panel	Custom by AVC	As needed	1
	Patch Bay, Data, 2x24, Shielded	BlackBox	JPM816A-HD	1

	Description	Manufacturer	Model	Qty
	Patch Bay, Data, 1x24, Shielded	BlackBox	JPM814A	1
	Patch Cable, RJ45, STP, 2ft	BlackBox	EVNSL0605MS-0002	12
	Rack Panels, Custom, Efx/Mon Destination Patch	Custom by AVC	Per drawing	1
	Patch Cable, Loudspeaker	Custom by AVC	Per drawing	12
	Rack Accessories, Panel Light	Littlite	RL-10-D-LED	2
	Rack Sliding Shelf	Middle Atlantic	SS	1
	Power Distro, Convenience	Tripp-Lite	RS-1215-RA	1
	Rack Panel, Blank/Brush as needed	Middle Atlantic	As required, lot	1

Mix Rack

	Mix Rack	Middle Atlantic	SRSR-X-15	3
	Rack Accessories	Middle Atlantic	Power distro	Lot
	Rack Fans	Middle Atlantic	QBP-2	3
	Remote D.S.P. I/O	QSC	IO Frame	1
	D.S.P. Analog Input Card	QSC	CIML4	3
	D.S.P. Analog Output Card	QSC	COL4	1
	Recorder, Network Audio	Tascam	SS-R250N	1
	Recorder I/O Card, Dante	Tascam	IF-DA2	1
	Patch Bay, Audio, 2x26	Audio Accessories	WEP-262EO-SH-JSK	2
	Patch Cable, Audio, 12” LF	Audio Accessories	621B	6
	Patch Cable, Audio, 24” LF	Audio Accessories	622A	6
	Blu-Ray/DVD Player w/RS232	Denon	DN-500BD	1
	Accessory, Rackmount for Blu-Ray	Middle Atlantic	As needed	1
	Receiver, Wireless Video	Extron	250 W US	1
	Recorder, Video Streaming	Extron	SMP-351-3GSDI 60-1324-02	1
	Monitor, Confidence, SDI	Black Magic Designs	SmartView Duo	1
	Video, HD/SDI DA, 1x8	Black Magic Designs	MiniCon Distro SDI4K	1
	Rackmount Keyboard/Monitor	Tripp-Lite	B021-000-19-HD	1
	Rack Panel, Computer Mount	Custom by AVC	As needed	1
	Computer, Control & Conference	TBD	OFE	1
	Patch Bay, Video, 16x2, 2u	Audio Accessories	BNC-32	1
	Patch Cable, Video, BNC 24”	Audio Accessories	VBNC-24	8
	Video Switch, HDMI 6x1	Extron	SW6 HD 4K PLUS	1
	Video DA 1X2	Extron	DA2 HD 4K PLUS	1
	Control System Converter	Moxa	NPORT 5610-8-DT	1
	Encoder, Video	AMX	NMX-ENC-N2312	1
	Decoder, Video	AMX	NMX-DEC-N2322	1
	Hearing Assistance, Modulator, RF	Listen Technologies	LT-800-072-01	1
	IR or RF Transmitter Rack Mount	Listen Technologies	LA-326	1
	Hearing Assistance Wi-Fi Bridge	Listen Technologies	LW-100P-02	1
	Patch Bay, Data, 1x24, Shielded	BlackBox	JPM814A	1
	Patch Cable, RJ45, STP, 2ft	BlackBox	EVNSL0605MS-0002	8
	Intercom Termination Panel	Custom by AVC	As needed	1
	Switch, D-Audio/D-Video/Control, 24P Managed POE	Luxul	AMS-4424P	1

	Description	Manufacturer	Model	Qty
	Port, Uplink Fiber SFP+	Luxul	10G-MM-DX-LC	2
	Switch, Control, 28P Managed	Cisco	SG350-28	1
	Patch Cable Holder	Audio Accessories	PCH-X	2
	BlueTooth Receiver (custom panel)	Attero Tech	UND610-BT	1
	Wireless Mics, Receiver	Shure	ULXD4Q	3
	Rack Panel, Blank/Brush as needed	Middle Atlantic	As required, lot	1
	Video, Camera Controller	Vaddio	OneLink Bridge	1
	Rack Accessories, Panel Light	Littlite	RL-10-D-LED	2
	UPS	Middle Atlantic	UPS-S1500R	1

Booth Rack

	Stage Rack	Middle Atlantic	DWR-16-22	1
	Rack Accessories	Middle Atlantic	Power distro & top fan kit	Lot
	Patch Bay, Video, 16x2, 2u	Audio Accessories	BNC-32	1
	Patch Bay, Video, 16x1, 1u	Audio Accessories	BNC-16	1
	Patch Cable, Video, BNC 24”	Audio Accessories	VBNC-24	16
	Video, HD/SDI DA, 1x8	Black Magic Designs	MiniCon Distro SDI4K	1
	Switch, D-Audio/D-Video/Control, 24P Managed POE	Luxul	AMS-4424P	1
	Switch, D-Audio/D-Video/Control, 24P Managed POE	Luxul	AMS-4424P	1
	Port, Uplink Fiber SFP+	Luxul	10G-MM-DX-LC	2
	Switch, Control, 24P Managed	Cisco	SG350-28	1
	Intercom Termination Panel	Custom by AVC	As needed	1
	Patch Bay, Data, 1x24, Shielded	BlackBox	JPM814A	1
	Patch Cable, RJ45, STP, 2ft	BlackBox	EVNSL0605MS-0002	12
	Rack Accessories, Panel Light	Littlite	RL-10-D-LED	1
	Rack Drawer, 3u	Middle Atlantic	D3	2
	Rack Panel, Blank/Brush as needed	Middle Atlantic	As required, lot	1

STUDIO THEATRE

In-Room Equipment

	Loudspeaker, 8” 3-way, 60x90	Fulcrum Acoustic	DX896	2
	Loudspeaker, custom rigging (suspend from catwalk)	Custom by AVC	As needed	2
	Loudspeaker, compact subwoofer	Fulcrum Acoustic	US208	2
	Digital Mixing Console	Yamaha Pro Audio	QL1	1
	Console Goose Light LED	Yamaha Pro Audio	LA1L	1
	Cable, Patch, Console Digital (confirm part #)	Whirlwind USA	MTD-0-6-C6A-020	1
	Desk, Rolling, ADA Adjustable	Geekdesk	Geekdesk V3 with casters	1
	Headphones	Sony	MDR-7506	1
	IR Illuminator	Univivi	U8R	2
	Microphone, Line Gradient	Audio Technica	U857QU	1
	Camera PTZ	Vaddio	RoboShot30 HDBT	1

	Description	Manufacturer	Model	Qty
	Accessory, Camera, mount	Vaddio	As needed	1
	Camera Fixed HD/SDI	Marshall Electronics	CV350-10XB	1
	Accessory, Camera, Wall Mount	Marshall Electronics	As needed	1
	Projector WUXGA 1DLP 9k lm	Panasonic	PT- RZ970L	1
	Projector Lens	Panasonic	***ET-DLE250***	1
	Decoder, Video	AMX	NMX-DEC-N2322	1
	Projector Iso Enclosure	Draper	Silent Partner B	1
	Motorized Screen 16:10, Tab-Tensioned, 100”x160” (black case)	Da-Lite	Custom version of 21867L	1
	Touch-panel 5in Wired Wall-mount	QSC	TSC-55w-G2	2

Studio Rack

	Studio Rack	Middle Atlantic	WR-44-32	1
	Rack Accessories	Middle Atlantic	Power distro & top fan kit	Lot
	Digital Stage Box 16x8	Yamaha Pro Audio	Rio 1608D	1
	Remote D.S.P. I/O	QSC	IO Frame	1
	D.S.P. Analog Input Card	QSC	CIML4	2
	D.S.P. Analog Output Card	QSC	COL4	1
	Patch Bay, Audio, 2x26	Audio Accessories	WEP-262EO-SH-JSK	1
	Blu-Ray/DVD Player w/RS232	Denon	DN-500BD	1
	Accessory, Rackmount for Blu-Ray	Middle Atlantic	As needed	1
	Receiver, Wireless Video	Extron	250 W US	1
	Recorder, Video Streaming	Extron	SMP-351-3GSDI 60-1324-02	1
	Monitor, Confidence, SDI	Black Magic Designs	SmartView Duo	1
	Video, HD/SDI DA, 1x8	Black Magic Designs	MiniCon Distro SDI4K	1
	Rackmount Keyboard/Monitor	Tripp-Lite	B021-000-19-HD	1
	Rack Panel, Computer Mount	Custom by AVC	As needed	1
	Computer, Control & Conference	TBD	OFE	1
	Patch Bay, Video, 16x2, 2u	Audio Accessories	BNC-32	1
	Patch Bay, Video, 16x1, 1u	Audio Accessories	BNC-16	1
	Patch Cable, Video, BNC 24”	Audio Accessories	VBNC-24	8
	Video Switch, HDMI 6x1	Extron	SW6 HD 4K PLUS	1
	Video DA 1X2	Extron	DA2 HD 4K PLUS	1
	Control System Converter	Moxa	NPORT 5610-8-DT	1
	Encoder, Video	AMX	NMX-ENC-N2312	1
	Decoder, Video	AMX	NMX-DEC-N2322	1
	Hearing Assistance, Modulator, RF	Listen Technologies	LT-800-072-01	1
	IR or RF Transmitter Rack Mount	Listen Technologies	LA-326	1
	Hearing Assistance Wi-Fi Bridge	Listen Technologies	LW-100P-02	1
	Patch Bay, Data, 1x24, Shielded	BlackBox	JPM814A	1
	Patch Cable, RJ45, STP, 2ft	BlackBox	EVNSL0605MS-0002	8
	Intercom Termination Panel	Custom by AVC	As needed	1
	Switch, D-Audio/D-Video/Control, 48P Managed POE	Luxul	XMS-7048P	1
	Switch, D-Audio/D-Video/Control, 24P Managed POE	Luxul	AMS-4424P	1
	Port, Uplink Fiber SFP+	Luxul	10G-MM-DX-LC	2

	Description	Manufacturer	Model	Qty
	Switch, Control, 28P Managed	Cisco	SG350-28	1
	Patch Cable Holder	Audio Accessories	PCH-X	2
	BlueTooth Receiver (custom panel)	Attero Tech	UND610-BT	1
	Wireless Mics, Receiver	Shure	ULXD4Q	1
	Rack Panels, Custom, Efx/Mon Destination Patch	Custom by AVC	Per drawing	1
	Rack Panel, Blank/Brush as needed	Middle Atlantic	As required, lot	1
	Video, Camera Controller	Vaddio	OneLink Bridge	1
	Rack Accessories, Panel Light	Littlite	RL-10-D-LED	2
	Power Panel, Button Control Panel	Lyntec	SS-2LRP	1
	UPS	Middle Atlantic	UPS-S1500R	1

SUPPORT SPACES

Lobby/Backstage/Booths

	Display, Video, Commercial Grade, 65"	Planar	EP6524K	3
	Decoder, Video	AMX	NMX-DEC-N2322	3
	Display, Video, Commercial Grade, 40" W/Tuner	Samsung	HG40NJ478MFXZA	5
	Wall Box for Video Display Devices	FSR	PWB-320-TrK	8
	Adapters/Device Mounts for Video Wall Box	FSR	As needed	8
	Mount, Video Display, Wall, Fixed, Large	Pro-Mounts, Chief, or Premier	UF-PRO310	3
	Mount, Video Display, Wall, Fixed, Medium	Pro-Mounts, Chief, or Premier	UF-PRO210	5
	Loudspeaker, Ceiling, 70V	Atlas	SD72W	15
	Loudspeaker, Tile Bridge/Baffle/Back Cans	Atlas	As needed	15
	Touch-panel 5in Wired	QSC	TSC-55W-G2	2
	Loudspeaker, Wall Mount, 70V	Community	DS5	2
	Microphone, PTT	Shure	514B	2
	Loudspeaker, Ceiling, Pendant, 70V	Community	DP6	4
	Loudspeaker, Ceiling, 70V	Community	D4	29
	Volume Control	Atlas	AT-35PA	10

Main Rack

	Power Panel, Sequencing	Lyntec	MSP-341-24 (225A MB)	1
	Customize this panel with 30A/120V breakers in place of 4 ea. of the regular 20A/120V breakers.			
	Main Rack	Middle Atlantic	WRK-44SA-32	1
	Rack Accessories	Middle Atlantic	Power distro & top fan kit	Lot
	Power Switch	*Lyntec*	*SS-2LRP*	*2*
	Control System Converter	*Moxa*	*NPORT 5250A*	*1*
	DSP, Open Architecture, Card Frame	QSC	Core 510i Kit	1

	Description	Manufacturer	Model	Qty
	DSP, Open Architecture, Analog Input Card	QSC	CIML4	1
	DSP, Open Architecture, Analog Output Cad	QSC	COL4	3
	DSP, Open Architecture, Digital I/O Card	QSC	CIAES4	2
	DSP, Open Architecture, Digital I/O Card	QSC	CDN64	1
	Controller/Amplifier, 4 Channel, Device-Specific, 4kW nominal	L'Acoustics	LA4X	5
	Amplifier, Analog, 8 Channel, 8kW nominal	PowerSoft	Ottocanali 8K4	1
	Controller/Amplifier, 8 Channel, Q-Sys Integrated, 8kW nominal	QSC	CXD8.8Qn	1
	Controller/Amplifier, 8 Channel, Q-Sys Integrated, 4kW nominal	QSC	CXD8.4Qn	2
	Controller/Amplifier, 4 Channel, Q-Sys Integrated, 5.6kW nominal	QSC	CXD4.3Q	2
	Video, HD/SDI DA, 1x8	Black Magic Designs	MiniCon Distro SDI4K	1
	Audio Embedder	Black Magic Designs	Mini Converter Audio to SDI	2
	Modulator, Video	ZeeVee	HBD2920-NA	1
	Amplifier, Headend, RF Video	Blonder Tongue	As needed	1
	Video RF Distribution	Blonder Tongue	As needed	1
	Patch Bay, Video, 16x2, 2u	Audio Accessories	BNC-32	1
	Patch Cable, Video, BNC 24"	Audio Accessories	VBNC-24	8
	Intercom Power Supply, 2-Channel	ClearCom	PS702	1
	Intercom Power Supply, 4-Channel	ClearCom	PS704	1
	Intercom Local Access Panel	Custom by AVC	Per drawing	1
	Intercom Termination Panel	Custom by AVC	As needed	1
	Switch, D-Audio/D-Video/Control, 24P Managed POE	Luxul	AMS-4424P	1
	Port, Uplink Fiber SFP+	Luxul	10G-MM-DX-LC	2
	Switch, Control, 10P Managed	Cisco	SG350-10	1
	Power Suppy, 24v DC	*Atlas or equal*	*As needed*	*1*
	Relays, 24V	*Radio Design Labs or equal*	*As needed*	*2*
	Patch Cable Holder	Audio Accessories	PCH-X	2
	Rack Panel, Blank/Brush as needed	Middle Atlantic	As required, lot	1
	UPS	Middle Atlantic	UPS-S1500R	1
PORTABLE & LOOSE EQUIPMENT				
Lecterns				
	Lectern Frame	Middle Atlantic	L5-TURFR-23LDW	2
	Lectern Finish Kit	Middle Atlantic	L5KAB2KATNT	2
	NB: Confirm style, color, and hardware with architect prior to ordering finish kit.			
	Lectern Task Light	Middle Atlantic	L5-TASKLIGHT18	2
	Lectern Turret Panel w/ Cutouts	Middle Atlantic	As needed	2

	Description	Manufacturer	Model	Qty
	Lectern PSU	Middle Atlantic	RLNK-915R	2
	Lectern Mic Shockmount	Middle Atlantic	L5-SHOC-XLR-S	2
	Rack Panel, Blank/Brush as needed	Middle Atlantic	As required, lot	2
	Encoder, Video, Wall-mount	AMX	NMX-ENC-N*2315*-WP	2
	Touchpanel 8in Wired	QSC	TSC-80W-G2	2
	Microphone, Line Gradient	Audio Technica	U857QU	2
	Wireless Keyboard & Mouse MX800	Logitech	920-006237	2
Loose Equipment, Portable Loudspeakers				
	Loudspeaker, Wedge Monitor	EAW	MW8	4
	Loudspeaker, Wedge Monitor	EAW	MW10	4
	Loudspeaker, Portable	EAW	JF8	6
	Loudspeaker Bracket	EAW	2035472	4
	Loudspeaker, Subwoofer	Fulcrum Acoustic	US212	2
	Cable, Loudspeaker, NL4	Whirlwind USA	NL410	8
	Cable, Loudspeaker, NL4	Whirlwind USA	NL425	8
Loose Equipment, ADA Compliant Systems				
	Receiver, RF, iDSP Basic, 12-pack	Listen Tech	LP-41-072	4
Portable Rack Systems, Stage Manager				
	Rack, Portable	SKB Cases	1SKB-R10U	2
	Intercom, Remote Station	Whirlwind USA	RM-704	1
	Intercom, Remote Station	Whirlwind USA	RM-702	1
	Page Panel	Custom by AVC	Per drawing	2
	BlueTooth Receiver (custom panel)	*Attero Tech*	*UNA610-BT*	*2*
	Touch-panel 5in Wired Wall-mount	*QSC*	*TSC-55w-G2*	*2*
	Rack Accessories, Panel Light	Littlite	RL-10-D-LED	2
	Drawer with Lock 2 RU	Middle Atlantic	D2-LK	2
	Cable, Bundle, 15’	Custom by AVC	*Dante+SDI+Com+Control+ Power* in Snakeskin	2
	Monitor, Confidence, SDI	Black Magic Designs	SmartView Duo	*2*
	Monitor Cable, BNC	Custom by AVC	As needed	*4*
Loose Equipment, Intercom				
	Remote Belt Pack	ClearCom	RS-702	2
	Remote Belt Pack	ClearCom	RS-701	10
	Y-Cable for 2-channel Belt Pack	ClearCom	YC-36	2
	Handset	ClearCom	HS-6	2
	Headset-Single Muff	ClearCom	CC-300-X4	15
	Cable, Microphone, Quad, 10', Black, White Collar	Whirlwind USA	MKQ10NP-WSRWH	10
	Cable, Microphone, Quad, 25', Black, Red Collar	Whirlwind USA	MKQ25NP-WSRRD	6

	Description	Manufacturer	Model	Qty
Loose Equipment, Wireless Mics				
	Transmitter, Bodypack, ULX System	Shure	ULXD1	16
	Transmitter, Handheld, ULX System, Beta 58	Shure	ULXD2/BETA58A	8
	Microphone Lavalier Cardioid	Point Source Audio	CR-8WL-XSH-BL	8
	Microphone Headworn Omni	Point Source Audio	CO-8WS-XSH-BE	10
	Microphone Headworn Omni	Point Source Audio	CO-8WS-XSH-BL	6
Loose Equipment, Stage Microphones & Di's & I/O				
	Stage Box	Yamaha Pro Audio	Rio 1608D	2
	Stage Box Cable	Whirlwind USA	ENC6ASE025	2
	Rack, Portable	*SKB Cases*	*1SKB-R3U*	*2*
	Microphone Dynamic Cardioid Vocal	Shure	Beta 58A	4
	Microphone Dynamic Cardioid Vocal	Shure	KSM9	2
	Microphone Condenser	Shure	KSM137	4
	Microphone Condenser Cardioid	Shure	KSM141	2
	Microphone Dynamic	Audix	D2	3
	Microphone Dynamic	Audix	D4	2
	Microphone Dynamic	Audix	D6	1
	Microphone Dynamic	Beyerdynamic	M88	2
	Microphone Dynamic Cardioid	ElectroVoice	RE 20	2
	Microphone Dynamic Super-Cardioid	ElectroVoice	ND46	4
	Microphone Dynamic Cardioid	Sennheiser	MD421 II	4
	Microphone Condenser Hemi Boundary	Crown	PCC-160	3
	Direct Box	Radial	ProDI	4
	Direct Box	Radial	J48	4
	Direct Box	Whirlwind USA	PCDI	2
	Direct Box	Whirlwind USA	PodDI	2
	Direct Box Cable	Whirlwind USA	L06	8
Loose Equipment, Stands / Cables / Accessories				
	Microphone Stand, Stack, 35-63in	K&M	26045-500-55	16
	Microphone Boom 16in	K&M	21160-577-55	10
	Microphone Stand, Short	K&M	25993-300-55	4
	Microphone Stand Base, Heavy Duty (Base Only)	K&M	26009	4
	Microphone Case	SKB Cases	3I-2011-MC12	2
	Cable, Microphone, Quad, 10', Black, White Collar	Whirlwind USA	MKQ10NP-WSRWH	10
	Cable, Microphone, Quad, 25', Black, Red Collar	Whirlwind USA	MKQ25NP-WSRRD	20
	Cable, Microphone, Quad, 50', Black, Blue Collar	Whirlwind USA	MKQ50NP-WSRBL	6

	Description	Manufacturer	Model	Qty
Loose Equipment, Video				
	Camera, Video	Marshall Electronics	CV350-10XB	1
	Tripod, Video Camera, w/ Head & Spreader	Manfrotto	546B + 504HD + 537SPRB	1
	Adapter, Accessory Clamp w/ Stud	Manfrotto	035RL + 03614	1
	Adapter, Clamp Extension	Manfrotto	042	1
	Display, Video, Commercial Grade, 65", 4K	Samsung	QM65H	2
	Cart, Mobile, for Flat Panel Display	Chief	PFCUB	2
	Cart, Mobile, Shelf Accessory	Chief	PAC710	2
	Video Playback, BluRay	Sony	UBP-X800	2
	Soundbar	Yamaha Pro Audio	YAS-106	2
	Mount, Soundbar to Display	*Custom by AVC*	*As required*	*2*
	Converter, Video	*Black Magic*	*MiniCon SDI-to-HDMI 6G*	*2*
	Cables, Extension for local connection	Custom by AVC	As needed	1
	Encoder, Video (loose spare)	*AMX*	*NMX-ENC-N2312*	*2*
Loose Equipment, Maintenance				
	Cable Tester	Whirlwind USA	MCT-7	1

MISCELLANEOUS

General

	AV Panels	Custom	by AV Contractor or Approved Manufacturer	Lot
	Miscellaneous Security Screws	Middle Atlantic or Lowell or Chief/Raxxess or Belden or APC	HS	Lot
	Miscellaneous Vent and Blanks	Middle Atlantic or Lowell or Chief/Raxxess or Belden or APC	Various	Lot
	Miscellaneous Wire and Hardware	Various	Various	Lot
	Miscellaneous Security Covers	Middle Atlantic or Lowell or Chief/Raxxess or Belden or APC	SC-x	Lot
	Acknowledgement Plaques for Fixed Equipment Racks	*Custom by AVC*	by AV Contractor	Lot

Cables

	Microphone & Line-level Audio Cables in Conduit	Belden or West Penn or Gepco	1800B or 1696A DA2401 DS401	Lot
	Intercom Cables in Conduit for Runs Under 500 ft.	Belden or West Penn or Extron or Liberty AV Solutions	8762 77292/D292 22-157-03 STP20 20-2C-SH-GRY	Lot
	Intercom Cables in Conduit for Runs Longer Than 500 ft.	Belden or West Penn or Gepco	8760 77293/D293 1800S	Lot
	Main Loudspeaker Cables in Conduit, #10 AWG	Belden or West Penn	5T00UP or 1313A C210	Lot
	Loudspeaker Cables in Conduit, #12 AWG	Belden or West Penn or Gepco	5000UP or 1311A C207 1200	Lot
	Monitor/Page Loudspeaker Cables (2 conductors) in Conduit, #14 AWG	Belden or West Penn or Gepco	5100UP C206 1400	Lot
	Monitor/Page Loudspeaker Cables (3 conductors) in Conduit, #14 AWG	Belden or West Penn or Gepco	5101UE 246 SSU144R	Lot
	Video Cables in Conduit	Belden	4694R	Lot
	Shielded Cat 6A (AV Data) Cables in Conduit	Belden orWest Penn orLiberty AV Solutionsor equal	10GX62F254247F24-4P-L7SH	Lot
	Shielded Cat 6 F/UTP Cables in Conduit	Belden or West Penn or Liberty AV Solutions or equal	2412F 4246F 24-4P-L6SH	Lot
	Cat 6 UTP Cables in Conduit	Belden or West Penn or Gepco or Liberty AV Solutions	2412 4246 CT604/500 24-4P-L6	Lot
	Cat 5e UTP Cables in Conduit	Belden or West Penn or Gepco or Liberty AV Solutions	1583A 4245 CT504/350 24-4P-L5-EN	Lot
	HDBaseT Cables in Conduit	Belden	2183	Lot
	50-ohm Antenna Cable in Conduit	Belden or West Penn or Gepco	7810R 808F V5010	Lot
	Singlemode Fiber Optic Cables in Conduit	Belden or West Penn or Gepco or Corning	B9W037 or B9W039 WP9W039 FSD2R or FSD6R	Lot

	Multimode Fiber Optic Cables in Conduit	Belden or Corning or West Penn or Liberty AV Solutions	B9C037 or B9C039 ClearCurve OM3 M9C006 2FRINSM10-BO or 4FRINSM10-BO	Lot
	Control Cables in Conduit	Various	Various; by AV Contractor	Lot
	Miscellaneous Cabling and Terminating Accessories	Various	Various; by AV Contractor	Lot

A.3 SPECIFIED ALTERNATE EQUIPMENT (TO BE BID SEPARATELY)

	Description	**Manufacturer**	**Model**	**Qty**
	AUDITORIUM			
	In-Room Equipment			
	Intercom, Wireless, Base Station	ClearCom	FSII-Base-II	1
	Intercom, Wireless, Transceiver	ClearCom	FSII-TCVR-24	2
	Intercom, Wireless, Beltpack	ClearCom	FSII-BP24-X4	5
	Intercom, Wireless, Beltpack Battery	ClearCom	BAT-50	5
	Intercom, Wireless, Beltpack Charger	ClearCom	AC-60	1
	Portable Equipment, Wireless Mics Rack			
	Rack, Portable	*SKB Cases*	*1SKB-R6U*	*1*
	Power Distribution	*As needed*	*Custom*	*1*
	Output cables	*Whirlwind USA*	*ENC6ASE010*	*1*
	Local Switch	*Cisco*	*SG350-10*	*1*
	Portable Equipment, Wireless Mics (Price per four channels, integrated into rack above)			
	Wireless Mics, Receiver	*Shure*	*ULXD4Q*	*1*
	Transmitter, Bodypack, ULX System	*Shure*	*ULXD1*	*4*
	Microphone Lavalier Cardioid	*Point Source Audio*	*CR-8WL-XSH-BL*	*4*
	Microphone Headworn Omni	*Point Source Audio*	*CO-8WS-XSH-BE*	*3*
	Microphone Headworn Omni	*Point Source Audio*	*CO-8WS-XSH-BL*	*1*

End of Appendix A

END OF SECTION 274100