RECEIVED
Nov 17 2025
SC Court of Appeals

THE STATE OF SOUTH CAROLINA
In The Court of Appeals

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas

Mikell R. Scarborough, Master-In-Equity

Appellate Case No. 2024-000788
Case No.: 2019-CP-10-01108

Balfour Beatty Construction, LLC, Appellant,

v.

Library Associates, LLC; and Metropolitan Life Insurance Company, a New York Corporation, Defendants,

And

Library Associates, LLC, Third-Party Plaintiff,

v.

Lithko Contracting, LLC, Guy M. Beaty, Inc., Bernard MMC, LLC, Gulf Stream Construction Company, Inc., Precision Walls, Inc., Palmetto Automatic Sprinkler Company, Inc., Cook & Boardman, LLC, Strong Tower Construction, LLC d/b/a Koch Corporation, Watson Electrical Construction Co., LLC, Trimark Foodcraft, LLC, Pleasant Places, Inc., David Allen Company, Inc., Premier Exteriors, LLC, Warco Construction, Inc., Old North State Masonry, LLC, Tom Rochester & Associates d/b/a Southeastern Architectural Systems, Forton Company, LLC, Low Country Case & Millwork, Inc., Quantum Coatings, LLC, Balfour Beatty Construction Group, Inc., Third-Party Defendants.

Of which Library Associates, LLC is the Respondent.

RECORD ON APPEAL - VOLUME 34 OF 51

James Lynn Werner (S.C. Bar No. 6029)
Katon E. Dawson, Jr. (S.C. Bar No. 101167)
1221 Main Street, Suite 1100
Columbia, SC 29201
(803) 255-8000
jimwerner@parkerpoe.com
katondawson@parkerpoe.com

Thomas C. Hildebrand, Jr. (S.C. Bar No. 2501)
Robert C. Byrd (S.C. Bar No. 1069)
850 Morrison Drive, Suite 400
Charleston, SC 29403
(843) 727- 2650
tomhildebrand@parkerpoe.com
bobbybyrd@parkerpoe.com

Attorneys for Appellant Balfour Beatty Construction, LLC

Walter H. Bundy, Jr., Esquire
M. Brent McDonald, Esquire
Bundy McDonald, LLC
1516 Old Trolley Rd 2nd Floor
Summerville, SC 29485-8209
walter@bundymcdonald.com
brent@bundymcdonald.com

and

John P. Linton, Sr.
Mary Kathleen Linton
Duffy & Young, LLC
96 Broad Street
Charleston, SC 29401
jlinton@duffyandyoung.com
mlinton@duffyandyoung.com

Attorneys for Library Associates, LLC

INDEX

Page(s)

Section 1 - Orders

Volume - 1

Order Granting Balfour Beatty Construction, LLC's Motion to Amend Complaint, filed October 2, 2019.....R-001

Order to Consolidate C.A. No. 2019-CP-10-2868 and Refer to Charleston County Master-In-Equity, filed November 18, 2019.....R-003

Order to Consolidate C.A. No. 2019-CP-10-2275 and Refer to the Charleston County Master-In Equity, filed November 18, 2019.....R-003

Form 4 Order Granting Library Associates, LLC's Motion for an Affirmative Junction, filed March 17, 2020.....R-007

Order Granting Library Associates, LLC's Motion to Enforce the Court Order, filed June 17, 2020.....R-010

Order Granting Strong Tower Construction, LLC d/b/a Koch Corporation's Motion for Partial Summary Judgment, filed September 9, 2021.....R-017

Order Granting Third-Party Defendant Warco Construction, Inc.'s Motion for Partial Summary Judgment, filed September 13, 2021.....R-033

Order Granting Watson Electrical Construction Co., LLC's Motion for Partial Summary Judgment, filed September 13, 2021.....R-043

Order Regarding Multiple Motions, filed October 26, 2021.....R-053

Consent Order of Dismissal of all Claims by and between Library Associates, LLC and Low Country Case & Millwork, Inc., filed December 20, 2021.....R-056

Consent Order of Dismissal With Prejudice as to all Claims between Library Associates, LLC and Warco Construction, Inc., filed December 20, 2021.....R-059

Order of Dismissal as to Claims between Balfour Beatty Construction, LLC and Gulf Stream Construction Company, Inc., filed December 20, 2021.....R-063

Consent Order of Dismissal With Prejudice as to Claims between Library Associates, LLC and Bernhard MCC, LLC, filed December 20, 2021.....R-067

Order of Dismissal With Prejudice as to Claims between Pleasant Place, Inc. and Library Associates, LLC, filed December 20, 2021.....R-071

Order of Dismissal as to Claims between Library Associates, LLC and David Allen Company, Inc., filed December 20, 2021 ..... R-075

Order Dismissing Certain Claims of Premier Exteriors, LLC Against Balfour Beatty Construction, LLC and "Interested Party" Defendants Pursuant to SCRCP 41(a)(2), filed December 20, 2021 ..... R-079

Form 4 Order Judgment Entered in Favor of Premier Exteriors, LLC Against Balfour Beatty Construction, LLC, filed December 22, 2021 ..... R-083

Order Granting Premier Exteriors, LLC's Motion for Summary Judgment Against Balfour Beatty Construction, LLC, filed December 22, 2021 ..... R-086

Form 4 Order Amends the Form 4 Filed on December 22, 2021 to Address the Error that the Case is not Ended, filed December 29, 2021 ..... R-099

Order of Dismissal as to Third Party Defendant Lithko Contracting, LLC's Claims Against Library Associates, LLC, filed April 4, 2022 ..... R-102

Oder of Dismissal as to Third Party Defendant Old North State Masonry, LLC's Claims Against Library Associates, LLC, filed April 4, 2022 ..... R-105

Order regarding Rule to Show Cause, filed November 28, 2022 ..... R-108

Form 4 Order Judgment in Favor of Library Associates, LLC Against Balfour Beatty Construction, LLC, filed October 6, 2023 ..... R-111

Trial Order, filed October 6, 2023 ..... R-114

Form 4 Order Granting Summary Judgment to Low Country Case & Millwork, Inc., filed April 4, 2024 ..... R-161

Form 4 Order Granting Summary Judgment to Premier Exteriors, LLC, filed April 4, 2024 ..... R-166

Form 4 Order Granting Summary Judgment to Strong Tower Construction, LLC, filed April 4, 2024 ..... R-171

Form 4 Order Denies Library Associates, LLC's Motion to Alter or Amend and Make Additional Findings, filed April 4, 2024 ..... R-176

Order Denying Balfour Beatty Construction, LLC's Motion for Reconsideration of Order Granting Summary Judgment to Premier Exteriors, LLC and Certifying Judgment as Final Pursuant to Rule 54(b), S.C.R.C.P., filed April 4, 2024 ..... R-179

Order Denying Balfour Beatty Construction, LLC's Motion to Reconsider Grant of Summary Judgment in Favor of Strong Tower Construction, LLC and Order Granting Strong Tower's Motion to Certify Judgment as Final, filed April 4, 2024 ..... R-182

Order Denying Motion to Reconsider Grant of Summary Judgment in Favor of Low Country Case & Millwork, Inc. and Certification of Judgment as Final, filed April 4, 2024 ..... R-185

Form 4 Order Judgment in Favor of Library Associates, LLC Against Balfour Beatty Construction, LLC for Attorneys' Fees and Costs, filed April 12, 2024 ..... R-188

Order Awarding Attorneys' Fees and Costs, filed April 12, 2024 ..... R-194

Order Awarding Punitive Damages, filed April 12, 2024 ..... R-200

Order Denying Balfour Beatty Construction, LLC's Motion for Reconsideration of Watson Electrical Construction, LLC's Summary Judgment, filed April 12, 2024 ..... R-212

Order Granting Motion for Reconsideration by Lithko Contracting, LLC, filed April 12, 2024 ..... R-215

Order Granting Watson Electrical Construction, LLC's Motion for Reconsideration, filed April 12, 2024 ..... R-220

Order Amending Post Judgment Interest Amount, filed April 26, 2024 ..... R-223

Order on Old North State Masonry, LLC's Motion for Reconsideration, filed April 26, 2024 ..... R-225

Order on Multiple Motions, filed April 29, 2024 ..... R-228

Order Granting and Denying in Part Balfour Beatty Construction, LLC's Motion to Alter or Amend the Order Awarding Punitive Damages and Election of Remedy, filed April 29, 2024 ..... R-231

Form 4 Judgment Order in Favor of Library Associates, LLC Against Balfour Beatty Construction, LLC, filed May 6, 2024 ..... R-234

Form 4 Order Denying Balfour Beatty Construction, LLC's Motions to Alter or Amend, filed May 15, 2024 ..... R-240

Order Granting Motion for Stay of Execution Pending Appeal and Establishing Amount of Bond, filed September 9, 2025 ..... R-243

Section 2 - Pleadings

Summons and Complaint, C.A. No. 2019-CP-10-01108, filed March 5, 2019 ..... R-247

Library Associates, LLC's Answer to Plaintiff's Complaint and Counterclaims, filed May 3, 2019 ..... R-274

Amended Answer and Counterclaims of Library Associates, LLC and Third-Party Complaint, filed May 15, 2019 ..... R-287

Amended Summons and Complaint, C.A. No. 2019-CP-10-01108, filed October 3, 2019 ..... R-455

Answer and Counterclaims of Library Associates, LLC to Amended Complaint of Balfour Beatty Construction, LLC and Third-Party Complaint, filed October 17, 2019 ..... R-474

Volume - 2

Answer and Counterclaims of Library Associates, LLC to Amended Complaint of Balfour Beatty Construction, LLC and Third-Party Complaint, filed October 17, 2019, cont'd. R-501

Second Amended Summons and Complaint, C.A. No. 2019-CP-10-01108, filed October 12, 2020 ..... R-509

Answer and Counterclaims of Library Associates, LLC to the Second Amended Complaint of Balfour Beatty Construction, LLC and Third-Party Complaint, filed October 20, 2020 ..... R-537

Section 3 - Transcripts

Transcript of December 8, 2022 Hearing on Rule to Show Cause regarding Trial Transcript R-614

Transcript of March 13, 2024 Hearing on Balfour Beatty Construction, LLC's Motion to Alter/Amend Order Granting Judgment to Library Associates, LLC and Library Associates, LLC's Petition for Attorneys' Fees and Costs R-638

Transcript of April 2, 2024 Hearing on Balfour Beatty Construction, LLC's Motion to Require Library Associates, LLC to Elect a Remedy and Library Associates, LLC's Petition for Attorneys' Fees and Costs R-881

Volume - 3

Transcript of April 2, 2024 Hearing on Balfour Beatty Construction, LLC's Motion to Require Library Associates, LLC to Elect a Remedy and Library Associates, LLC's Petition for Attorneys' Fees and Costs, cont'd. R-1001

September 13, 2021 (Day 1 of Trial)
- Start of Trial R-1035
- Tim Spano
  - Direct, Trial Transcript, Page 91 ..... R-1125

September 14, 2021 (Day 2)
- Alec Dooley R-1320
  - Direct by Hildebrand, Page 303 ..... R-1337
  - Cross by McDonald, Page 356 ..... R-1390
  - Cross by Kelly, Page 443 ..... R-1477

September 15, 2021 (Day 3) R-1498

Volume - 4

September 15, 2021 (Day 3)

Tim Spano
Direct by Hildebrand, Page 468 ..... R-1502
Cross by Bundy, Page 600 ..... R-1634
Cross by Kelly, Page 603 ..... R-1637

Mark Doran
Direct by Hildebrand, Page 675 ..... R-1709
Direct by Hildebrand, Page 690 ..... R-1724
Direct by Hildebrand, Page 715 ..... R-1749

September 16, 2021 (Day 4)

James McAuliffe
Direct by Hildebrand, Page 835 ..... R-1869
Direct by Hildebrand, Page 855 ..... R-1889

Steven Huyghe
Direct by Hildebrand, Page 960 ..... R-1994

Volume - 5

Direct by Hildebrand, Page 960, Cont'd. R-2001
Direct by Hildebrand, Page 994 ..... R-2028

September 17, 2021 (Day 5)

Nick Starcevic
Direct by Hildebrand, Page 1094 ..... R-2128
Cross by Bundy, Page 1268 ..... R-2302

September 20, 2021 (Day 6)

Nick Starcevic
Cross by Bundy, Page 1288 ..... R-2322

Volume - 6

September 21, 2021 (Day 7)

Nick Starcevic
Cross by Bundy, Page 1619 ..... R-2653

David Simonton
Direct by Hildebrand, Page 1786 ..... R-2820

September 22, 2021 (Day 8)

David Simonton
Direct by Hildebrand, Page 1899 ..... R-2933

Volume - 7

Direct by Hildebrand, Page 1899, Cont'd. R-3001
Cross by Bundy, Page 2047 ..... R-3081

September 23, 2021 (Day 9)

David Simonton
Cross by Bundy, Page 2167 ..... R-3201
Redirect by Hildebrand, Page 2278 ..... R-3312
Recross by Bundy, Page 2331 ..... R-3365

Casey Thompson
Direct by Hildebrand, Page 2364 ..... R-3398
Cross by Bundy, Page 2439 ..... R-3473

Volume - 8

Cross by Bundy, Page 2439, Cont'd. R-3501
Redirect by Hildebrand, Page 2473 ..... R-3507
Recross by Bundy, Page 2476 ..... R-3510

September 24, 2021 (Day 10) R-3514

October 25, 2021 (Day 11)

Mark Boe
Direct by Bundy, Page 2599 ..... R-3633

October 26, 2021 (Day 12)

Mark Boe
Direct by Bundy, Page 2793 ..... R-3827
Cross by Hildebrand, Page 2872 ..... R-3906
Cross by Hildebrand, Page 2907 ..... R-3941
Cross by Terry, Page 2924 ..... R-3958
Cross by Windle, Page 2927 ..... R-3961
Redirect by Bundy, Page 2931 ..... R-3965

Grady Query
Direct by Bundy, Page 2939 ..... R-3973

Volume - 9

Direct by Bundy, Page 2939, Cont'd. R-4001

October 27, 2021 (Day 13)

Grady Query
Cross by Hildebrand, Page 3040.....R-4077
Cross by Terry, Page 3081.....R-4118
Redirect by Bundy, Page 3092.....R-4129
Recross by Terry, Page 3100.....R-4137

Jim Clements
Direct by Bundy, Page 3116.....R-4153

October 28, 2021 (Day 14)

Jim Clements
Cross by Hildebrand, Page 3305.....R-4342
Cross by Terry, Page 3425.....R-4462
Redirect by Bundy, Page 3439.....R-4476

Volume - 10

Redirect by Bundy, Page 3439, Cont'd. R-4501
Recross by Hildebrand, Page 3480.....R-4517
Redirect by Bundy, Page 3493.....R-4530
Recross by Hildebrand, Page 3493.....R-4530

Kim Bennett Brown
Direct by McDonald, Page 3531.....R-4568

October 29, 2021 (Day 15)

Kim Bennett Brown
Direct by Mcdonald, Page 3587.....R-4624

November 1, 2021 (Day 16)

Kim Bennett Brown
Direct by McDonald, Page 3693.....R-4730
Cross by Hildebrand, Page 3835.....R-4872
Cross by Windle, Page 3861.....R-4898
Cross by Terry, Page 3868.....R-4905
Cross by O'Kelley, Page 3870.....R-4907
Redirect by McDonald, Page 3875.....R-4912
Recross by Hildebrand, Page 3880.....R-4917

November 2, 2021 (Day 17)

Sam Hadley
Direct by McDonald, Page 3887.....R-4924

Volume - 11

Direct by McDonald, Page 3887, Cont'd.....R-5001

November 2, 2021 (Day 18)

Sam Hadley
Direct by McDonald, Page 4044.....R-5081
Cross by Hildebrand, Page 4138.....R-5175
Cross by Windle, Page 4181.....R-5218
Cross by Terry, Page 4189.....R-5226

Tim Spano
Redirect by Hildebrand, Page 4237.....R-5274
Recross by Bundy, Page 4246.....R-5283

November 4, 2021 (Day 19)

David Simonton
Redirect by Hildebrand, Page 4276.....R-5313
Recross by Bundy, Page 4296.....R-5333

Casey Thompson
Redirect by Hildebrand, Page 4326.....R-5363
Recross by Bundy, Page 4380.....R-5417

November 29, 2021 (Day 20)

Mark Doran
Redirect by Hildebrand, Page 4413.....R-5450
Recross by Bundy, Page 4433.....R-5470

Volume - 12

November 30, 2021 (Day 21).....R-5558

December 2, 2021 (Day 22)

Jim Clements
Direct by Terry, Page 4574.....R-5611
Cross by Bundy, Page 4599.....R-5636
Redirect by Terry, Page 4610.....R-5647
Cross by Windle, Page 4614.....R-5651
Cross by Hildebrand, Page 4616.....R-5653
Recross by Bundy, Page 4618.....R-5655
Recross by Hildebrand, Page 4621.....R-5658

William Brittelli
Direct by Terry, Page 4630.....R-5667
Cross by Bundy, Page 4684.....R-5721

Redirect by Terry, Page 4754 .....R-5791

Joe Anastasi
Direct by Terry, Page 4768 .....R-5805

December 3, 2021 (Day 23)

Joe Anastasi
Direct by Windle, Page 4826 .....R-5863
Cross by Bundy, Page 4866 .....R-5903
Redirect by Windle, Page 4957 .....R-5994

Mike Rohrer
Direct by Windle, Page 4959 .....R-5996

Volume - 13

Direct by Windle, Page 4959, Cont'd. R-5996
Cross by Bundy, Page 5007 .....R-6044

Section 4 - Exhibits

Balfour Beatty Construction, LLC's Exhibit 3 .....R-6092
Balfour Beatty Construction, LLC's Exhibit 11 .....R-6105
Balfour Beatty Construction, LLC's Exhibit 12 .....R-6113

Volume - 14

Balfour Beatty Construction, LLC's Exhibit 12, Cont'd. R-6501

Volume - 15

Balfour Beatty Construction, LLC's Exhibit 12, Cont'd. R-7001
Balfour Beatty Construction, LLC's Exhibit 26 .....R-7089
Balfour Beatty Construction, LLC's Exhibit 27 .....R-7091
Balfour Beatty Construction, LLC's Exhibit 42 .....R-7162
Balfour Beatty Construction, LLC's Exhibit 46 .....R-7170
Balfour Beatty Construction, LLC's Exhibit 56 .....R-7191
Balfour Beatty Construction, LLC's Exhibit 72 .....R-7336
Balfour Beatty Construction, LLC's Exhibit 81 .....R-7338
Balfour Beatty Construction, LLC's Exhibit 83 .....R-7340
Balfour Beatty Construction, LLC's Exhibit 85 .....R-7342
Balfour Beatty Construction, LLC's Exhibit 111 .....R-7346
Balfour Beatty Construction, LLC's Exhibit 138 .....R-7349
Balfour Beatty Construction, LLC's Exhibit 141 .....R-7352
Balfour Beatty Construction, LLC's Exhibit 143 .....R-7354
Balfour Beatty Construction, LLC's Exhibit 150 .....R-7357
Balfour Beatty Construction, LLC's Exhibit 151 .....R-7363
Balfour Beatty Construction, LLC's Exhibit 154 .....R-7372

Balfour Beatty Construction, LLC's Exhibit 201 .....R-7383
Balfour Beatty Construction, LLC's Exhibit 202 .....R-7390
Balfour Beatty Construction, LLC's Exhibit 215 .....R-7393
Balfour Beatty Construction, LLC's Exhibit 226 .....R-7422

Volume - 16

Balfour Beatty Construction, LLC's Exhibit 226, Cont'd. R-7501

Volume - 17

Balfour Beatty Construction, LLC's Exhibit 226, Cont'd. R-8001

Volume - 18

Balfour Beatty Construction, LLC's Exhibit 226, Cont'd. R-8501
Balfour Beatty Construction, LLC's Exhibit 231 .....R-9000

Volume - 19

Balfour Beatty Construction, LLC's Exhibit 231, Cont'd. R-9001
Balfour Beatty Construction, LLC's Exhibit 255 .....R-9031
Balfour Beatty Construction, LLC's Exhibit 257 .....R-9033
Balfour Beatty Construction, LLC's Exhibit 258 .....R-9037
Balfour Beatty Construction, LLC's Exhibit 261 .....R-9039
Balfour Beatty Construction, LLC's Exhibit 263 .....R-9044
Balfour Beatty Construction, LLC's Exhibit 292 .....R-9048
Balfour Beatty Construction, LLC's Exhibit 300 .....R-9085
Balfour Beatty Construction, LLC's Exhibit 301 .....R-9148
Balfour Beatty Construction, LLC's Exhibit 303 .....R-9197
Balfour Beatty Construction, LLC's Exhibit 304 .....R-9217
Balfour Beatty Construction, LLC's Exhibit 305 .....R-9227
Balfour Beatty Construction, LLC's Exhibit 312 .....R-9350

Volume - 20

Balfour Beatty Construction, LLC's Exhibit 312, Cont'd. R-9501
Balfour Beatty Construction, LLC's Exhibit 350 .....R-9554
Library Associates, LLC's Exhibits 1 - 4 .....R-9586

Volume - 21

Library Associates, LLC's Exhibits 4, Cont'd. - 7 .....R-10001

Volume - 22

Library Associates, LLC's Exhibit 7, Cont'd. R-10501

Volume - 23

Library Associates, LLC's Exhibits 7, Cont'd. - 8 .....R-11001

Volume - 24

Library Associates, LLC's Exhibits 8, Cont'd. - 9 .....R-11501

Volume - 25

Library Associates, LLC's Exhibits 9, Cont'd. - 10 .....R-12001

Volume - 26

Library Associates, LLC's Exhibit 10, Cont'd. R-12501

Volume - 27

Library Associates, LLC's Exhibits 10, Cont'd. - 11 .....R-13001

Volume - 28

Library Associates, LLC's Exhibit 11, Cont'd. R-13501

Volume - 29

Library Associates, LLC's Exhibits 11, Cont'd. - 12 .....R-14001

Volume - 30

Library Associates, LLC's Exhibits 12, Cont'd. - 13 .....R-14501

Volume - 31

Library Associates, LLC's Exhibits 13, Cont'd. - 35 .....R-15001

Volume - 32

Library Associates, LLC's Exhibits 35, Cont'd. - 59 .....R-15501
Library Associates, LLC's Exhibits 63 - 71 .....R-15897

Volume - 33

Library Associates, LLC's Exhibits 71, Cont'd. - 80 .....R-16001
Library Associates, LLC's Exhibits 82, Cont'd. - 88 .....R-16130

Volume - 34

Library Associates, LLC's Exhibits 88, Cont'd. - 94 .....R-16501

Volume - 35

Library Associates, LLC's Exhibits 94, Cont'd. - 112 .....R-17001

Volume - 36

Library Associates, LLC's Exhibits 112, Cont'd. - 118 .....R-17501

Volume - 37

Library Associates, LLC's Exhibits 118, Cont'd. - 122 .....R-18001

Volume - 38

Library Associates, LLC's Exhibits 122, Cont'd. - 125 .....R-18501

Volume - 39

Library Associates, LLC's Exhibits 125, Cont'd. - 127 .....R-19001

Volume - 40

Library Associates, LLC's Exhibits 127, Cont'd. - 129 .....R-19501

Volume - 41

Library Associates, LLC's Exhibits 129, Cont'd. - 130 .....R-20001

Volume - 42

Library Associates, LLC's Exhibits 130, Cont'd. - 132 .....R-20501

Volume - 43

Library Associates, LLC's Exhibits 132, Cont'd. - 134 .....R-21001

Volume - 44

Library Associates, LLC's Exhibits 134, Cont'd. - 136 .....R-21501

Volume - 45

Library Associates, LLC's Exhibits 136, Cont'd. - 139 .....R-22001

Volume - 46

Library Associates, LLC's Exhibits 139, Cont'd. - 140 .....R-22501

Volume - 47

Library Associates, LLC's Exhibits 140, Cont'd. - 143 .....R-23001

Volume - 48

Library Associates, LLC's Exhibits 143, Cont'd. - 163 .....R-23501

Section 5 - Other Documents

Balfour Beatty Construction, LLC's Notice and Certificate of Mechanic's Lien, filed January 25, 2019 .....R-23699

Balfour Beatty Construction, LLC's Notice and Certificate of Amended Mechanic's Lien, filed July 23, 2019 .....R-23705

Proposed Trial Order submitted by Balfour Beatty Construction, LLC, filed May 23, 2023 .....R-23712

Proposed Trial Order submitted by Library Associates, LLC, filed May 23, 2023 .....R-23857

Balfour Beatty Construction, LLC's Motion to Alter/Amend Order Granting Judgment to Library Associates, LLC, filed October 16, 2023 .....R-23905

Volume - 49

Balfour Beatty Construction, LLC's Motion to Alter/Amend Order Granting Judgment to Library Associates, LLC, filed October 16, 2023, Cont'd. R-24001

Balfour Beatty Construction, LLC's Motion to Require Library Associates, LLC to Elect a Remedy, filed October 16, 2023 .....R-24075

Library Associates, LLC's Petition for Attorneys' Fees and Costs, filed November 6, 2023 .....R-24077

Balfour Beatty Construction, LLC's Memorandum in Opposition to Defendant Library Associates, LLC's Petition for Attorneys' Fees and Costs, filed March 7, 2024 .....R-24086

Balfour Beatty Construction, LLC's Memorandum in Support of its Motion to Require Library Associates, LLC to Elect a Remedy, filed March 7, 2024 .....R-24116

Balfour Beatty Construction, LLC's Memorandum in Support of Motion to Alter/Amend the Order Granting Judgment to Library Associates, LLC, filed March 7, 2024 .....R-24119

Library Associates, LLC's Memorandum in Support of its Petition for Attorneys' Fees and Costs and Pursuant to the Declaratory Judgment Act, Additional Interest Payments, Past and Future, as Direct Costs Incurred and for Prejudgment Interest as Provided by

Law; and in Support of Pending Rule 52(B) and 59(E) Motions to Alter or Amend and Make Additional Findings, filed March 7, 2024.....R-24162

Balfour Beatty Construction, LLC's Amended Motion to Require Library Associates, LLC to Elect a Remedy, filed March 8, 2024.....R-24183

Balfour Beatty Construction, LLC Memorandum in Response to Library Associates, LLC's Memorandum in Support of its Petition for Attorneys' Fees and Costs and Pursuant to the Declaratory Judgment Act, Additional Interest Payments, Past and Future, as Direct Costs Incurred and for Prejudgment Interest as Provided by Law; and in Support of Pending Rule 52(B) and 59(E) Motions to Alter or Amend and Make Additional Findings, filed March 11, 2024.....R-24185

Balfour Beatty Construction, LLC's Motion to Strike Affidavit of Marvin D. Infinger, filed March 11, 2024.....R-24198

Library Associates, LLC's Reply to Balfour Beatty Construction, LLC's Memorandum in Opposition to its Petition for Attorneys' Fees and Costs, filed March 11, 2024.....R-24204

Revised Affidavit of Marvin D. Infinger, filed March 11, 2024.....R-24210

Affidavit of Franklin E. Worrell, filed March 28, 2024.....R-24223

Balfour Beatty Construction, LLC's Motion in Limine Regarding Hearing on Punitive Damages, filed April 1, 2024.....R-24230

Library Associates, LLC's Filing of March 13, 2024 Hearing Exhibits, filed April 10, 2024.....R-24237

Volume - 50

Library Associates, LLC's Filing of March 13, 2024 Hearing Exhibits, filed April 10, 2024, Cont'd.....R-24501

Volume - 51

Library Associates, LLC's Filing of March 13, 2024 Hearing Exhibits, filed April 10, 2024, Cont'd.....R-25001

Library Associates, LLC's Supplemental Petition for Attorneys' Fees and Costs; and in Addition Other Relief Pursuant to Declaratory Judgment Cause of Action, filed April 10, 2024.....R-25270

Supplemental Affidavit of Kimberly Bennett Brown, filed April 10, 2024.....R-25272

Balfour Beatty Construction, LLC's Motion to Alter or Amend the Order Awarding Punitive Damages and Election of Remedy Pursuant to Rule 59(E), filed April 22, 2024.....R-25308

Library Associates, LLC's Notice of Election of Remedy, filed May 2, 2024 .....R-25311

Balfour Beatty Construction, LLC's Motion to Alter or Amend Pursuant to Rule 59(E), filed May 9, 2024 .....R-25314

Video Deposition Testimony of George Michael Baumbach, 13:5-14:10 (Timestamp 7:28-8:23); 14:24-15:11 (Timestamp 10:00-10:30); 42:12-45:23 (Timestamp 47:40-52:05); 46:22-47:15 (Timestamp 53:27-54:22) (Placeholder for video file being submitted via Court of Appeal's OneDrive) R-25320

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 10-7-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____Min_____Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	0		
B.	Mason	0		
C.	Labor	0		
D.	Operator	0		
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	0		
Arch. Block			
Stone			
Frames			
Grout			

Description and Location of:

1.) **Work performed today:** No one is on site today due to hurricane matthews

2.) **Areas of masonry delayed and causes of delays:**

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 10-9-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____Min_____Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9	
B.	Mason	1	8	
C.	Labor	2	17	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone			
Frames			
Grout			
6 foot of	precast		

Description and Location of:

1.) **Work performed today:** Started on south side laying out for door reveals

2.) **Areas of masonry delayed and causes of delays:** Rain came in at 12:30 went to basement started Organizing scaffle and materail rest of day

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 10-10-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____Min_____Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10	
B.	Mason	1	9	
C.	Labor	2	20	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone			
Frames			
Grout			
30 door surrunds			

Description and Location of:

1.) Work performed today: Worked on south side setting door surrunds

2.) Areas of masonry delayed and causes of delays:

3.) Verbal instructions received: Was instructed by tim to set block lintel for canopy on West side

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 10-11-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10	
B.	Mason	1	9	
C.	Labor	1	10	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone			
Frames			
Grout			
20 foot of door surrund			
8 pieces stone			

Description and Location of:

1.) **Work performed today:** Worked on south side door surrund went to west side started On door to put lintel inn

2.) **Areas of masonry delayed and causes of delays:** Saws not working having to fight on west side Not ready for lintel

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 10-12-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10	
B.	Mason	1	9.5	
C.	Labor	1	10	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone			
Frames			
Grout			
20 foot door surrond			
7 pieces aricraft			

Description and Location of:

1.) **Work performed today:** Worked on south side setting aricraft and door surrond Between column line 31/32

2.) **Areas of masonry delayed and causes of delays:**

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 10-13-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	8	
B.	Mason	1	8	
C.	Labor	1	8	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone			
Frames			
Grout			
10 pieces aricraft			

Description and Location of:

1.) Work performed today: Worked on south side laying out for third floor And on door

2.) Areas of masonry delayed and causes of delays: The water proofers was still on roof Couldnt Lay put lines or start precast

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 10-14-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____Min_____Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	6	
B.	Mason	1	6	
C.	Labor	1	6	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone			
Frames			
Grout			
One cap stone			

Description and Location of:

1.) Work performed today: Worked on north side 8 th floor set corner piece and on west Side patching precast

2.) Areas of masonry delayed and causes of delays:

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 10-10-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	0		
B.	Mason	0		
C.	Labor	0		
D.	Operator	0		
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	0		
Arch. Block			
Stone			
Frames			
Grout			

Description and Location of:

1.) **Work performed today:** No one is on site today due to displacement of workers after evacuation. Return to regular schedule 10-11-2016!

2.) **Areas of masonry delayed and causes of delays:**

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE MASONRY LLC

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB: Marion Square Date: 10-11-16

JOB #: 1259

Weather: (Clear) (P.Cloudy) (Cloudy) Temperature: 73° Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10	2
B.	Mason	4	32	8
C.	Labor	6	51.5	8
D.	Operator	1	8.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	219		
Arch. Block			
Stone			
Frames			
Grout			

Description and Location of:

1.) Work performed today: Cleaned up from hurricane matthews, laid CMU at stairway 6, worked on time and matterial work 1st. Floor, set scaffold along west wall inter. For grout pour and inspection on 10-12-16 a.m., lai out exterior wall south east corner 3rd. Floor,completed lay out 3rd. Floor atrium.

2.) Areas of masonry delayed and causes of delays: Waterproofers on site today. Started level 3 southwest corner on the south side. We will follow right behind them with CMU.

3.) Verbal instructions received:

4.) Equipment received on site today: H&D circular saw, wood blades, cleaning rags, lubricant.

[redacted]

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 10-12-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 74* Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	11.5	
B.	Mason	4	36	
C.	Labor	6	62.5	
D.	Operator	1	11.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	217		
Arch. Block			
Stone			
Frames			
Grout			

Description and Location of:

1.) Work performed today: Topped out first floor CMU. under starirways,1&2. Worked on CMU. At stairway 6. In Atrium at C.L. Q completed CMU. Where lethco drilled rebar. Had 3rd. Floor est wall inspected and approved to grout. Working on rebar placement from 4 to 3 thru.slab at sleeves.

2.) Areas of masonry delayed and causes of delays: At Level 3 north, rebar issues at windows. Vertical dowels were cut off at flashing pan for precast. Waitting on direction from B.B.

3.) Verbal instructions received:

4.) Equipment received on site today: None

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 10/13/2016

JOB# 1259

Weather: (Clear) X (P.Cloudy) (Cloudy): Temperature: 74* Min _____ Max _____

Rainfall _____ Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9.5	
B.	Mason	5	40	
C.	Labor	6	43.5	
D.	Operator	1	9.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	240		
Arch. Block			
Stone	14		
Frames			
Grout			

Description and Location of:

1.) **Work performed today:** Installed window sills on 3rd floor from cl 1-31 north and cl A-S west.

Started cmu on 3rd floor cl 14-31 north

2.) **Areas of masonry delayed and causes of delays:** Stairwell 4- needs ground work done so we can set up scaffold.

Had to purchase drill bits to clean out verticle dowel sleeves due to concrete in sleeve.

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** 4 Drill bits , 2 water sprayers , dust mask , safety glasses, Water nozzle for hose , and 10 gallons of fuel.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 10-14-16

JOB# 1259

Weather: (Clear) X (P.Cloudy) (Cloudy): Temperature: 74* Min_____ Max_____

Rainfall_____ Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10	
B.	Mason	4	32	
C.	Labor	6	51.5	
D.	Operator	1	10	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	397		
Arch. Block			
Stone	4		
Frames			
Grout	1 yard		

Description and Location of:

1.) **Work performed today:** Laid cmu at CL 31 to1 north and to CL Ato B west all up to scaffold high. Laid 4 window sills south west corner and south east corner. Satrted grout of west wall level 3 will start fill in to deck to be complete.

2.) **Areas of masonry delayed and causes of delays:** Need window sill at north at column line 31 to be done by waterproffers. Need hole at main water tie in filled to start cmu at south at stairway 4.

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** 8 inch block for level 1 foyer.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 10-15-16

JOB# 1259

Weather: (Clear) X (P.Cloudy) (Cloudy): Temperature: 74* Min_____ Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	7	
B.	Mason	2	14	
C.	Labor	4	28	
D.	Operator	1	7	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	34		
Arch. Block			
Stone			
Frames			
Grout	5 yards		

Description and Location of:

1.) Work performed today: Grouted north 6" wall that is up scaffold high. We did 23 picks on the crane. Mortor,grout,and 8"cmu.laid rip course at deck to top out on east.

2.) Areas of masonry delayed and causes of delays:

3.) Verbal instructions received:

4.) Equipment received on site today: 8 inch block for level 1 foyer.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 10-16-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10	
B.	Mason	1	9.5	
C.	Labor	1	10	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone			
Frames			
Grout			
17 pieces of aricraft			
16'8" of column wraps			

Description and Location of:

1.) **Work performed today:** Started up on third floor then droped down to dirst floor Between column line 31/33 laying aricraft then went back up to third floor to set Column wrap pieces

2.) **Areas of masonry delayed and causes of delays:** The water proofing around column was not done till Lunch time had to reset back up also when waterproofers put black coating down Did not protect precast getting water profing all over it

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 10-17-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____Min_____Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10.5	
B.	Mason	1	10	
C.	Labor	1	10.5	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone			
Frames			
Grout			
30 foot column wrap			

Description and Location of:

1.) Work performed today: Set column wraps on third floor

2.) Areas of masonry delayed and causes of delays:

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 10-18-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____Min_____Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10	
B.	Mason	1	10	
C.	Labor	1	10	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone			
Frames			
Grout			
21 foot column wrap			
7 column caps			

Description and Location of:

1.) Work performed today: Worked on third floor setting precast arounb columns

2.) Areas of masonry delayed and causes of delays: Cause beam coming up out of block not plumb

Had to notch precast caps

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 10-19-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____ Min_____ Max_____

Rainfall_____ Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10	
B.	Mason	1	9.5	
C.	Labor	1	10	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone			
Frames			
Grout			
1 column cap			

Description and Location of:

1.) **Work performed today:** Worked on third floor finished setting caps stated se Tting Obelisk

2.) **Areas of masonry delayed and causes of delays:** There are no correct inserts for obelisk here Also tube steel coming out of concrete is wrong going have to cut obelisk to Clear for tubbing

3.) **Verbal instructions received:** Greg with the precast company said for the one obelisk i can Use the 3/4 all thread in the inserts also i can cut obelisk for the incorrect tubing

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 10-20-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9	
B.	Mason	1	6	
C.	Labor	1	9	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone			
Frames			
Grout			
2 column wrap			

Description and Location of:

1.) **Work performed today:** Set precast on third floor on south

2.) **Areas of masonry delayed and causes of delays:** Did not have inserts for obelisk will have monday Waterproofets not done can not start on back columns till they are finished water proofing monday

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 10-21-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	4	
B.	Mason			
C.	Labor			
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone			
Frames			
Grout			

Description and Location of:

1.) **Work performed today:** Laid out columns on third floor

2.) **Areas of masonry delayed and causes of delays:** Waiting on inserts for obelisk on small columns
Missing pieces on back columns cant set cause war proofing not done

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPØRT

NAME OF JOB Marion Square Date: 10-17-16

JOB# 1259

Weather: (Clear) X (P.Cloudy) (Cloudy): Temperature: 74* Min_____ Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9	
B.	Mason	8	64	
C.	Labor	7	68	
D.	Operator	1	9	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	444		
Arch. Block			
Stone			
Frames			
Grout	2 yards		

Description and Location of:

1.) Work performed today: Level 3 west, suth west, 6" cmu, level 1 at south west foyer, topping out east with rip course, grout west wall that is scaffold high

2.) Areas of masonry delayed and causes of delays:

3.) Verbal instructions received:

4.) Equipment received on site today: Picked up harnesses from HD

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 10-18-16

JOB# 1259

Weather: (Clear) X (P.Cloudy) (Cloudy): Temperature: 74* Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	11	
B.	Mason	8	64	
C.	Labor	7	56	
D.	Operator	1	11	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	531		
Arch. Block			
Stone	3		
Frames			
Grout	4yards		

Description and Location of:

1.) Work performed today: Working on level 3 south and level 3 north, workimg level 3 east at top of wall rip course. Working in foyer area level one from stairway 1 to stairway 4. Pouring grout in 6" block around atrium area level 3. Window sills at L3 north north west corner.

2.) Areas of masonry delayed and causes of delays:

3.) Verbal instructions received: Asked to look ahead at the 6th floor for parapet wall

4.) Equipment received on site today: A load of precast stone came in today window sills for 4th and 5th floor. 1 load of mortor came in (6 pallets)

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 10-19-16

JOB# 1259

Weather: (Clear) X (P.Cloudy) (Cloudy): Temperature: 84* Min ____ Max ____

Rainfall ____ Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	11	
B.	Mason	8	64	
C.	Labor	7	56	
D.	Operator	1	11	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	736		
Arch. Block			
Stone			
Frames			
Grout	2.5 yards		

Description and Location of:

1.) **Work performed today:** Worked on second lift on north level 3. Worked on level 1 at the foyer. We came in at 4 am to use crane to fly level 4 cmu to the floor. We did 20 picks from 4 am. To 830 am.

2.) **Areas of masonry delayed and causes of delays:**
We were pulled off of cmu wall north between column line 20 to 26 due to buck hoist instalation. This will happen tomorrow as well.

3.) **Verbal instructions received:** I was asked when we are going to remove stone from mock up

4.) **Equipment received on site today:** Recived a load of 6" cmu for L4. A load of grout for Level3

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 10-20-16

JOB# 1259

Weather: (Clear) X (P.Cloudy) (Cloudy): Temperature: 84* Min_____ Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9	
B.	Mason	8	64	
C.	Labor	7	62.5	
D.	Operator	1	9	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	804		
Arch. Block			
Stone			
Frames			
Grout	3 yards		

Description and Location of:

1.) Work performed today:

Working on level 3 on second lift thru out floor, keying out atrium area north east and west walls. Started layout at level 4. Working on level 1 foyer. Second lift completed atbthis area nee to grout to continue up.

2.) Areas of masonry delayed and causes of delays:

At the forth floor slab to deck we are to have 9' per the drawings. What we have is anywhere between 8' 10 1/4 to 8' 11".

3.) Verbal instructions received:

4.) Equipment received on site today: One load of grout.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 10-2[illegible]-16

JOB# 1259

Weather: (Clear) X (P.Cloudy) (Cloudy): Temperature: 84* Min_____ Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10.5	
B.	Mason	8	54	
C.	Labor	8	72	
D.	Operator	1	10.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	579		
Arch. Block			
Stone			
Frames			
Grout	4yards		

Description and Location of:

1.) Work performed today: Working on layout level 4, working on level 3 up on second lift. Grouting first lift on north west, west.

2.) Areas of masonry delayed and causes of delays: Sleeves on level 4 to 3 are in webs and having to cut cmu to stab bars.

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 10/23/2017

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____Min_____Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman			
B.	Mason	1	4	
C.	Labor	1	4	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone			
Frames			
Grout			

Description and Location of:

1.) Work performed today: Started cutting oblisk

2.) Areas of masonry delayed and causes of delays:

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 10/24/2017

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: _____ Min _____ Max _____

Rainfall _____ Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman			
B.	Mason	1	9	
C.	Labor	1	9	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone			
Frames			
Grout			

Description and Location of:

1.) **Work performed today:** Finished cutting oblisk and set two oblisk

2.) **Areas of masonry delayed and causes of delays:**

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marian Square Date: 10-25-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 68 Min 47 Max 68

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9	
B.	Mason	1	9	
C.	Labor	1	9	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	5		
Frames			
Grout			

Description and Location of:

1.) Work performed today: Set stone at 3rd floor tarace and clean up

2.) Areas of masonry delayed and causes of delays: Very slow work

3.) Verbal instructions received:

4.) Equipment received on site today:.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marian Square Date: 10-26-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 69 Min 51 Max 69

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9	
B.	Mason	1	9	
C.	Labor	1	8	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	39 LF		
Frames			
Grout			

Description and Location of:

1.) Work performed today: Set stone at 3rd floor Tarrace and clean up

2.) Areas of masonry delayed and causes of delays:

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

ME OF JOB Marion Square Date: 10-27-17

B# 1259

ather: (Clear) (P.Cloudy) (Cloudy): Temperature: 69 Min 59 Max 71

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	6.5	
	Mason	1	6.5	
C.	Labor	1	6.5	
D.	Operator			
	Sub Crews			
ıb 1	Mason			
ıb 1	Labor			
ıb 2	Mason			
ub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	40 LF		
Frames			
Grout			

escription and Location of:

) Work performed today: Laid stone at 3rd floor terrace and clean up

eas of masonry delayed and causes of delays:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 10-24-16

JOB# 1259

Weather: (Clear) X (P.Cloudy) (Cloudy): Temperature: 84* Min_____ Max_____

Rainfall_____ Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10.5	
B.	Mason	8	54	
C.	Labor	8	72	
D.	Operator	1	10.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	579		
Arch. Block			
Stone			
Frames			
Grout	4yards		

Description and Location of:

1.) Work performed today: Working on layout level 4, working on level 3 up on second lift. Grouting first lift on north west, west.

2.) Areas of masonry delayed and causes of delays: Sleeves on level 4 to 3 are in webs and having to cut cmu to stab bars.

3.) Verbal instructions received:

4.) Equipment received on site today:

R - 16530

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 10-25-16

JOB# 1259

Weather: (Clear) X (P.Cloudy) (Cloudy): Temperature: 84* Min_____ Max_____

Rainfall_____ Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10.5	
B.	Mason	9	71	
C.	Labor	8	64	
D.	Operator	1	10.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	531		
Arch. Block			
Stone			
Frames			
Grout	3.5		
Lent.	14		

Description and Location of:

1.) **Work performed today:** Laying block on level 3, laying block at retainer wall east, setting header lent. On level 3 pouring grout on level 3 second lift.

2.) **Areas of masonry delayed and causes of delays:**

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 10-26-16

JOB# 1259

Weather: (Clear) X (P.Cloudy) (Cloudy): Temperature: 84* Min_____ Max_____

Rainfall_____ Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	11	
B.	Mason	7	56	
C.	Labor	9	85	
D.	Operator	1	11	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	395		
Arch. Block			
Stone			
Frames			
Grout	4.5		
Lent.			

Description and Location of:

1.) **Work performed today:** Workingbon winow layout at level 4, keying out level 3, worked on mock up, working on vest 300 west and east up scafold high.

2.) **Areas of masonry delayed and causes of delays:** Was told by Ed with BBC. That the harness for one of the masons was to small an we neeed to get him a larger one. The one he has been wearing is the largest that i could order. I will let him go tomorrow after he finishes all on ground work.

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** Mortar, and grout.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPØRT

NAME OF JOB Marion Square Date: 10-27-16

JOB# 1259

Weather: (Clear) X (P.Cloudy) (Cloudy): Temperature: 84* Min_____ Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	11	
B.	Mason	7	50	
C.	Labor	9	55	
D.	Operator	1	11	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	421		
Arch. Block			
Stone			
Frames			
Grout			
Lent.			

Description and Location of:

1.) Work performed today: Worked on mock up, worked on L3,L4.

2.) Areas of masonry delayed and causes of delays: Dowels threw slab on 32" centers are missing having Lethco drill dowels.

3.) Verbal instructions received:

4.) Equipment received on site today: Load of grout.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPØRT

NAME OF JOB Marion Square Date: 10- 28-16

JOB# 1259

Weather: (Clear) X (P.Cloudy) (Cloudy): Temperature: 84* Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	11	
B.	Mason	5	46	
C.	Labor	6	48	
D.	Operator	1	11	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	235		
Arch. Block			
Stone	7		
Frames			
Grout	3 yards		
Lent.			

Description and Location of:

1.) **Work performed today:** Laid mock up stone, window sill at L3, laid block on L4, keying out L3 north.

2.) **Areas of masonry delayed and causes of delays:** Saws that were brought to us from the office one had water in the oil I drained it and refilled it, it still will not run, the other one I have changed oil , plugs tightened up the guards on it it runs 20 min. And fowels out the spark plug, choke switch is lose and vibrates and chokes its self out.

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPØRT

NAME OF JOB Marion Square Date: 10- 29-16

JOB# 1259

Weather: (Clear) X (P.Cloudy) (Cloudy): Temperature: 84* Min_____ Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	8	
B.	Mason	4	17.5	
C.	Labor	6	43.5	
D.	Operator	1	8	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	37		
Arch. Block			
Stone			
Frames			
Grout			
Lent.	6		

Description and Location of:

1.) Work performed today: Keying out, setting lentels Level 3, cleaning off trash off of 3rd floor

2.) Areas of masonry delayed and causes of delays:

3.) Verbal instructions received:

4.) Equipment received on site today: We used skid pan from lethco to add in the clean up on level 3

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 10-31-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfal Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10.5	
B.	Mason	3	25	
C.	Labor	6	59	
D.	Operator	1	10.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	222		
Arch. Block			
Stone			
Frames			
Grout			
Lentels	5		

Description and Location of:

1.) **Work performed today:** Working on vest 300 east and west,key in level 3 north north west side,set over door lentels time and material. Grouted the 4 th. Floor window sills at north, north east corner. Made ready for sills. Worked on stairway 4 ready to set rebar and inspect.

2.) **Areas of masonry delayed and causes of delays:** Forth floor thru slab dowel sleeves are missing on column line B west side can not pour and keyed out. At column line 6 to 10 sout same condition. B.B.C was told of this in A.M. Sub meeting.

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** 20" inch saw from yard. And two 14" were sent back.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 11-1-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 75* Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9.5	
B.	Mason	5	36	
C.	Labor	8	69	
D.	Operator	1	9.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	427		
Arch. Block			
Stone			
Frames			
Grout	4.5		

Description and Location of:

1.) **Work performed today:** Working on stairway 4, working on l1 at foyer, keying out level 3, working on vest. 300

2.) **Areas of masonry delayed and causes of delays:** Waitting on RFI for 3rd floor missing sleeves, started moving material up to level 4. Other trades have staged material up on 4 which is in our way. Level one at D windows north north-west area. At CL 12 D window the c.c does not step down to receive cast stone. I made Dan with BBC aware of this issue.

3.) **Verbal instructions received:** Dan with BBC told me to put in course at window D first floor north at CL 12 where CC does not step down. It has been installed.

4.) **Equipment received on site today:** Grout

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-2-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 78* Min_____ Max_____

Rainfall_____ Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	11.5	
B.	Mason	5	41	
C.	Labor	7	65.5	
D.	Operator	1	11.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	502		
Arch. Block			
Stone			
Frames			
Grout	3		

Description and Location of:

1.) Work performed today: Worked down on east retaining wall, worked on level 4 cmu, worked on level 2 stairway 4. Completed cmu at level 1 north north west.

2.) Areas of masonry delayed and causes of delays: Recieved answer on RFI for missing sleeves on level 3to 4. Grout inspector had to leave and said he would return at 2 pm.

3.) Verbal instructions received:

4.) Equipment received on site today: Grout and #7 rebar

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-3-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	12	
B.	Mason	4	25.5	
C.	Labor	7	85.5	
D.	Operator	1	11.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	316		
Arch. Block			
Stone			
Frames			
Grout	4		

Description and Location of:

1.) Work performed today: Laid block at stairway 4, relaid the block on 4 th floor where liftco took them up todrill and clean out sleeves. Pointed up 3rd to 4th floor slab, make ready for waterproofers. Grouted 3rd floor south, south east corner.

2.) Areas of masonry delayed and causes of delays: Liftco was to drill a dowel into the shear wall at level 3 south because of missing sleeves at 32 oc. Liftco drilled and didnt let the inspector check the depth or cleanliness of the hole drilled before the epoxy and dowel were installed this took a few hours to clear up. The framed doors for the buck hoist were to small RPC worked on making them larger. They strated on the 4 the forth floor which stopped the hoist from coming to level 4 where we are working. We had to load mud and block at the 3 rd floor and walk the material up to the forth. Door was finished at 3 pm friday.

3.) Equipment received on site today: Load of grout.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-4-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	8.5	
B.	Mason	5	39	
C.	Labor	8	49	
D.	Operator	1	8.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	417		
Arch. Block			
Stone			
Frames			
Grout	3.5		

Description and Location of:

1.) **Work performed today:** Woring on level 4 up to window sills, working on stairway 4 we are at level two window cross over. Working on level 3 keyout south.

2.) **Areas of masonry delayed and causes of delays:**

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-5-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____Min_____Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	8	
B.	Mason	5	40	
C.	Labor	7	56	
D.	Operator	1	8	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	170		
Arch. Block			
Stone	34		
Frames			
Grout	3.5		

Description and Location of:

1.) **Work performed today:** Worked on level 4, window sills on south, east, north, and west, laid cum at window sills, pointed up level 3 to forth floor slab.

2.) **Areas of masonry delayed and causes of delays:**

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Hotel Date: 11-6-17

JOB# 1239

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 76 Min 61 Max 76

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	8.5	
B.	Mason	1	8.5	
C.	Labor	1	8.5	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	2		
Arch. Block			
Stone			
Frames			
Grout	.5 Yd		

Description and Location of:

1.) Work performed today: Poured grout behind stone base at north elevation and laid 2 block to build up small base peices at door way, chipped out scuppers at 6th floor terrace

2.) Areas of masonry delayed and causes of delays: Grout pushed out 2 stone base peices and we had to clean up and relay them

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-7-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 84 Min 58 Max 84

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9	
B.	Mason	1	9	
C.	Labor	1	9	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	3 LF		
Frames			
Grout	~ 5 Yd.		

Description and Location of:

1.) Work performed today: Replaced stone at the window we cut out Friday, poured grout and installed flashing

2.) Areas of masonry delayed and causes of delays:

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-8-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 69 Min 52 Max 69

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9.5	
B.	Mason	1	9.5	
C.	Labor	1	9.5	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	25 LF		
Frames			
Grout			

Description and Location of:

1.) Work performed today: Set stone, built scaffold and clean up

2.) Areas of masonry delayed and causes of delays:

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-9-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 57 Min 49 Max 57

Rainfall 1 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	5	
B.	Mason	1	4	
C.	Labor	1	3.5	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	7 LF		
Frames			
Grout	~3		

Description and Location of:

1.) **Work performed today:** Built scaffold, cut stone, set stone, lay out to start laing stone and clean up and pour grout

2.) **Areas of masonry delayed and causes of delays:** started raining at 11:00 am

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-10-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 66 Min 39 Max 66

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	8	
B.	Mason	2	15	
C.	Labor	2	14	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	37LF		
Frames			
Grout			

Description and Location of:

1.) Work performed today: Laid stone at 3rd floor terrace and clean up

2.) Areas of masonry delayed and causes of delays:

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-7-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____ Min_____ Max_____

Rainfall_____ Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	11	
B.	Mason	7	57.5	
C.	Labor	8	78.5	
D.	Operator	1	11	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	606		
Arch. Block			
Stone			
Frames			
Grout	4.5		

Description and Location of:

1.) **Work performed today:** Working on level 4 sout east,east. Working in stairwell 4 ready for rebar inspection. Filling in cmu at buck hoist area level 3 where we were told to leave out for buck hoist. Keying out level 3 where rebar questions were answered.

2.) **Areas of masonry delayed and causes of delays:**

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** One load of mortor.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-8-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10	2
B.	Mason	8	69	8
C.	Labor	8	78	4
D.	Operator	1	10	1
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	755		
Arch. Block			
Stone			
Frames			
Grout			
Lentels	2		

Description and Location of:

1.) Work performed today: Worked on level 4 east, north east and north all up to 4'8",worked on level 2 vest. 300 bl,lv. Keying in level 3, working on level one at stairwell 3 up to 4'8"

2.) Areas of masonry delayed and causes of delays: There is a fire hydrant pipe threw wall that has a double hose connection on it that is inside wall at stairway 3 BBC said they woud have it removed it ~~has not been removed as of end of day today~~ we laid around it and will fill in when it is removed.

3.) Verbal instructions received:

4.) Equipment received on site today: Load of mortor

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-9-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:____ Min____ Max____

Rainfall____ Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	11	
B.	Mason	7	54	
C.	Labor	8	80	
D.	Operator	1	11	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	783		
Arch. Block			
Stone	3		
Frames			
Grout	4		

Description and Location of:

1.) Work performed today: Worked on level 4, from CL 14 to 1 north, west from CL A to V South CL 1-17. Started layout on atrium level 4.

2.) Areas of masonry delayed and causes of delays: Trucks that are dilevering material to other trade are parking rigs in front of buck hoist deck. Level 5 and level 6 need to be cleaned before we can stage material.

3.) Verbal instructions received:

4.) Equipment received on site today: Load of grout

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB: Marion Square Date: 11-10-16

JOB#: 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: ____ Min ____ Max ____

Rainfall ____ Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10	
B.	Mason	6	48	
C.	Labor	7	62.5	
D.	Operator	1	10	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	836		
Arch. Block			
Stone			
Frames			
Grout	4		

Description and Location of:

1.) Work performed today: Worked on level 4 , on the second lift on south, south east, east walls ready to cross with lentels.

2.) Areas of masonry delayed and causes of delays:
Called block company lisa told me she was out of block till monday and would ship our load out.

3.) Verbal instructions received:

4.) Equipment received on site today: Had a load of 6" block ordered for today for level 4

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 11-11-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10	
B.	Mason	7	55.5	
C.	Labor	7	66	
D.	Operator	1	10	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	594		
Arch. Block			
Stone	11		
Frames			
Grout	3.5		
Lentels	6		

Description and Location of:

1.) **Work performed today:** Worked on level 4 atrium, setting lentels on level 4 south shouth east. Cl 35-39 south and east cl N-V

2.) **Areas of masonry delayed and causes of delays:**

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** 8" block

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

DEFENDANT LIBRARY ASSOCIATES, LLC'S

TRIAL EXHIBIT #88

Part 5 of 5

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-12-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	7	
B.	Mason	8	33	
C.	Labor	6	38	
D.	Operator	1	7.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	321		
Arch. Block			
Stone			
Frames			
Grout	3		

Description and Location of:

1.) **Work performed today:** Worked on level one foyer.

2.) **Areas of masonry delayed and causes of delays:** On the A. Drawings level one at stairway one the drawings refer to detail A319. In that detail it shows a louver opening at the stairwell 4'4 1/2" aff to start opening. This is the only detail that shows the opening all the other details do not show one. Got with Dan w/ BBC and he said it does not have one at this location.

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Macion Square Date: 11-13-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 67 Min 46 Max 67

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9	
B.	Mason	1	9	
C.	Labor	1	9	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	38 LF		
Frames			
Grout			

Description and Location of:

1.) **Work performed today:** set stone at first floor windows took down scaffold, built scaffold on north elevation and clean up

2.) **Areas of masonry delayed and causes of delays:**

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-14-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 62 Min 42 Max 62

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	8	
B.	Mason	1	8	
C.	Labor	1	8	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	17 LF		
Frames			
Grout	.5		

Description and Location of:

1.) Work performed today: Set stone and poured grout at entrance way on north elevation and clean up

2.) Areas of masonry delayed and causes of delays:

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-15-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 61 Min 42 Max 61

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9	
B.	Mason	1	9	
C.	Labor	1	9	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	12		
Arch. Block			
Stone	12 LF		
Frames			
Grout			

Description and Location of:

1.) **Work performed today:** Set stone at north entrance, laid blocks at window at 1st floor stairs north elevation took down stone at 9th floor and relaid them and clean up

2.) **Areas of masonry delayed and causes of delays:**

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-16-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 71 Min 45 Max

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	8	
B.	Mason	1	8	
C.	Labor			
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	158 Pcs		
Frames			
Grout			

Description and Location of:

1.) Work performed today: Take down scaffold, build scaffold, cut stone, lay stone and clean up

2.) Areas of masonry delayed and causes of delays: Our labor laid out of work today so Mike and myself had to do it all

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 11/13/2017

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 67 Min 46 Max 67

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9	
B.	Mason	1	9	
C.	Labor	1	9	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	38 LF		
Frames			
Grout			

Description and Location of:

1.) **Work performed today:** Set stone at first floor windows on north elevation took down scaffold built scaffold and clean up

2.) **Areas of masonry delayed and causes of delays:**

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 11-14-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 62 Min 42 Max 62

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	8	
B.	Mason	1	8	
C.	Labor	1	8	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	17 LF		
Frames			
Grout	.5		

Description and Location of:

1.) Work performed today: Set stone and poured grout at entrance on north elevation and clean up

2.) Areas of masonry delayed and causes of delays:

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 11-15-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 62 Min 42 Max 62

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9	
B.	Mason	1	9	
C.	Labor	1	9	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick	12		
Block			
Arch. Block			
Stone	12 LF		
Frames			
Grout			

Description and Location of:

1.) **Work performed today:** Set at north entrance laid block at window first floor stairs on north elevation took down stone at ninth floor and relaid them and clean up

2.) **Areas of masonry delayed and causes of delays:**

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 11-16-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 71 Min 45 Max 71

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	8	
B.	Mason	1	8	
C.	Labor			
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	15		
Frames			
Grout			

Description and Location of:

1.) **Work performed today:** Take down scaffold ,build scaffold ,cut stone ,laid stone and clean up

2.) **Areas of masonry delayed and causes of delays:** Our labor laid out of work today so Mike and myself had to do it all

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 11-17-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 63 Min 49 Max 62

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1		
B.	Mason	1		
C.	Labor			
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	22 Pcs		
Frames			
Grout			

Description and Location of:

1.) Work performed today: Laid stone ,took down scaffold and clean up at south elevation

2.) Areas of masonry delayed and causes of delays:

all

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-14-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	3	
B.	Mason	7	56	
C.	Labor	7	66	
D.	Operator	1	10	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	578		
Arch. Block			
Stone			
Frames			
Grout	4		

Description and Location of:

1.) Work performed today: Worked on level 1 foyer, worked on level 4 at atrium area, keyed in level 3 at buck hoist.

2.) Areas of masonry delayed and causes of delays: Other subs are bringing supply trucks in and not keeping them out from in front of the buck hoist platform where ONS lands mortor and grout for upper floors. This was an hour and a half delay on friday and then an hour delay on Monday. This is a big problem for our grout pump.

3.) Verbal instructions received:

4.) Equipment received on site today: 6 inch block.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-15-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____Min_____Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9	
B.	Mason	8	54	
C.	Labor	7	62	
D.	Operator	1	9	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	527		
Arch. Block			
Stone			
Frames			
Grout			
Lentels	12		

Description and Location of:

1.) **Work performed today:** Worked on level one foyer, all walls and columns at level one are up to 15' elevation. Level 4 all walls and window lentels are installed fro south CL 34 to 39, east CL V to A, CL north 39 to 34.

2.) **Areas of masonry delayed and causes of delays:** Threw floor sleeves at level 5 to 4 south side from CL 39 to 34 when stabbed threw are hitting outside of our walls.

At 15' elevation foyer from CL R to V1 the concrete is out of range. At CL v1 the concrete is 1 1/4" inside and at CL R it is 2" ouside our walls. I showed Dan the problem and we are going to run with our line.

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-16-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10.5	
B.	Mason	7	52	
C.	Labor	9	81.5	
D.	Operator	1	10.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	530		
Arch. Block			
Stone			
Frames			
Grout	4		

Description and Location of:

1.) **Work performed today:** Worked on level one at foyer, worked level 4, worked on pointimg up the outside of building, worked on mock up and removing stone. Grouting level 4.

2.) **Areas of masonry delayed and causes of delays:** Buck hoist was beeing worked on today he started at 10 am. At noon I sent most of the masons home could not get material to the 4 th floor. Our out rigger has been blocked from liftco and their decks

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** Load of mortor, snow fence, ex.cords,stapler and staples, GFIs, cup grinder blade, and 4" masonry blades.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-17-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____ Min_____ Max_____

Rainfall_____ Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10	
B.	Mason	6	49	
C.	Labor	12	114.5	
D.	Operator	1	10	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	604		
Arch. Block			
Stone			
Frames			
Grout	3		

Description and Location of:

1.) **Work performed today:** Worked on level 4, worked on scaffolding on level 1 foyer,

2.) **Areas of masonry delayed and causes of delays:** Mcc installed stub ups thru slab from 3-4 . BBC was notifified and twice, told them to stop installation, since the stub ups interfere with main lane of travel causing delays in production.

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** Lentels

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-18-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10.5	
B.	Mason	7	60	
C.	Labor	9	88	
D.	Operator	1	10.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	648		
Arch. Block			
Stone			
Frames			
Grout	5		

Description and Location of:

1.) **Work performed today:** Worked on level 4 cmu, worked on mock up taking stone down,working on patching east elevations,working on level one pump room laid out.

2.) **Areas of masonry delayed and causes of delays:** Level one at pump room is laid out Over head protection is in wall line need this moved to start wall

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** Scaffolding came in for level one foyer, grout hog mixer, sent the broken one back.sent reshore poles back with scaffolding truck.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-19-2016

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	7	
B.	Mason	5	28	
C.	Labor	11	77	
D.	Operator	1	7	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	212		
Arch. Block			
Stone			
Frames			
Grout	1.5		
Lentels	16		

Description and Location of:

1.) **Work performed today:** Scaffold in foyer 1st floor
Lenlels installed cl 30-1 north, a-h west side
Cmu south side cl 1-16 up to key out Unloaded lental delivery

2.) **Areas of masonry delayed and causes of delays:** Stub ups from Mcc still blocking routes

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** 6" cmu

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-20-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 59 Min 46 Max 59

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	8	
B.	Mason	1	8	
C.	Labor	1	8	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	26LF		
Frames			
Grout			

Description and Location of:

1.) Work performed today: set stone at arch window on 3rd floor terrace until we couldn't find anything to anchor the stone to I got with Tim spano he said he would take down dry wall and get something in there for us

2.) Areas of masonry delayed and causes of delays:

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 11-21-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 71 Min 56 Max 71

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9	
B.	Mason	1	9	
C.	Labor	1	9	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	25 Pcs		
Frames			
Grout			
Stone sills	3		

Description and Location of:

1.) **Work performed today:** Laid stone at north elevation and clean up

2.) **Areas of masonry delayed and causes of delays:**

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 11-22-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 66 Min 59 Max 66

Rainfall 0 Inches

Time

		# of Employees	Employee -Hours	EWO Hours
A.	Foreman	1	1	
B.	Mason	1	7.5	
C.	Labor	1	7.5	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	25 Pcs		
Frames			
Grout			

Description and Location of:

1.) Work performed today: Laid stone at north elevation and clean up and build scaffold

2.) Areas of masonry delayed and causes of delays:

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 11-20-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 59 Min 46 Max 59

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	8	
B.	Mason	1	8	
C.	Labor	1	8	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	26 LF		
Frames			
Grout			

Description and Location of:

1.) Work performed today: Set stone at arch window on third floor terrace until we got to the point there was nothing to ancher the stone to Tim Spano said he would take down the drywall and get something in there for us

2.) Areas of masonry delayed and causes of delays:

all

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-21-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10	
B.	Mason	8	71	
C.	Labor	8	77.5	
D.	Operator	1	10	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	550		
Arch. Block			
Stone	2		
Frames			
Grout	4.5		
Lentels	12		

Description and Location of:

1.) **Work performed today:** Worked on level 4. Cmu, window sills, lentels. Poured grout on level one foyer.

2.) **Areas of masonry delayed and causes of delays:** Concrete is out of range at the second floor elevation foyer.

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** One load of grout.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-22-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____ Min_____ Max_____

Rainfall_____ Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10.5	
B.	Mason	6	47.5	
C.	Labor	8	100	
D.	Operator	1	10.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	592		
Arch. Block			
Stone			
Frames			
Grout	4.5		
Lentels	11		

Description and Location of:

1.) **Work performed today:** Worked on level 4 set last of the lentels in the main area. Started cmu walls at stairways. Laying block at second floor elevation foyer. Started work in basement at CL B east. Filled in the remainder of incompleted CMU walls in this area.

2.) **Areas of masonry delayed and causes of delays:** We still need an answer on missing threw slab rebar sleeves area 4 is ready to pour and key out.

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** Load of airriscraft for mock up panel.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-23-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____Min_____Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	7	
B.	Mason	7	42.5	
C.	Labor	8	55	
D.	Operator	1	7	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	374		
Arch. Block			
Stone			
Frames			
Grout	.5		
Lentels	2		

Description and Location of:

1.) **Work performed today:** Worked on foyer south west corner, wall is up to 5' above 2nd floor elevation. Worked on mock up, removed remainder of cast stone. Completed basement. Grouted stairway 4 at 3rd floor window opening.installed lentels at 3rd floor vest.

2.) **Areas of masonry delayed and causes of delays:**

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marian square Date: 11-27-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 66 Min 44 Max 66

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	4	
B.	Mason	1	8.5	
C.	Labor	1	8.5	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	30		
Frames			
Grout			

Description and Location of:

1.) Work performed today: Laid stone at north elevation and clean up at first floor

2.) Areas of masonry delayed and causes of delays: Still do not have anything to ancher stone to at arch window at Third terrace

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marian square Date: 11-28-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy) Temperature: 68 Min 52 Max 68

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	8.5	
B.	Mason	1	8.5	
C.	Labor			
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	44 Pcs		
Frames			
Grout			

Description and Location of:

1.) Work performed today: Laid stone at north elevation and clean up at first floor

2.) Areas of masonry delayed and causes of delays: Still do not have anything to ancher stone to at arch window at Third terrace

3.) Verbal instructions received: Ryan wanted me to take all our materials off the third floor terrace so the tile man can start installing tile I told him no because if they had their part ready we would have our materials installed

4.) Equipment received on site today:

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marian square Date: 11-29-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 76 Min 52 Max 76

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	8.5	
B.	Mason	1	8.5	
C.	Labor	1	8.5	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	45 Pcs		
Frames			
Grout			

Description and Location of:

1.) Work performed today: Laid stone at north elevation and clean up at first floor Take down scaffold ,build scaffold stock scaffold

2.) Areas of masonry delayed and causes of delays: Still do not have anything to ancher stone to at arch window at Third terrace

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marlon square Date: 11-30-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 74 Min 66 Max 74

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	8.5	
B.	Mason	1	8.5	
C.	Labor	1	8.5	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	49 Pcs		
Frames			
Grout			

Description and Location of:

1.) **Work performed today:** Laid stone at north elevation and clean up at first floor

2.) **Areas of masonry delayed and causes of delays:** Still do not have anything to ancher stone to at arch window at arch window on third floor terrace

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion square Date: 12-1-17

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: 71 Min 65 Max 71

Rainfall 0 Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	7	
B.	Mason	1	7	
C.	Labor	1	6	
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone	25		
Frames			
Grout			

Description and Location of:

1.) Work performed today: Laid stone at north elevation and clean up at first floor Take down scaffold ,build scaffold stock

2.) Areas of masonry delayed and causes of delays: Still do not have anything to ancher stone to at arch window at arch window on third floor terrace

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-28-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10.5	
B.	Mason	6	54	
C.	Labor	7	69.5	
D.	Operator	1	10.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	174		
Arch. Block			
Stone	5		
Frames			
Grout	0		

Description and Location of:

1.) **Work performed today:** Setting airriscraft stone on mock up. Laid block at west foyer up to 5' above 2 nd floor elevation.

2.) **Areas of masonry delayed and causes of delays:** S&ME inspector failed the grout pour on the south foyer due to what he said was to much mortor overlay inside the rebar cells. I have not heard any answer on rebar sleeves missing on level 5 to 4 slab. Buckhoist down most of the day.

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** Cast stone for Pergola came in at 230pm.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-29-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Light Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9.5	
B.	Mason	7	56	
C.	Labor	9	77.5	
D.	Operator	1	9.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	486		
Arch. Block			
Stone			
Frames			
Grout	4		

Description and Location of:

1.) **Work performed today:** Worked on level 2 foyer, worked on first floor pump room, worked on stairwell 3. Working on point up levels 1 to 3.

2.) **Areas of masonry delayed and causes of delays:** Main entrance to the building is full of material from other trades. I need to push tubs of grout to the foyer area threw the building threw this entrance. This is holding ONSM up

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** Load of grout

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-30-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	15.5	
B.	Mason	5	32.5	
C.	Labor	8	81.5	
D.	Operator	1	15.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	0		
Arch. Block			
Stone	40		
Frames			
Grout	4		

Description and Location of:

1.) **Work performed today:** Worked on mock up airriscraft, worked on level 2 at arches poured grout, worked at foyerpouring grout. Set up to start level 4 grout to keyout walls

Had guys pointing up level one exterior.

2.) **Areas of masonry delayed and causes of delays:** Liftco waspouring the last pour level 9 pump trucks set up in front of mixers. We were blocked off till 10:15 am. Crane operator went home at noon.

Pre cast for mock up missing two peices. Will drive and pick them up. Sent all but 2 masons home at 2 pm.

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** Load of grout, shovels, gloves,shrink wrap,glasses.

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-1-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9.5	
B.	Mason	8	57.5	
C.	Labor	8	72.5	
D.	Operator	1	9.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	294		
Arch. Block			
Stone	14		
Frames			
Grout	4 yards		

Description and Location of:

1.) **Work performed today:** Completed setting stone on mock up panel, completed pagora Mock up, worked on 4th floor grout and key out. Layed out windows second floor foyer had Pete with BBC verify the layout. Worked on rub down, patch and fill of the exterior. Worked on cmu at stairway three up to second floor elevation window. Grouted Foyer south at circular window elevation.

2.) **Areas of masonry delayed and causes of delays:**

Liftco had the crane all day could not feed material to the foyer area. Had Pete with BBC verify the lay out of the veneer custom extrusion windows on the west side between CL S&R west. The center of this window lines up with windows at with elevation 3 room A17 301, elevation 4 A17 401, and elevation 5 A17 501. Up the whole elevation we are within 1/2".

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** Pressure washer

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-2-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10.5	
B.	Mason	8	59.5	
C.	Labor	9	92	
D.	Operator	1	10.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	484		
Arch. Block			
Stone			
Frames			
Grout	4.5		

Description and Location of:

1.) **Work performed today:** Started layout on 5th floor, keying out 4th floor. Patch and fill exterior elevations.

2.) **Areas of masonry delayed and causes of delays:** slab sleeves from 6th through 5th floor Have not been identified this is very crucial to the layout and placement of stone banding on level 5. West and south exterior cluttered with material and machinery, we cant get our lift in these areas to patch

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** First load of stone banding for level 5.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-3-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____Min_____Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10.5	
B.	Mason	7	52.5	
C.	Labor	10	90.5	
D.	Operator	1	10.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	130		
Arch. Block			
Stone			
Frames			
Grout	4.5		

Description and Location of:

1.) **Work performed today:** Keying out and grouting level 4 Washed and rubbed down Both mock ups. Piped in mortar on mock up pedastel , organized material in the basement ,cleaned sw corner , continued grouting lvl4 , floated and pointed up on 4-5 and level 1 exterior,

2.) **Areas of masonry delayed and causes of delays:** Piping of pedestal will require a second washing And due to 24 dry time may delay its Monday timeline

3.) **Verbal instructions received:** Per Tim BBC piped in pedestals after explaining that was not the proper application.

4.) **Equipment received on site today:** Load of 6"cmu recieved for fifth floor

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-5-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____Min_____Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10	
B.	Mason	6	48	
C.	Labor	9	52.5	
D.	Operator	1	10	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	437		
Arch. Block			
Stone			
Frames			
Grout	4		

Description and Location of:

1.) **Work performed today:** Working on level 4 top out, working on level 5 , working on punch out of exterior.finished pipping in mortor at mock up.

2.) **Areas of masonry delayed and causes of delays:**

Sleeves on level 6 slab have not yet been cleaned or identify . South and east elevations have not been cleared for ONSM to work on pointing up exterior. Liftconhad controol of crane all day due to removal of material on site.

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** We expected a load of banding stone for 5 th floor it didnt show up

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 11-6-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy); Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	0	0	
B.	Mason	0	0	
C.	Labor	0	0	
D.	Operator	0	0	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	0		
Arch. Block			
Stone			
Frames			
Grout	0		

Description and Location of:

1.) Work performed today: No work today due tonrain

2.) Areas of masonry delayed and causes of delays:

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-7-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	11.5	
B.	Mason	8	67	
C.	Labor	9	101.5	
D.	Operator	1	11.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	718		
Arch. Block			
Stone			
Frames			
Grout	5		

Description and Location of:

1.) **Work performed today:** Worked on level 4 keying out and grouting, level 5 first two courses. From cl 39-1 north, CL A-V west, CL 1-29 south. Will complete 5th floor layout tomorrow. Had two mason working on punch out of exterior north.

2.) **Areas of masonry delayed and causes of delays:** Dan with BBC called me at 230 told me he had the crane available for scaffolding on the foyer area. Me and two labors sterded to stage at the ground south and all i could get was two picks. 2:30-4:00pm. Liftco was setting rebar panels for arches!

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** Load of mortor, load of stone banding.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-08-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9.5	
B.	Mason	8	67.5	
C.	Labor	9	84.5	
D.	Operator	1	9.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	697		
Arch. Block			
Stone			
Frames			
Grout	4.5		
Lentels	2		

Description and Location of:

1.) **Work performed today:** Finished the 16" of cmu on level 5, keying out level 4, doing punch out on exterior. I have 4 men on this. We are using our boom lift an Liftco is letting us use their as well. Extended scaffolding at ~~foyer one more buck.~~

2.) **Areas of masonry delayed and causes of delays:** BBC. Is jumping buck hoist to level 8 tomorrow. It will not be in operation till this is done.

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** Load of mortor

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-09-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____Min_____Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9	
B.	Mason	7	54	
C.	Labor	8	70	
D.	Operator	1	9	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	136		
Arch. Block			
Stone			
Frames			
Grout	1		

Description and Location of:

1.) **Work performed today:** Worked on foyer, Grouting on level 5 for stone. Punching out extrior

2.) **Areas of masonry delayed and causes of delays:** Buck hoist was being moved up, liftco Pouring grout on upper floors

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** Load of grout

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-10-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	5	
B.	Mason	8	36	
C.	Labor	5	25	
D.	Operator	1	5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	67		
Arch. Block			
Stone			
Frames			
Grout			

Description and Location of:

1.) **Work performed today:** Worked on the foyer

2.) **Areas of masonry delayed and causes of delays:** Buck hoist down, labor force didnt show up.

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-12-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9	
B.	Mason	8	60	
C.	Labor	10	90.5	
D.	Operator	1	9	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	537		
Arch. Block			
Stone			
Frames			
Grout	3.5		

Description and Location of:

1.) **Work performed today:** Worked on the foyer area, worked on fixing window in room #311 mock up. Worked on punch out of exterior of building for waterproofers.

2.) **Areas of masonry delayed and causes of delays:** Level 6 has trash and horizontal bars at base of vertical bars we need these removedbefore we can start lay out.

3.) **Verbal instructions received:**

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-13-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____Min_____Max_____

Rainfall Light Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9	
B.	Mason	10	80	
C.	Labor	10	90	
D.	Operator	1	9	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	346		
Arch. Block			
Stone			
Frames			
Grout	5		

Description and Location of:

1.) **Work performed today:** Worked on level foyer, worked on 5th floor, worked on pointing up ext.

2.) **Areas of masonry delayed and causes of delays:** Slow on gettin the crane, waited on dowels to be drilled in the shear walls, rain off and on all day

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** Grout.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-14-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Light Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10.5	
B.	Mason	10	80	
C.	Labor	10	98	
D.	Operator	1	10.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	613		
Arch. Block			
Stone			
Frames			
Grout	4		

Description and Location of:

1.) **Work performed today:** Worked on foyer, worked on, and completed Grout on level 5. Pointed up exterior. Staging block to start level 6. 6" cmu. Removed out rigger that was staged 4th floor north atrium.

2.) **Areas of masonry delayed and causes of delays:** We need to start 6th floor parapet wall Lithco has Not cleaned this area all around the building. Other trades have material staged along A critical path to supply masons. We had a hard time geting the crane today they were Hanging steel in elevator.

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** Load of 8" CMU for 6 th floor parapet.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-15-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____ Min_____ Max_____

Rainfall_____ Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	13.5	
B.	Mason	9	67.5	
C.	Labor	9	108	
D.	Operator	1	13.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	601		
Arch. Block			
Stone	3		
Frames			
Grout	5		

Description and Location of:

1.) **Work performed today:** Completed CMU on foyer , started Grouting high lift, started layout On level 6 exterior 6" CMU. On CL S, Between CL 33 and 38. Started keying in the foyer, started level 6" CMU where ONSM outrigger was staged. Working on stairwell 4 and 3. Cutting and moving windows are in wrong location. Set window sills at L.3

2.) **Areas of masonry delayed and causes of delays:** I had a hard time getting the crane today. Was able To start grouting the foyer area at 2 pm. This area has to be finished by monday so we had to stay till 6 pm(dark) due to not being able to get the crane till then. Liftco needs to clean up level 6 parapet they started today.

3.) **Verbal instructions received:** Dan and Tim with BBC. Came to me this moring on level 6 and asked me why i was not starting the parapet wll i showed them where liftco had not cleaned the area and other trades material staged in our way. They asked why i had not started the stone on level 5 i told them they had not provided me with a lifting method.

4.) **Equipment received on site today:**

6 " CMU for level 6.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-16-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____Min_____Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman			
B.	Mason			
C.	Labor			
D.	Operator			
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block			
Arch. Block			
Stone			
Frames			
Grout			

Description and Location of:

1.) Work performed today: Company Christmas party today we will not be working. We will be back to work on 12-17-16. We will need the crane and buck hoist.

2.) Areas of masonry delayed and causes of delays:

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Margion Square Date: 12-17-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____Min_____Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10	
B.	Mason	8	60	
C.	Labor	10	108	
D.	Operator	1	10	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	54		
Arch. Block			
Stone			
Frames			
Grout	7		

Description and Location of:

1.) **Work performed today:** Worked on foyer, grouting,keying out and taking down scaffold. Started core drilling stone for level 5 band. 2 corners have 15 rebar running threw them. Rubbing down and brushing exterior of building. Cleaned and moved mmaterial off of level 4

2.) **Areas of masonry delayed and causes of delays:** There was no one to run the buck hoist till 830 am. Ryan with BBC showed up after 8 am. Core drillling of stone has been a slow After drilling 12 holes the first bit broke due to all the rebar and wire in the stone.

3.) **Verbal instructions received:**

4.) **Equipment received on site today:** None

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-20-16 19

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____Min_____Max_____

Rainfall_____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	10.5	
B.	Mason	9	71	
C.	Labor	12	108	
D.	Operator	1	10.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	1034		
Arch. Block			
Stone			
Frames			
Grout	3		

Description and Location of:

1.) **Work performed today:** Worked on stairwell 3 and 4, worked on 4th floor keying out, Worked on foyer columns, worked on 6th floor parapet walls and exterior walls. Wanted to set stone on level 5.

2.) **Areas of masonry delayed and causes of delays:** Lithco loaded two trucks today had the buck hoist Platform block had to ask them a number of times to move up so we could land material. Wanted to set stone i was told no by BBC. A company came out and core drilled 8 holes in the south wall level 3 west.

3.) **Verbal instructions received:** I was told by Marty with BBC. today that a new lifting method will be required before stone on 5th floor can be started agai

4.) **Equipment received on site today:** A load of cast stone, banding pelces for 5th floor caps for parapet walls on level 6.

Load of grout.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-20-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9.5	
B.	Mason	10	79	
C.	Labor	10	88.5	
D.	Operator	1	9.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	731		
Arch. Block			
Stone			
Frames			
Grout	4		

Description and Location of:

1.) **Work performed today:** Worked on level 4 keying out and laying cmu where out rigger was Worked on level 6 at parapet and 6" cmu at exterior, worked on lstairway 3 and 4 , worked on columns at the foyer area topped out two walls in this area. Worked on ~~moving windows at level 3 room # 311 and 315 are completed two more to fill in~~ on this floor.

2.) **Areas of masonry delayed and causes of delays:**

Buck hoist was down for and hour and a half. Crane had mechanical issues with the transmission.

3.) **Verbal instructions received:** At the 6th floor exterior walls not laying out per drawings Pete with BBC insturted me to come off columns to lay out doors and not to worry with smaller walls deminsions.

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-21-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	9.5	
B.	Mason	9	67.5	
C.	Labor	12	107	
D.	Operator	1	9.5	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	1006		
Arch. Block			
Stone			
Frames			
Grout	1.5		

Description and Location of:

1.) Work performed today: Worked on level 6 parapet walls, worked on stairwell 3 and 4. Worked on columns in the foyer. Worked on keying in level 4.

2.) Areas of masonry delayed and causes of delays: ONSM could not get the crane today for level 5 Cast stone , Or stairwell 3 and 4 Liftco loading trucks all day long.

3.) Verbal instructions received:

4.) Equipment received on site today: Load of mortor today, out rigger that was on level 4 was sent back to the yard today.

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-22-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee / Hours	EWO Hours
A.	Foreman	1	7	
B.	Mason	7	49	
C.	Labor	12	84	
D.	Operator	1	7	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	726		
Arch. Block			
Stone			
Frames			
Grout	3		

Description and Location of:

1.) Work performed today: Worked on level 6 north parapet and 6" interior walls. Worked on moving various windows in the wrong location.

2.) Areas of masonry delayed and causes of delays: We could not get crane time today due to liftco loading out trucks. We need crane to set stone on 5th floor.

3.) Verbal instructions received:

4.) Equipment received on site today: Load of mortor, face sheild brims and sheilds.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-23-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	0	0	
B.	Mason	0	0	
C.	Labor	0	0	
D.	Operator	0	0	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick	0		
Block	0		
Arch. Block			
Stone			
Frames			
Grout	0		

Description and Location of:

1.) Work performed today:

2.) Areas of masonry delayed and causes of delays: No work today in observation of Christmas

3.) Verbal instructions received:

4.) Equipment received on site today:

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-27-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:____Min____Max____

Rainfall____Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1		
B.	Mason	9		
C.	Labor	10		
D.	Operator	1		
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	841		
Arch. Block			
Stone	2		
Frames			
Grout			

Description and Location of:

1.) Work performed today: Worked on level 6 8" cmu and 6" cmu, set stone on level 5

2.) Areas of masonry delayed and causes of delays: Need. Dowels drillled on stairwell 3 at window header

3.) Verbal instructions received:

4.) Equipment received on site today: Two loads of 8" cmu. One load of grout.

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-28-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature:_____ Min_____ Max_____

Rainfall_____ Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	11	
B.	Mason	10	79.5	
C.	Labor	13	125	
D.	Operator	1	11	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	893		
Arch. Block			
Stone	1		
Frames			
Grout	2		
Lentels	7		

Description and Location of:

1.) Work performed today: Worked on level 6 8" cmu and 6" cmu. Worked on 5th floor stone Completed keying out on level 4.

2.) Areas of masonry delayed and causes of delays: Other trades have the 5th floor loaded with material West side of 5 th floor they are hanging studs running all drain pipes threw the slab, duct work run threw the slabs this is going to cause a slow down for ONS when we start laying the stone and cmu in this area. I have brought this up with BBB.

3.) Verbal instructions received:

4.) Equipment received on site today: Two loads of cmu. Load of rebar and grout

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-29-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	11	
B.	Mason	10	50	
C.	Labor	12	116.5	
D.	Operator	1	11	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick			
Block	819		
Arch. Block			
Stone	20.8		
Frames			
Grout	2		
Lentels	4		

Description and Location of:

1.) Work performed today: Worked on level 6 8" and 6" cmu. Worked on level 5 stone band worked on stairwell 3

2.) Areas of masonry delayed and causes of delays: BBC was to drill dowels in the shear wall at the window header. This was to have been done on tuesday per Tim/ BBC. We were at a stand still till 11. Today waiting

3.) Verbal instructions received:

4.) Equipment received on site today: Load of cast stone

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-30-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	6	
B.	Mason	10	51	
C.	Labor	12	72	
D.	Operator	1	6	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick	484		
Block			
Arch. Block			
Stone	17		
Frames			
Grout	2		

Description and Location of:

1.) **Work performed today:** Worked on level 6 8" cmu and 6" cmu. Worked on level 5 stone Band. Grouting level 6 frrom level 7 sleeves.

2.) **Areas of masonry delayed and causes of delays:** No crane today or on Monday due to the new year Holiday. Stone #ac-37 not rebar slots in stone we had to core drill all stone today that was set. P- walls still framing the west side of level 5 along with MCC and other trades.

3.) **Verbal instructions received:** I was told per Johnny with BBC to stop setting up to work on level 7.

4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

OLD NORTH STATE
MASONRY
-LLC-

DAILY JOB LOG AND PRODUCTION REPORT

NAME OF JOB Marion Square Date: 12-31-16

JOB# 1259

Weather: (Clear) (P.Cloudy) (Cloudy): Temperature: Min Max

Rainfall Inches

Time

		# of Employees	Employee Hours	EWO Hours
A.	Foreman	1	6	
B.	Mason			
C.	Labor	3	18	
D.	Operator	1	6	
	Sub Crews			
Sub 1	Mason			
Sub 1	Labor			
Sub 2	Mason			
Sub 2	Labor			

Production

Items	Units	Sub 1	Sub 2
Face Brick	X		
Block			
Arch. Block	X		
Stone			
Frames			
Grout	X		

Description and Location of:

1.) **Work performed today:** Cleaned mixer area. Restaged and built a bermish area for the mixer the city of Charleston came out and inspected the street drains.

2.) **Areas of masonry delayed and causes of delays:**

3.) **Verbal instructions received:** Cleaned mix area per. Martys e-mail that was sent Out on friday afternoon

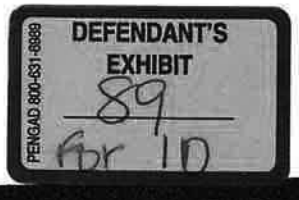
4.) **Equipment received on site today:**

ELECTRONICALLY FILED - 2023 May 16 11:10 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

DEFENDANT LIBRARY ASSOCIATES, LLC'S

TRIAL EXHIBIT #89


DEFENDANT'S
EXHIBIT
89
For ID
PENGAD 800-631-6989

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

aace International

AACE® International Recommended Practice No. 29R-03

FORENSIC SCHEDULE ANALYSIS

TCM Framework: 6.4 – Forensic Performance Assessment

Acknowledgments: (April 25, 2011 Revision)
Kenji P. Hoshino, CFCC PSP (Author)
John C. Livengood, CFCC PSP (Author)
Christopher W. Carson, PSP (Author)
Andrew Avalon, PE PSP
Michael S. Dennis, CCC
Rob Hartley, PSP
Richard J. Long, PE
J. Scott Lowe, PE
Robert B. McCullough, PE CCE CFCC
Donald F. McDonald, Jr., PE CCE PSP
Mark F. Nagata, PSP
Jeffery L. Ottesen, PE CFCC PSP
Thomas F. Peters, PE CFCC
Dr. Fredric L. Plotnick, PE
Dr. Anamaria I. Popescu, PE PSP
Mark C. Sanders, PE CCE PSP
L. Lee Schumacher, PE PSP
Michael D. Tarullo
Jeffrey M. Wentz
Ronald M. Winter, PSP
J. Kimon Yiasemides, PSP
James G. Zack, Jr., CFCC

Acknowledgments: (June 23, 2009 Revision)
Kenji P. Hoshino, CFCC PSP (Author)
Andrew Avalon, PE PSP
Christopher W. Carson, PSP
Michael S. Dennis, CCC
Sidney J. Hymes, CFCC
John C. Livengood, CFCC PSP
Richard J. Long
Mark F. Nagata, PSP
Jeffery L. Ottesen, PE CFCC PSP
Thomas F. Peters, PE CFCC
Dr. Anamaria I. Popescu, PE
Jose F. Ramirez, CCE
Mark C. Sanders, PE CCE PSP
L. Lee Schumacher, PSP
Stephen P. Warhoe, PE CCE CFCC
Ronald M. Winter, PSP
James G. Zack, Jr. CFCC

Acknowledgments: (June 25, 2007 Revision)
Kenji P. Hoshino, CFCC PSP (Author)
Robert B. Brown, PE
John J. Ciccarelli, PE CCE PSP
Gordon R. Costa, CFCC PSP
Michael S. Dennis, CCC
Edward E. Douglas, III CCC PSP
Philip J. Farrocco, PE
Sidney J. Hymes, CFCC
John C. Livengood, CFCC PSP
Mark F. Nagata, PSP
Jeffery L. Ottesen, PE CFCC PSP
Thomas F. Peters, PE CFCC
Keith Pickavance
Dr. Anamaria I. Popescu, PE
Jose F. Ramirez, CCE
Mark C. Sanders, PE CCE PSP
Takuzo Sato
L. Lee Schumacher, PSP
Robert Seals, PSP
Ronald M. Winter, PSP
James G. Zack, Jr. CFCC

Copyright 2011 AACE® International, Inc.

April 25, 2011

CONTENTS

1. ORGANIZATION AND SCOPE 9

1.1 Introduction 9

1.2. Basic Premise and Assumptions 10

1.3. Scope and Focus 10

1.4. Taxonomy and Nomenclature 11
A. Layer 1: Timing 12
1. Prospective 12
2. Retrospective 13
B. Layer 2: Basic Methods 13
1. Observational 13
2. Modeled 13
C. Layer 3: Specific Methods 14
1. Observational Methods 14
a. Static Logic Observation 14
b. Dynamic Logic Observation 14
2. Modeled Methods 14
a. Additive Modeling 14
b. Subtractive Modeling 14
D. Layer 4: Basic Implementation 15
1. Gross Mode or Periodic Mode 15
2. Contemporaneous / As-Is or Contemporaneous / Split 15
3. Modified or Recreated 15
4. Single Base, Simulation or Multi-Base, Simulation 15
E. Layer 5: Specific Implementation 16
1. Fixed Periods vs. Variable Periods / Grouped Periods 16
2. Global (Insertion or Extraction) vs. Stepped (Insertion or Extraction) 16

1.5. Underlying Fundamentals and General Principles 16
A. Underlying Fundamentals 16
B. General Principles 17
1. Use CPM Calculations 17
2. Concept of Data Date Must be Used 17
3. Shared Ownership of Network Float 17
4. Update Float Preferred Over Baseline Float 17
5. Sub-Network Float Values 18
6. Delay Must Affect the Critical Path 18
7. All Available Schedules Must Be Considered 18

2. SOURCE VALIDATION 18

2.1. Baseline Schedule Selection, Validation, and Rectification (SVP 2.1) 18
A. General Considerations 18
B. Recommended Protocol 19
C. Recommended Enhanced Protocol 20

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

D. Special Procedures 20
1. Summarization of Schedule Activities 20
2. Reconstruction of a Computerized CPM Model from a Hardcopy 21
3. De-Statusing a Progressed Schedule to Create a Baseline 21
4. Software Format Conversions 22

2.2. As-Built Schedule Sources, Reconstruction, and Validation (SVP 2.2) 22
A. General Considerations 22
B. Recommended Protocol 24
C. Recommended Enhanced Protocol 24
D. Special Procedures 25
1. Creating an Independent As-Built from Scratch "Daily Specific As-Built" (DSAB) 25
2. Creating a Fully Progressed Baseline 26
3. Determination of 'Significant' Activities for Inclusion in an As-Built 27
4. Collapsible As-Built CPM Schedule 27
5. Summarization of Schedule Activities 28

2.3. Schedule Updates: Validation, Rectification, and Reconstruction (SVP 2.3) 28
A. General Considerations 28
B. Recommended Protocol 28
C. Recommended Enhanced Protocol 29
D. Special Procedures 29
1. Reconstructed Updates 29
a. "Hindsight" Method 29
b. "Blindsight" Method 29
2. Bifurcation: Creating a Progress-Only Half-Step Update 30
3. Correcting the Contemporaneous Project Schedule for the Analysis 30

2.4. Identification and Quantification of Discrete Delay Events and Issues (SVP 2.4) 32
A. General Considerations 32
1. 'Delay' Defined 32
a. Activity-Level Variance (ALV) 32
b. Distinguishing ALV from Project-Level Variance (PLV) 33
c. Distinguishing Delay-Cause from Delay-Effect 33
d. Delay Characterization is Independent of Responsibility 34
2. Identifying and Collecting Delays 34
a. Two Main Approaches to Identification and Collection 34
b. Criticality of the Delay 34
3. Quantification of Delay Durations and Activity Level Variances 35
a. Variance Method 35
b. Independent Method 35
4. Cause of Variance 36
5. Assigning or Assuming Variance Responsibility 36
a. Contractor Delay 36
b. Owner Delay 36
c. Force Majeure Delay 36
B. Recommended Protocol 36
C. Recommended Enhanced Protocol 37
D. Special Procedures 37
1. Duration and Lag Variance Analysis 37

3. METHOD IMPLEMENTATION 38

3.1. Observational / Static / Gross (MIP 3.1) 38

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

A. Description 38
B. Common Names 39
C. Recommended Source Validation Protocols 39
D. Enhanced Source Validation Protocols 39
E. Minimum Recommended Implementation Protocols 39
F. Enhanced Implementation Protocols 40
1. Daily Delay Measure 40
G. Identification of Critical and Near-Critical Paths 42
H. Identification and Quantification of Concurrent Delays and Pacing 42
I. Determination and Quantification of Excusable and Compensable Delay 43
1. Excusable and Compensable Delay (ECD) 43
2. Excusable and Non-Compensable Delay (END) 43
J. Identification and Quantification of Mitigation / Constructive Acceleration 43
K. Specific Implementation Procedures and Enhancements 43
L. Summary of Considerations in Using the Minimum Protocol 43
M. Caveats in Using the Minimum Protocol / Conditions Requiring Enhanced Protocols 44

3.2. Observational / Static / Periodic (MIP 3.2) 44
A. Description 44
B. Common Names 45
C. Recommended Source Validation Protocols 45
D. Enhanced Source Validation Protocols 46
E. Minimum Recommended Implementation Protocols 46
F. Enhanced Implementation Protocols 47
1. Daily Delay Measure 47
G. Identification of Critical and Near-Critical Paths 48
H. Identification and Quantification of Concurrent Delays and Pacing 49
I. Determination and Quantification of Excusable and Compensable Delay 49
1. Excusable and Compensable Delay (ECD) 49
2. Excusable and Non-Compensable Delay (END) 49
J. Identification and Quantification of Mitigation / Constructive Acceleration 50
K. Specific Implementation Procedures and Enhancements 50
1. Fixed Period 50
2. Variable Periods 50
L. Summary of Considerations in Using the Minimum Protocol 50
M. Caveats in Using the Minimum Protocol / Conditions Requiring Enhanced Protocols 50

3.3. Observational / Dynamic / Contemporaneous As-Is (MIP 3.3) 51
A. Description 51
B. Common Names 52
C. Recommended Source Validation Protocols 52
D. Enhanced Source Validation Protocols 52
E. Minimum Recommended Implementation Protocols 52
F. Enhanced Implementation Protocols 53
G. Identification of Critical and Near-Critical Paths 54
H. Identification and Quantification of Concurrent Delays and Pacing 54
I. Determination and Quantification of Excusable and Compensable Delay 55
1. Non-Excusable and Non-Compensable Delay (NND) 55
2. Excusable and Compensable Delay (ECD) 55
3. Excusable and Non-Compensable Delay (END) 55
J. Identification and Quantification of Mitigation / Constructive Acceleration 55
K. Specific Implementation Procedures and Enhancements 56
1. All Periods 56
2. Grouped Periods 56

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

3. Blocked Periods 56
4. Changing the Contemporaneous Project Schedule During the Analysis 56
L. Summary of Considerations in Using the Minimum Protocol 57
M. Caveats in Using the Minimum Protocol / Conditions Requiring Enhanced Protocols 58

3.4. Observational / Dynamic / Contemporaneous Split (MIP 3.4) 58
A. Description 58
B. Common Names 59
C. Recommended Source Validation Protocols 59
D. Enhanced Source Validation Protocols 59
E. Minimum Recommended Implementation Protocols 59
F. Enhanced Implementation Protocols 60
G. Identification of Critical and Near-Critical Paths 60
H. Identification and Quantification of Concurrent Delays and Pacing 61
I. Determination and Quantification of Excusable and Compensable Delay 61
J. Identification and Quantification of Mitigation / Constructive Acceleration 61
K. Specific Implementation Procedures and Enhancements 62
1. All Periods 62
2. Grouped Periods 62
3. Blocked Periods 62
4. Bifurcation: Creating a Progress-Only Half-Step Update 62
5. Changing the Contemporaneous Project Schedule During the Analysis 64
L. Summary of Considerations in Using the Minimum Protocol 64
M. Caveats in Using the Minimum Protocol / Conditions Requiring Enhanced Protocols 65

3.5. Observational / Dynamic / Modified or Recreated (MIP 3.5) 65
A. Description 65
B. Common Names 66
C. Recommended Source Validation Protocols 66
D. Enhanced Source Validation Protocols 66
E. Minimum Recommended Implementation Protocols 67
F. Enhanced Implementation Protocols 67
1. Daily Progress Method 67
G. Identification of Critical and Near-Critical Paths 67
H. Identification and Quantification of Concurrent Delays and Pacing 68
I. Determination and Quantification of Excusable and Compensable Delay 68
J. Identification and Quantification of Mitigation / Constructive Acceleration 68
K. Specific Implementation Procedures and Enhancements 68
1. Fixed Periods 68
2. Variable Periods 68
3. Fixed Periods vs. Variable Periods 68
L. Summary of Considerations in Using the Minimum Protocol 69
M. Caveats in Using the Minimum Protocol / Conditions Requiring Enhanced Protocols 69

3.6. Modeled / Additive / Single Base (MIP 3.6) 70
A. Description 70
B. Common Names 71
C. Recommended Source Validation Protocols 71
D. Enhanced Source Validation Protocols 71
E. Minimum Recommended Implementation Protocols 71
F. Enhanced Implementation Protocols 72
G. Identification of Critical and Near-Critical Paths 72
H. Identification and Quantification of Concurrent Delays and Pacing 72
I. Determination and Quantification of Excusable and Compensable Delay 73

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

1. Excusable and Compensable Delay (ECD) 73
2. Non-Excusable and Non-Compensable Delay (NND) 73
3. Excusable and Non-Compensable Delay (END) 74
J. Identification and Quantification of Mitigation / Constructive Acceleration 74
K. Specific Implementation Procedures and Enhancements 74
1. Global Insertion 74
2. Stepped Insertion 74
L. Summary of Considerations in Using the Minimum Protocol 75
M. Caveats in Using the Minimum Protocol / Conditions Requiring Enhanced Protocols 75

3.7. Modeled / Additive / Multiple Base (MIP 3.7) 75
A. Description 75
B. Common Names 76
C. Recommended Source Validation Protocols 76
D. Enhanced Source Validation Protocols 76
E. Minimum Recommended Implementation Protocols 76
F. Enhanced Implementation Protocols 77
G. Identification of Critical and Near-Critical Paths 77
H. Identification and Quantification of Concurrent Delays and Pacing 78
I. Determination and Quantification of Excusable and Compensable Delay 79
1. Excusable and Compensable Delay (ECD) 79
2. Non-Excusable and Non-Compensable Delay (NND) 80
3. Excusable and Non-Compensable Delay (END) 80
J. Identification and Quantification of Mitigation / Constructive Acceleration 80
K. Specific Implementation Procedures and Enhancements 80
1. Fixed Periods 80
2. Variable Periods 81
3. Global Insertion 81
4. Stepped Insertion 81
L. Summary of Considerations in Using the Minimum Protocol 81
M. Caveats in Using the Minimum Protocol / Conditions Requiring Enhanced Protocols 81

3.8. Modeled / Subtractive / Single Simulation (MIP 3.8) 82
A. Description 82
B. Common Names 82
C. Recommended Source Validation Protocols 83
D. Enhanced Source Validation Protocols 83
E. Minimum Recommended Implementation Protocols 83
F. Enhanced Implementation Protocols 83
G. Identification of Critical and Near-Critical Paths 84
H. Identification and Quantification of Concurrent Delays and Pacing 84
I. Determination and Quantification of Excusable and Compensable Delay 85
1. Excusable and Compensable Delay (ECD) 85
2. Non-Excusable and Non-Compensable Delay (NND) 85
3. Excusable and Non-Compensable Delay (END) 85
J. Identification and Quantification of Mitigation / Constructive Acceleration 85
K. Specific Implementation Procedures and Enhancements 85
1. Choice of Extraction Models 85
a. Global Extraction 86
b. Stepped Extraction 86
2. Creating a Collapsible As-Built CPM Schedule 86
L. Summary of Considerations in Using the Minimum Protocol 89
M. Caveats in Using the Minimum Protocol / Conditions Requiring Enhanced Protocols 89

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

3.9. Modeled / Subtractive / Multiple Base (MIP 3.9) 90
A. Description 90
B. Common Names 90
C. Recommended Source Validation Protocols 91
D. Enhanced Source Validation Protocols 91
E. Minimum Recommended Implementation Protocols 91
F. Enhanced Implementation Protocols 92
G. Identification of Critical and Near-Critical Paths for Each Periodic Update 92
H. Identification and Quantification of Concurrent Delays and Pacing 92
I. Determination and Quantification of Excusable and Compensable Delay 93
1. Excusable and Compensable Delay (ECD) 93
2. Non-Excusable and Non-Compensable Delay (NND) 93
3. Excusable and Non-Compensable Delay (END) 93
J. Identification and Quantification of Mitigation / Constructive Acceleration 94
K. Specific Implementation Procedures and Enhancements 94
1. Choice of Analysis Periods 94
a. Fixed Periods 94
b. Variable Periods 94
c. Fixed Periods vs. Variable Periods 94
2. Order of Analysis Periods 94
3. Choice of Modeling Increments 95
a. Periodic Modeling 95
b. Cumulative Modeling 96
4. Choice of Extraction Modes 96
a. Global Extraction 96
b. Stepped Extraction 97
5. Creating a Collapsible As-Built CPM Schedule 97
6. Identification of the Analogous Critical Path (ACP) 97
L. Summary of Considerations in Using the Minimum Protocol 97
M. Caveats in Using the Minimum Protocol / Conditions Requiring Enhanced Protocols 97

4. ANALYSIS EVALUATION 98

4.1. Excusability and Compensability of Delay 98
A. General Rules 98
B. Accounting for Concurrent Delay 99
C. Equitable Symmetry of the Concept 100

4.2. Identification and Quantification of Concurrent Delay 101
A. Relevance and Application 101
B. Various Definitions of Concurrency 101
C. Pre-Requisite Findings Concerning the Delays Being Evaluated for Concurrency 102
1. Two or More Delays that are Unrelated and Independent 102
2. Two or More Delays that are the Contractual Responsibility of Different Parties 103
3. The Delay Must be Involuntary 103
4. The Delay Must be Substantial and Not Easily Curable 103
D. Functional Requirements Establishing Concurrency and the Factors that Influence Findings 103
1. Literal Concurrency vs. Functional Concurrency 104
2. Least Float vs. Negative Float 106
3. Cause of Delay vs. Effect of Delay 106
4. Frequency, Duration, and Placement of Analysis Intervals 107
a. Frequency and Duration 107
b. Chronological Placement 108

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

5. Order of Insertion or Extraction in Stepped Implementation 108
6. Hindsight vs. Blindsight 108
E. Defining the Net Effect of Concurrent Combinations of Delay 110
F. Pacing 111
G. Demonstrating Pacing 112
1. Existence of the Parent Delay 113
2. Showing of Contemporaneous Ability to Resume Normal Pace 113
3. Evidence of Contemporaneous Intent 113

4.3. Critical Path and Float 113
A. Identifying the Critical Path 113
1. Critical Path: Longest Path School vs. Total Float Value School 113
2. Negative Float: Zero Float School vs. Lowest Float Value School 114
B. Quantifying 'Near-Critical' 114
1. Duration of Discrete Delay Events 115
2. Duration of Each Analysis Interval 115
3. Historical Rate of Float Consumption 116
4. Amount of Time or Work Remaining on the Project 116
C. Identifying the As-Built Critical Path 116
D. Common Critical Path Alteration Techniques 118
1. Resource Leveling and Smoothing 118
2. Multiple Calendars 119
3. Precedence Logic / Lead and Lag 119
4. Start and Finish Constraints 119
5. Various Calculation Modes 119
a. Schedule Calculation 120
b. Duration Calculation 120
6. Use of Data Date 120
7. Judgment Calls During the Forensic Process 120
E. Ownership of Float 121

4.4. Delay Mitigation and Constructive Acceleration 121
A. Definitions 121
B. General Considerations 122
1. Differences between Directed Acceleration, Constructive Acceleration, and Delay Mitigation 122
2. Acceleration and Compensability 123
3. Delay Mitigation and Compensability 123
C. Elements of Constructive Acceleration 124
1. Contractor Entitlement to an Excusable Delay 124
2. Contractor Requests and Establishes Entitlement to a Time Extension 124
3. Owner Failure to Grant a Timely Time Extension 124
4. Implied Order by the Owner to Complete More Quickly 124
5. Contractor Notice of Acceleration 125
6. Proof of Damages 125

5. CHOOSING A METHOD 125

5.1 Factor 1: Contractual Requirements 126

5.2 Factor 2: Purpose of Analysis 127

5.3 Factor 3: Source Data Availability and Reliability 128

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

5.4 Factor 4: Size of the Dispute 128
5.5 Factor 5: Complexity of the Dispute 128
5.6 Factor 6: Budget for Forensic Schedule Analysis 129
5.7 Factor 7: Time Allowed for Forensic Schedule Analysis 129
5.8 Factor 8: Expertise of the Forensic Schedule Analyst and Resources Available 130
5.9 Factor 9: Forum for Resolution and Audience 130
5.10 Factor 10: Legal or Procedural Requirements 130
5.11 Factor 11: Custom and Usage of Methods on the Project or the Case 130
REFERENCES 131
CONTRIBUTORS 131
APPENDIX A: FIGURE 1 – NOMENCLATURE CORRESPONDENCE FIGURE 133
APPENDIX B: FIGURE 2 – TAXONOMY OF FORENSIC SCHEDULE ANALYSIS 134

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

1. ORGANIZATION AND SCOPE

1.1. Introduction

The purpose of the AACE® International Recommended Practice 29R-03 *Forensic Schedule Analysis* is to provide a unifying reference of basic technical principles and guidelines for the application of critical path method (CPM) scheduling in forensic schedule analysis. In providing this reference, the RP will foster competent schedule analysis and furnish the industry as whole with the necessary technical information to categorize and evaluate the varying forensic schedule analysis methods. The RP discusses certain methods of schedule delay analysis, irrespective of whether these methods have been deemed acceptable or unacceptable by courts or government boards in various countries around the globe.

This RP is not intended to establish a standard of practice, nor is it intended to be a prescriptive document applied without exception. Therefore, a departure from the recommended protocols should not be automatically treated as an error or a deficiency as long as such departure is based on a conscious and sound application of schedule analysis principles. As with any other recommended practice, the RP should be used in conjunction with professional judgment and knowledge of the subject matter. While the recommended protocols contained herein are intended to aid the practitioner in creating a competent work product it may, in some cases, require additional or fewer steps.

AACE recognizes that the method(s) of analysis to be utilized in a given situation, and the manner in which a particular methodology might be implemented, are dependent upon the contract, the facts, applicable law, availability and quality of contemporaneous project documentation, and other circumstances particular to a given situation. Therefore, the RP should be read in its entirety and fully understood before applying or using the information for any purpose. The reader should refrain from using the RP in a manner which is not consistent with its intended use, and not quote any of the contents in an out-of-context manner. As with any other recommended practice published by AACE, this RP is subject to future revisions as new methodologies are identified; new forensic scheduling software is developed; etc.

Forensic[1] scheduling analysis refers to the study and investigation of events using CPM or other recognized schedule calculation methods. It is recognized that such analyses may potentially be used in a legal proceeding. It is the study of how actual events interacted in the context of a complex model for the purpose of understanding the significance of a specific deviation or series of deviations from some baseline model and their role in determining the sequence of tasks within the complex network.

Forensic schedule analysis, like many other technical fields, is both a science and an art. As such, it relies upon professional judgment and expert opinion and usually requires many subjective decisions. One of the most important of these decisions is what technical approach should be used to measure or quantify delay and identify the effected activities in order to focus on causation. Equally important is how the analyst should apply the chosen method. The desired objective of this RP is to reduce the degree of subjectivity involved in the current state of the art. This is with the full awareness that there are certain types of subjectivity that cannot be minimized, let alone eliminated. Professional judgment and expert opinion ultimately rest on subjectivity, but that subjectivity must be based on diligent factual research and analyses whose procedures can be objectified.

For these reasons, the RP focuses on minimizing procedural subjectivity. It does this by defining terminology, identifying methodologies currently used by forensic scheduling analysts, classifying them, and setting forth recommended procedural protocols for the use of these techniques. By describing uniform procedures that increase the transparency of the analytical method and the analyst's thought

[1] The word 'forensic' is defined as: 1. Relating to, used in, or appropriate for courts of law or for public discussion or argumentation. 2. Of, relating to, or used in debate or argument; rhetorical. 3. Relating to the use of science or technology in the investigation and establishment of facts or evidence in a court of law: *a forensic laboratory*.[9]

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

process, the guidelines set forth herein will increase both the accountability and the testability of an opinion and minimize the need to contend with "black-box" or "voodoo" analyses.
Implementation of this RP should result in minimizing disagreements over technical implementation of accepted techniques and allow the providers and consumers of these services to concentrate on resolving disputes based upon substantive, factual and legal issues.

1.2. Basic Premise and Assumptions

a. Forensic scheduling is a technical field that is associated with, but distinct from, project planning and scheduling. It is not just a subset of planning and scheduling.

b. Procedures that may be sufficient for the purpose of project planning, scheduling, and controls may not necessarily be adequate for forensic schedule analysis.

c. It is assumed that this document will be used by practitioners to foster consistency of practice and be used in the spirit of intellectual honesty.

d. All methods are subject to manipulation as they all involve judgment calls by the analyst whether in preparation or in interpretation.

e. No forensic schedule analysis method is exact. The level of accuracy of the answers produced by each method is a function of the quality of the data used therein, the accuracy of the assumptions, and the subjective judgments made by the forensic schedule analyst.

f. Schedules are a project management tool that, in and of themselves, do not demonstrate root causation or responsibility for delays. Legal entitlement to delay damages should be distinct and apart from the forensic schedule analysis methodologies contained in this RP.

1.3. Scope and Focus

The scope and focus of this RP are:

a. This RP covers the technical aspects of forensic schedule analysis methods. It identifies, defines, and describes the usage of various forensic schedule analysis methods in current use. It is not the intent of the RP to exclude or to endorse any method over others. However, it offers caveats and considerations for usage and cites the best current practices and implementation for each method.

b. The focus of this document is on the technical aspects of forensic scheduling as opposed to the legal aspects. This RP is not intended to be a primary resource for legal factors governing claims related to scheduling, delays, and disruption. However, relevant legal principles are discussed to the extent that they would affect the choice of techniques and their relative advantages and disadvantages.

c. Accordingly, the RP primarily focuses on the use of forensic scheduling techniques and methods for factual analysis and quantification as opposed to assignment of delay responsibility. This, however, does not preclude the practitioner from performing the analysis based on certain assumptions regarding liability.

d. This RP is not intended to be a primer on forensic schedule analysis. The reader is assumed to have advanced, hands-on knowledge of all components of CPM analysis and a working experience in a contract claims environment involving delay issues.

e. This RP not intended to be an exhaustive treatment of CPM scheduling techniques. While the RP

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

explains how schedules generated by the planning and scheduling process become the source data for forensic schedule analysis, it is not intended to be a manual for basic scheduling.

f. This RP is not intended to override contract provisions regarding schedule analysis methods or other mutual agreement by the parties to a contract regarding the same. However, this is not an automatic, blanket endorsement of all methods of delay analysis by the mere virtue of their specification in a contract document. It is noted that contractually specified methods often are appropriate for use during the project in a prospective mode but may be inappropriate for retrospective use2.

g. It is not the intent of this RP to intentionally contradict or compete with other similar protocols[3]. All efforts should be made by the user to resolve and reconcile apparent contradictions. AACE requests and encourages all users to notify AACE and bring errors, contradictions, and conflict to its attention.

h. This RP deals with CPM-based schedule analysis methods. It is not the intent of the RP to exclude analyses of simple cases where explicit CPM modeling may not be necessary, and mental calculation is adequate for analysis and presentation. The delineation between simple and complex is admittedly blurry and subjective. For this purpose, a 'simple case' is defined as any CPM network model that can be subjected to mental calculation whose reliability cannot be reasonably questioned and allows for effective presentation to lay persons using simple reasoning and intuitive common sense.

i. Finally, the RP is an advisory document to be used in conjunction with professional judgment based on working experience and knowledge of the subject matter. It is not intended to be a prescriptive document that can be applied without exception. When used as intended, this RP will aid the practitioner in creating a competent work product, but some cases require additional steps and some require less. Thus, a departure from the recommended protocols should not be automatically treated as an error or a deficiency as long as such departure is based on a conscious and sound application of schedule analysis principles.

1.4. Taxonomy and Nomenclature

The industry knows the forensic schedule analysis methods and approaches described herein by various common names. Current usage of these names throughout the industry is loose and undisciplined. It is not the intent of this document to enforce more disciplined use of the common names. Instead, the RP will correlate the common names with a taxonomic classification. This taxonomy will allow for the freedom of regional, cultural, and temporal differences in the use of common names for these methods.

The RP correlates the common names for the various methods to taxonomic names much like the biosciences use Latin taxonomic terms to correlate regionally diverse common names of plants and animals. This allows the common variations in terminology to coexist with a more objective and uniform language of technical classification. For example, the implementation of method implementation protocol (MIP) 3.7 (aka "TIA") has a bewildering array of regional variations. Not only that, the method undergoes periodic evolutionary changes while maintaining the same name.

By using taxonomic classifications, the RP allows the discussion of the various forensic analysis methods to become more specific and objective. Thus, the RP will not provide a uniform definition for the common names of the various methods, but it will instead describe in detail the taxonomic classification in which they belong. Figure 1 – *Nomenclature Correspondence* shows the commonly associated names for each of the taxonomic classifications.

2 For example, the prospective mode of "Time Impact Analysis" method that inserts estimated delay fragnets into the current schedule update for the purpose of contemporaneously demonstrating entitlement to time –extensions.
[3] The only other similar protocol known at this time is the "Delay & Disruption Protocol" issued in October 2002 by the Society of Construction Law of the United Kingdom [1]. The DDP has a wider scope than this RP.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

The RP's taxonomy is a hierarchical classification system of known methods of schedule impact analysis techniques and methods used to analyze how delays and disruptions affect entire CPM networks. For example, methods like the window analysis and collapsed as-built are included in the taxonomy, while procedures such as fragnet modeling, bar charting, and linear graphing are not included. Procedures are tools, not methods, and therefore are not classified under this taxonomy.

The taxonomy is comprised of five layers: timing, basic and specific methods, and the basic and specific implementation of each method. Please refer to Figure 2 – *Taxonomy of Forensic Schedule Analysis* for a graphic representation of the taxonomy. The elements of the diagrams are explained below.

Taxonomy																	
	1	RETROSPECTIVE															
	2	OBSERVATIONAL								MODELED							
	3	Static Logic			Dynamic Logic					Additive				Subtractive			
	4	3.1 Gross	3.2 Periodic		Contemporaneous Updates (3.3 As-is or 3.4 Split)		3.5 Modified / Reconstructed Updates			3.6 Single Base[2]		3.7 Multi Base[1]		3.8 Single Simulation		3.9 Multi Simulation[1]	
	5		Fixed Periods	Variable Windows	All Periods	Grouped Periods	Fixed Periods	Variable Windows		Global Insertion	Stepped Insertion	Fixed Periods	Variable Windows or Grouped	Global Extraction	Stepped Extraction	Fixed Periods	Stepped Extraction
Common Names		As-Planned vs As-Built		Window Analysis	Contemporaneous Period Analysis, Time Impact Analysis, Window Analysis	Contemporaneous Period Analysis, Time Impact Analysis, Window Analysis	Contemporaneous Period Analysis, Time Impact Analysis	Window Analysis, Time Impact Analysis		Impacted As-Planned, What-If	Time Impact Analysis, Impacted As-Planned	Time Impact Analysis	Window Analysis, Impacted As-Planned	Collapsed As-Built	Time Impact Analysis, Collapsed As-Built	Time Impact Analysis, Collapsed As-Built	Time Impact Analysis, Window Analysis, Collapsed As-Built

Footnotes
1. Contemporaneous or Modified / Reconstructed
2. The single base can be the original baseline or an update

Figure 1 – Nomenclature Correspondence (see enlarged size figure in Appendix A)

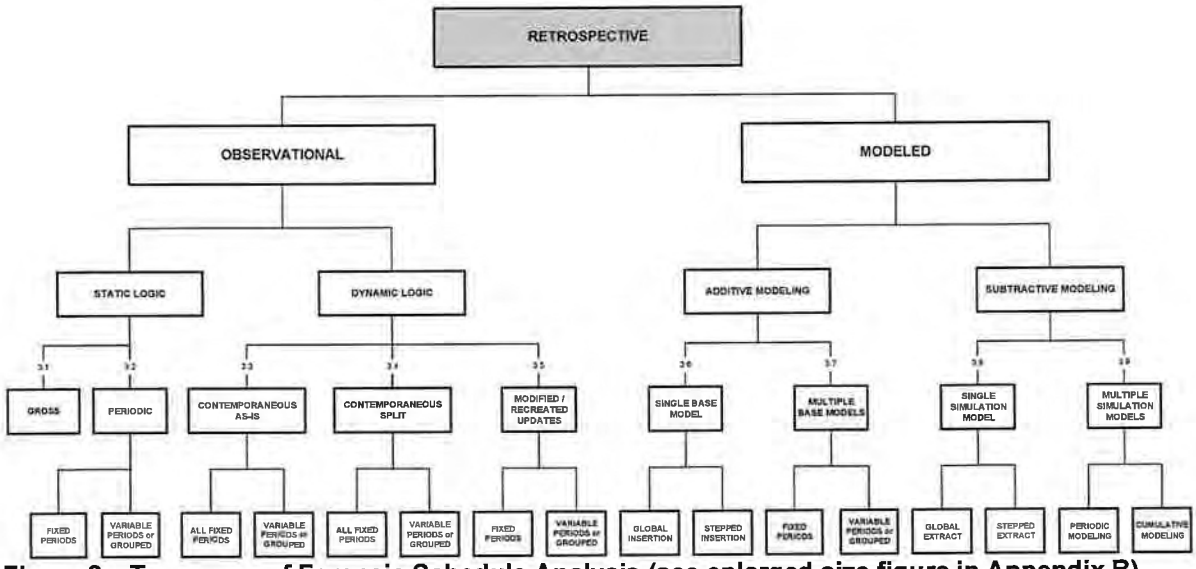


Figure 2 – Taxonomy of Forensic Schedule Analysis (see enlarged size figure in Appendix B)

A. Layer 1: Timing

The first hierarchy layer distinguishes the timing of when the analysis is performed consisting of two branches: prospective and retrospective.

1. **Prospective** analyses are performed in real-time prior to the delay event or in real-time,

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

contemporaneous with the delay event. In all cases prospective analysis consists of the analyst's best estimate of future events. Prospective analysis occurs while the project is still underway and may not evolve into a forensic context. Since this RP focuses only on forensic schedule analyses, true prospective schedule analysis methods are not discussed. While some of the methods discussed in this RP employ forward looking calculations they are still performed after the project is completed and are therefore considered retrospective.

2. Retrospective analyses are performed after the delay event has occurred and the impacts are known. The timing may be soon after the delay event but prior to the completion of the overall project, or after the completion of the entire project. Note that forward-looking analyses (such as 'additive modeling') performed after project completion are still retrospective in terms of timing. What is classified here is the real-time point-of-view of the analyst and not the method of analysis). In other words even forward-looking analysis methods implemented retrospectively have the full benefit of hindsight at the option of the analyst.

This distinction in timing is one of the most significant factors in the choice of methods. For example, contract provisions prescribing methods of delay analysis typically contemplate the preparation of such analyses in the prospective mode in order to facilitate the evaluation of time extensions. Therefore, a majority of contractually specified methods, often called "TIA" (MIP 3.7), consists of the insertion of delay events into the most current schedule update that existed at the time of the occurrence of the event: a prospective, forward-looking method.

At the end of the project the choices of analysis methods are expanded with the full advantage of hindsight offered by the various forms of as-built documentation. In addition, if as-built documentation is available, the best evidence rule demands that all factual investigations use the as-built as the primary source of analysis.

Also the timing distinction is often mirrored by a change in personnel. That is, often the forensic schedule analyst who typically works in the retrospective mode is not the same person as the project scheduler who worked under the prospective mode.

B. Layer 2: Basic Methods

The second hierarchy layer is the basic method consisting of two branches: observational and modeled. The distinction drawn here is whether the analyst's expertise is utilized for the purpose of interpretation and evaluation of the existing scheduling data only, or for constructing simulations and the subsequent interpretation and evaluation of the different scenarios created by the simulations. The distinction between the two basic methods becomes less defined in cases where the identity of the forensic analyst and the project scheduler rest in the same person.

1. Observational

The observational method consists of analyzing the schedule by examining a schedule, by itself or in comparison with another, without the analyst making any changes to the schedule to simulate any specific scenario.

Contemporaneous period analysis and as-built vs. as-planned are common examples that fall under the observational basic method.

2. Modeled

Unlike the observational method, the modeled method calls for intervention by the analyst beyond mere observation. In preparing a modeled analysis the analyst inserts or extracts activities representing delay events into or from a CPM network and compares the calculated results of the

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

'before' and 'after' states.

Common examples of the modeled method are the collapsed as-built, time impact analysis, and the impacted as-planned.

C. Layer 3: Specific Methods

At the third layer are the specific methods.

1. Observational Methods

Under the observational method, further distinction is drawn on whether the evaluation considers just the original schedule logic or the additional sets of progressive schedule logic that were developed during the execution of the project, often called the dynamic logic.

a. Static Logic Observation

A specific subset of the observational method, the static logic variation compares a plan consisting of one set of network logic to the as-built state of the same network. The term 'static' refers to the fact that observation consists of the comparison of an as-built schedule to just one set of as-planned network logic.

The as-planned vs. as-built is an example of this specific method.

b. Dynamic Logic Observation

In contrast with the static logic variation, the dynamic logic variation typically involves the use of schedule updates whose network logic may differ to varying degrees from the baseline and from each other. This variation considers the changes in logic that were incorporated during the project.

The contemporaneous period analysis is an example of this specific method. Note that this category does not occur under the prospective timing mode because the use of past updates indicates that the analysis is performed using retrospective timing.

2. Modeled Methods

The two distinctions under the modeled method are whether the delays are added to a base schedule or subtracted from a simulated as-built.

a. Additive Modeling

The additive modeling method consists of comparing a schedule with another schedule that the analyst has created by adding schedule elements (i.e. delays) to the first schedule for the purpose of modeling a certain scenario.

The additive modeling methods include the impacted as-planned and some forms of the window analysis method. The MIP 3.6 (aka "TIA") can also be classified as an additive modeling method. This term or its equivalent, time impact evaluation (TIE), has been used in contracts and specifications to refer to other basic and specific methods as well.

b. Subtractive Modeling

The subtractive modeling method consists of comparing a CPM schedule with another

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

schedule that the analyst has created by subtracting schedule elements (i.e. delays) from the first schedule for the purpose of modeling a certain scenario.

The collapsed as-built is one example that is classified under the subtractive modeling method.

D. Layer 4: Basic Implementation

The fourth layer consists of the differences in implementing the methods outlined above. The static logic method can be implemented in a gross mode or periodic mode. The dynamic logic method can be implemented as contemporaneous: as-is, contemporaneous split, contemporaneous modified, or recreated. The additive or subtractive modeling method can be implemented as a single base with simulation or a multiple base with simulation.

1. Gross Mode or Periodic Mode

The first of the two basic implementations of the static logic variations of the observational method is the gross mode. Implementation of the gross mode considers the entire project duration as one whole analysis period without any segmentation.

The alternate to the gross mode is the periodic mode. Implementation of the periodic mode breaks the project duration into two or more segments for specific analysis focusing on each segment. Because this is an implementation of the static logic method, the segmented analysis periods are ***not*** associated with any changes in logic that may have occurred contemporaneously with these project periods.

2. Contemporaneous / As-Is or Contemporaneous / Split

This basic implementation pair occurs under the dynamic logic variation of the observation method. Both choices contemplate the use of the schedule updates that were prepared contemporaneously during the project. However the as-is implementation evaluates the differences between each successive update in its unaltered state, while the split implementation bifurcates each update into the pure progress and the non-progress revisions such as logic changes.

The purpose of the bifurcation is to isolate the schedule slippage (or recovery) caused solely by work progress based on existing logic during the update period from that caused by non-progress revisions newly inserted (but not necessarily implemented) in the schedule update.

3. Modified or Recreated

This pair, also occurring under the dynamic logic variation of the observational method, involves the observation of updates. Unlike the contemporaneous pair, however, this implementation involves extensive modification of the contemporaneous updates, as in the modified implementation, or the recreation of entire updates where no contemporaneous updates exist, as in the recreated implementation.

4. Single Base, Simulation or Multi-Base, Simulation

This basic implementation pair occurs under the additive and the subtractive modeling methods. The distinction is whether when the modeling (either additive or subtractive) is performed, the delay activities are added to or extracted from a single CPM network or multiple CPM networks.

For example, a modeled analysis that adds delays to a single baseline CPM schedule is a single

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

base implementation of the additive method, whereas one where delays are extracted from several as-built simulations is a multi-base simulation implementation of the subtractive method.

A single base additive modeling method is typically called the impacted as-planned. Similarly the single simulation subtractive method is called the collapsed as-built. The multi-base, additive simulation variation is often called a window analysis.

The nine method implementation protocols (MIP) in Section 3 represent the instances of basic protocols based on the distinctions outlined in Layer 4.

E. Layer 5: Specific Implementation

1. Fixed Periods vs. Variable Periods / Grouped Periods

These specific implementations are the two possible choices for segmentation under all basic implementations except gross mode and the single base / simulation basic implementations. They are not available under the gross mode because the absence of segmentation is the distinguishing feature of the basic gross mode. They are not available under the single base / simulation basic implementation because segmentation assumes a change in network logic for each segment; the single base simulation uses only one set of network logic for the model.

In the fixed period specific implementation, the periods are fixed in date and duration by the data dates used for the contemporaneous schedule updates, usually in regular periods such as monthly. Each update period is analyzed. The act of grouping the segments for summarization after each segment is analyzed is called blocking.

The variable period/grouped period specific implementation establishes analysis periods other than the update periods established during the project by the submission of regular schedule updates. The grouped period implementation groups together the pre-established update periods while the variable period implementation establishes new periods whose lines of demarcation may not coincide with the data dates used in the pre-established periods and/or which can be determined by changes in the critical path or by the issuance of revised or recovery baseline schedules. This implementation is one of the primary distinguishing features of the variable period analysis method.

2. Global (Insertion or Extraction) vs. Stepped (Insertion or Extraction)

This specific implementation pair occurs under the single base, simulation basic implementation, which in turn occurs under the additive modeling and the subtractive modeling specific methods. Under the global implementation delays are either inserted or extracted all at once, while under the stepped implementation, the insertion or the extraction is performed sequentially (individually or grouped).

Although there are further variations in the sequence of stepping the insertions or extractions, usually the insertion sequence is from the start of the project towards the end, whereas stepped extraction starts at the end and proceeds towards the start of the project.

1.5. Underlying Fundamentals and General Principles

A. Underlying Fundamentals

At any given point in time on projects, certain work must be completed at that point in time so the completion of the project does not slip later in time. The industry calls this work, "critical work." Project

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

circumstances that delay critical work will extend the project duration. Critical delays are discrete, happen chronologically, and accumulate to the overall project delay at project completion.

When the project is scheduled using CPM scheduling, the schedule typically identifies the critical work as the work that is on the "longest" or "critical path" of the schedule's network of work activities. The performance of non-critical work can be delayed for a certain amount of time without affecting the timing of project completion. The amount of time that the non-critical work can be delayed is "float" or "slack" time referring to as Total Float.

A CPM schedule for a particular project generally represents only one of the possible ways to construct the project. Therefore, in practice, the schedule analyst must also consider the assumptions (work durations, logic, sequencing, and labor availability) that form the basis of the schedule when performing a forensic schedule analysis. This is particularly true when the schedule contains preferential logic (i.e., sequencing which is not based on physical or safety considerations) and resource assumptions. This is because both can have a significant impact on the schedule's calculation of the critical path and float values of non-critical work at a given point in time.

CPM scheduling facilitates the identification of work as either critical or non-critical. Thus, at least in theory, CPM schedules give the schedule analyst the ability to determine if a project circumstance delays the project or if it just consumes float in the schedule assuming that float is not specifically owned by either party under that terms of the contract. For this reason, delay evaluations utilizing CPM scheduling techniques are preferred for the identification and quantification of project delays.

The critical path and float values of uncompleted work activities in CPM schedules change over time as a function of the progress (or lack of progress) on the critical and non-critical work paths in the schedule network. Only project circumstances that delay work that is critical when the circumstances occur extend the overall project. Thus, when quantifying actual project delay, the accuracy in quantification is increased when the impacts of potential causes of delay are evaluated within the context of the schedule in effect at the time when the impacts happen.

B. General Principles

1. Use CPM Calculations

Calculation of the critical path and float must be based on a CPM schedule with proper logic (see Subsection 2.1.)

2. Concept of Data Date Must be Used

The CPM schedule used for the calculation must employ the concept of the data date or status date. Note that the critical path and float can be computed by commonly available commercial CPM software only for the portion of the schedule forward (future) of the data date.

3. Shared Ownership of Network Float

In the absence of contrary contractual language, network float, as opposed to project float, is a shared commodity between the owner and the contractor. In such a case float must be shared in the interest of the project rather than to the sole benefit of one of the parties to the contract.

4. Update Float Preferred Over Baseline Float

If validated, contemporaneous updates exist, relative float values for activities in those updates at the time the schedule activity was being performed are considered more reliable compared to relative float values in the baseline for those same activities.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

5. Sub-Network Float Values

What is critical in a network model may not be critical when a part of that network is evaluated on its own, and vice versa. The practical implication of this rule is that what is considered critical to a subcontractor in performing its own scope of work may not be critical in the master project network. Similarly, a schedule activity on the critical path of the general contractor's master schedule may carry float on a subcontractor's sub-network when considered on its own.

6. Delay Must Affect the Critical Path

In order for a claimant to be entitled to an extension of contract time for a delay event (and further to be considered compensable), the delay must affect the critical path. This is because before a party is entitled to time-related compensation for damages it must show that it was actually damaged. Because conventionally a contractor's delay damages are a function of the overall duration of the project, there must be an increase in the duration of the project.

7. All Available Schedules Must Be Considered

Regardless of the method selected for analysis, all available sources of planning and schedule data created during the project, including but not limited to, various versions of baselines, updates and as-builts, should be examined and considered, even if they are not directly used for the analysis.

2. SOURCE VALIDATION

The intent of the source validation protocols (SVP) is to provide guidance in the ***process*** of assuring the validity of the source input data that forms the foundation of the various forensic schedule analysis methodologies discussed in Section 3. Any analysis method, no matter how reliable and meticulously implemented, can fail if the input data is flawed. The primary purpose of the SVP is to minimize the failure of an analysis method based upon the flawed use of source data.

The approach of the SVP is to maximize the ***reliable use*** of the source data as opposed to assuring the underlying reliability or accuracy of the substantive content of the source data. The best accuracy that an analyst can hope to achieve is in the faithful reflection of the facts as represented in contemporaneous project documents, data, and witness statements. Whether that reflection is an accurate model of reality is almost always a matter of debatable opinion.

Source validation protocols consist of the following:

2.1. Baseline Schedule Selection, Validation, and Rectification (SVP 2.1)
2.2. As-Built Schedule Sources, Reconstruction, and Validation (SVP 2.2)
2.3. Schedule Updates: Validation, Rectification, and Reconstruction (SVP 2.3)
2.4. Identification and Quantification of Discrete Impact Events and Issues (SVP 2.4)

2.1. Baseline Schedule Selection, Validation, and Rectification (SVP 2.1)

A. General Considerations

The baseline schedule is the starting point of most types of forensic schedule analyses. Even methods that do not directly use the baseline schedule, such as the modeled subtractive method, often refer to the baseline for activity durations and initial schedule logic. Hence, assuring the validity

Copyright 2011 AACE® International, Inc.

of the baseline schedule is one of the most important steps in the analysis process.

Note that validation for forensic purposes may be fundamentally different from validation for purposes of project controls. What may be adequate for project controls may not be adequate for forensic scheduling, and vice versa. Thus, the initial focus here is in assuring the functional utility of the CPM baseline schedule for purpose of analysis as opposed to assuring the reasonableness of the information that is represented by the data or optimization of the schedule logic. Functional utility refers to the usefulness of the schedule data for quantitative, CPM-based calculations as opposed to a more subjective, qualitative assessment of the reasonableness of the baseline schedule. So, for example, the validation of activity durations against quantity estimates is probably not something that would be performed as part of this protocol. The test is that if it is possible to build the project in the manner indicated in the schedule and still be in compliance with the contract, then do not make any subjective changes to improve it or make it more reasonable.

The obvious exception to the above would be where the explicit purpose of the investigation is to evaluate the reasonableness of the baseline schedule for planning, scheduling and project control purposes. For those guidelines please refer to other Recommended Practices published by AACE[4].

The recommended protocol outlined below assumes that the forensic analysis contemplates the investigation of schedule deviations at Level 3 (sufficient detail to monitor and manage the overall project) degree of detail[5]. The user is cautioned that an investigation of schedule deviations at Level 1 or 2 may require less detail. Similarly, investigation of schedule deviations at Level 4 may require verification at a higher level of detail.

The recommended protocol below is worded as a set of investigative issues that should be addressed. If the baseline schedule is to be used in an observational analysis, the forensic schedule analyst may simply note the baseline's schedule's compliance or non-compliance with the various protocols below. If however, the baseline schedule is to be used in a modeled analysis, the various protocols below form the basis for documented alterations so that the adjusted baseline schedule both reflects its original intent as closely as possible and still meets the procedural elements of the recommended protocol.

SVP 2.1 also forms the basis of SVP 2.3, which deals with the validation and rectification of schedule updates, since early updates are based almost entirely on the baseline schedule.

B. Recommended Protocol

CAVEAT: When implementing MIPs 3.3 or 3.4, baseline validation protocols involving changes to logic or calendars should ***not*** be implemented.

1. Ensure that the baseline schedule is the earliest, conformed plan for the project. If it is not the earliest, conformed plan, be prepared to identify the significant differences and the reasons why the earliest, conformed plan is not being used as the baseline schedule.

2. Ensure that the work breakdown and the level of detail are sufficient for the intended analysis.

3. Ensure that the data date is set at notice-to-proceed (or earlier) with no progress data for any schedule activity that occurred after the data date.

4. Ensure that there is at least one continuous critical path, using the longest path criterion that

[4] AACE International's Planning & Scheduling Committee is developing an RP that includes an extensive discussion on the baseline schedule.
[5] Refer to AACE International Recommended Practice No. 37R-06 *Schedule Levels of Detail: As Applied in Engineering, Procurement and Construction* for additional information.

Copyright 2011 AACE© International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

starts at the earliest occurring schedule activity in the network (start milestone) and ends at the latest occurring schedule activity in the network (finish milestone).

5. Ensure that all activities have at least one predecessor, except for the start milestone, and one successor, except for the finish milestone.

6. Ensure that the full scope of the project/contract is represented in the schedule.

7. Investigate and document the basis of any milestones dates that violate the contract provisions.

8. Investigate and document the basis of any other aspect of the schedule that violates the contract provisions.

9. Document and provide the basis for each change made to the baseline for purposes of rectification.

10. Ensure that the calendars used for schedule calculations reflect actual working day constraints and restrictions actually existing at the time when the baseline schedule was prepared.

11. Document and explain the software settings used for the baseline schedule.

C. Recommended Enhanced Protocol

CAVEAT: When implementing MIP 3.3 or 3.4, baseline validation protocols involving changes to logic or calendars should ***not*** be implemented.

1. The level of detail is such that no single schedule activity (other than a milestone activity created solely for the purpose of payment) carries a contract payment value of more than one half of one percent (½%) of total contract payment value per unit of activity duration, and no more than five percent (5%) of total contract payment value per schedule activity.

2. Create separate activities for each responsible party.

3. Document the basis of all controlling and non-controlling constraints.

4. Replace controlling constraints, except for the start milestone and the finish milestone, with logic and/or activities.

5. Because delay scenarios often involve factors external to the original contract assumptions when the baseline was created, it may be necessary to add activities or enhance the level of detail beyond that contained in the baseline.

6. If the description of the schedule activity is too general or vague to properly ascertain the scope, the schedule activity should be subdivided into detailed components using other progress records.

D. Special Procedures

1. Summarization of Schedule Activities

a. If the level of detail of the baseline is clearly excessive in comparison to the delays being evaluated, the analyst may choose to summarize the baseline schedule for purposes of analysis. In doing so, the following guidelines are recommended:
b. Restrict the summarization of activities that fall on the critical or near-critical paths to only

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

those situations where the available as-built data do not correspond with the activity breakdown and/or the activity descriptions of the baseline schedule.

c. Organize the full-detail source schedule so that the identity of the activities comprising the summary schedule activity can be determined using:

   i. Summarizing or hammocking.

   ii. Work breakdown structure (WBS).

   iii. Coding of the detail activities with the summarized activity ID.

d. Restrict the summarization to logical chains of activities with no significant predecessor or successor logic ties to activities outside of the summarized detail.

e. Restrict the summarization to logical chains of activities that are not directly subject to delay impact evaluation or modeling.

2. Reconstruction of a Computerized CPM Model from a Hardcopy

a. The recommended set of hardcopy data necessary for an accurate reconstruction is:

   i. Predecessor & successor listing with logic type and lag duration, preferably sorted by activity ID.

   ii. Tabular listing of activities showing duration, calendar ID, early and late dates, preferably sorted by activity ID.

   iii. Detailed listing of working days for each calendar used.

b. The recommended level of reconstruction has been reached when the reconstructed model and the hardcopy show matching data for:

   i. Early start & early finish.

   ii. Late start & late finish.

c. A graphic logic diagram alone is not a reliable hardcopy source to reconstruct an accurate copy of a schedule.

3. De-Statusing a Progressed Schedule to Create a Baseline

If a baseline schedule is not available, but a subsequent CPM update exists, the progress data from the update can be removed to create a baseline schedule. Also, the schedule that is considered to be the baseline schedule may contain some progress data or even delays that occurred prior to the preparation or the acceptance of the baseline schedule. The general procedure consists of the following:

a. For each schedule activity with any indicated progress, remove actual start (AS) and actual finish (AF) dates.

b. For each schedule activity with any indicated progress, set completion percentage to 0%.

c. For each schedule activity with any indicated progress, set remaining duration (RD) equal to

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

original duration (OD).

i. The OD should be based on the duration that was thought to be reasonable at the time of NTP. If the update is one that was prepared relatively early in the project, it is likely that the OD is the same as the OD used in the baseline schedule.

ii. The OD should not be based on the actual duration of the schedule activity from successive updates.

d. Set the schedule data date (DD) to the start of the project, usually the notice-to-proceed or some other contractually recognized start date.
e. Review the scope of the progressed schedule to determine whether it contains additions to or deletions from the base contract scope. If so, modify the schedule so it reflects the base contract scope.

4. Software Format Conversions

a. Document the exact name, version, and release number of the software used for the source data which is to be converted.

b. If available, use a built-in automatic conversion utility for the initial conversion and compare the recalculated results to the source data for:

i. Early start & early finish.

ii. Late start & late finish.

c. Manually adjust for an exact match of the early and late dates by adjusting:

i. The lag value of a controlling predecessor tie and the calendar assigned to the lag value, if necessary.

ii. The relationship type of a controlling predecessor tie.

iii. Activity duration.

iv. Constraint type and/or date.

d. Document all manual adjustments made and explain and justify if those adjustments have a significant effect on the network.

2.2. As-Built Schedule Sources, Reconstruction, and Validation (SVP 2.2)

A. General Considerations

Along with the baseline schedule, the as-built schedule, more specifically the as-built schedule data, is one of the most important source data for most types of forensic schedule analysis methods. Even methods that do not directly use the as-built schedule, such as the modeled additive methods, often refer to the as-built schedule data to test the reasonableness of the model. As with the baseline, assuring the validity of the as-built schedule data is one of the most important steps in the analysis process.

It is important to accept the fact that the accuracy and the reliability of as-built data are never going to

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

be perfect. Rather than insisting on increasing the accuracy, it is better to recognize uncertainty and systematize the measurement of the level of uncertainty of the as-built data and document the source data. One of the simplest systems is to call all uncertainty in favor of the adverse party. However, it may be more defensible to use a set of consistent set of documentation for the as-built. Of course the most reasonable solution may be for both parties to agree on a set of as-built dates prior to proceeding with the analysis and the resolution of the dispute.

There are two different approaches to creating an as-built schedule. The first one is to create an as-built schedule from scratch using various types of progress records, for example, the daily log. The resulting schedule is defined by and potentially constrained by the level of detail and the scope of information available in the project records used to reconstruct the as-built.

The second approach is to adopt the fully progressed update as the basic as-built schedule and modify or augment it as needed. Often a fully progressed update is not available and the analyst must complete the statusing of the schedule using progress records. A subset of this approach is to create a fully progressed baseline schedule from progress records. In implementing this approach it is important to understand the exact scope of the activities in the baseline schedule before verifying or researching the actual start and finish dates.

The subtractive modeling methods require an as-built schedule with complete logic as the starting point. Note that the preparation of the model requires not only the validation of as-built dates but also the simulation of an as-built schedule based on actual durations, logic and lags.

To qualify as an as-built schedule, the cause of delays need not be explicitly shown so long as the delay effect is shown. For example, if a scheduled activity that was planned to be completed in ten days but took thirty days and is shown as such, the cause of the delay need not be shown for it to be a proper as-built. However, as the analysis progresses, eventually the delay causation would need to be addressed and made explicit in some form. Note that if the analyst chooses to explicitly show delays, SVP 2.4 covers the subject of identification and quantification of delays.

In most cases the as-built schedule is a fully statused scheduled with a data date equal to or later than the actual completion date of the project. However, the term "as-built" may also be used to describe the most recent schedule update. In this case, only the activities which are statused to the left of the data date are considered "as-built" data. Consequently it is possible to perform a comparative as-built analysis, such as MIP 3.1, prior to the actual completion of the overall project, as long as the delaying events and its effects have all occurred prior to the data date.

The as-built critical path cannot be directly determined using conventional float calculation on the past portion (left) of the data date. Because of this technical reason, often the critical set of as-built activities is called the ***controlling*** activities as opposed to ***critical*** activities.

Objective identification of the controlling activities is difficult, if not impossible, without the benefit of any schedule updates or at least a baseline CPM schedule with logic. Therefore, in the absence of competent schedule updates, the analyst must err on the side of over-inclusion in selecting the controlling set of as-built activities. The determination must be a composite process based on multiple sources of project data including the subjective opinion of the percipient witnesses.

Contemporaneous perception of criticality by the project participants is just as important as the actual fact of criticality because important project execution decisions are often made based on perceptions. For more on the subject of Identifying the As-Built Critical Path, refer to Subsection 4.3.C.

The recommended protocol outline below assumes that the forensic analysis contemplates the investigation of schedule deviations at Level 3 (project controls) degree of detail. The user is cautioned that an investigation of schedule deviations at Level 1 or 2 may require less detail.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

Similarly, an investigation of schedule deviations at Level 4 may require verification at a higher level of detail.

B. Recommended Protocol

1. If a schedule update is the primary source of as-built schedule data:
   a. Ensure that the data date is set equal to or later than the events and impacts that are to be evaluated in the analysis.
   b. Ensure that all activities to the left of the data date have actual start and completion dates.
   c. Ensure that all activities to the right of the data date do not have actual start or finish dates.
   d. Perform a check of the as-built dates using the source deemed most reliable other than the update itself.
   e. If possible, interview the project scheduler or other persons most knowledgeable for updated data collection and data entry procedures to evaluate the reliability of the statusing data.
   f. Determine and allow for whether significant changes have been made to activity descriptions and IDs.
   g. Understand the exact scope and assumptions underlying the schedule activities so that the as-built data is a reflection of the same scope and assumptions.
2. Perform a check of all critical and near-critical activities as defined by this RP and a random 10% sampling of all activities against the reliable alternate source to determine whether a more extensive check is necessary. Note that this step may have to be repeated as ongoing analysis warrants the inclusion of more activities as critical or near-critical than originally identified.
3. Dates of significant activities should be accurate to 1 working day and dates of all other activities should be accurate to 5 working days or less.
4. Contractual dates such as notice-to-proceed, milestones, and completion dates should be accurate to the exact date. Should those dates be subject to dispute, the justification for the selection of the dates should be clearly stated.

C. Recommended Enhanced Protocol

1. Tabulate all sources of as-built schedule data and evaluate each for reliability.
2. If a baseline schedule exists and where a direct comparison between the baseline and the as-built would be difficult due to changes in activity IDs, descriptions, and/or software packages, an "as-built" can be created by fully progressing the planned activities allowing for a one-to-one planned versus actual comparison of each baseline schedule activity. See Subsection 2.2.D.2.
3. Show discrete activities for delay events and delaying influences.
4. If the description of the schedule activity is too general or vague to properly ascertain the scope, the schedule activity should be subdivided into detailed components using other progress records.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

D. Special Procedures

1. Creating an Independent As-Built from Scratch "Daily Specific As-Built" (DSAB)

a. An as-built record of the work on a project is often necessary to verify the accuracy of the CPM dates reflected in the various schedule updates and to identify and correlate events inside a single CPM schedule activity. This identification of events inside a CPM schedule activity is essential to particularize possible shifts in the schedule and explain responsibility for any delays.

b. The best source for as-built data is a continuous daily history of events on the project developed and maintained by persons working on the project. Traditionally, there are contractor's daily reports, but there may also be owner's daily inspection reports or a scheduler's daily progress report. These daily records can be augmented as required by other primary sources such as certified payrolls and timesheets, completion certificates, inspection reports, incident reports, and start-up reports. Secondary sources such as weekly meeting minutes or progress reports can also provide insight into what happened.

c. It is often best to develop the DSAB using a database where every entry in the daily report is separately listed as a record. Such a database would allow for the complete history of each schedule activity over time, or an electronic version of the daily report coded for activities worked on each particular day. Notes on the daily reports such as problems or delays can be listed as additional activities.

d. It is important to develop a correlation between as-planned activities and as-built activities. Baseline schedule activities usually include descriptions sufficient to distinguish them from other similar activities. The as-built schedule is coded to the same activities included in the baseline schedule. It is frequently the case that there is not a perfect match between the activities of the two schedules. Some of the as-planned activities do not appear in the as-built, and, more frequently, there are significant as-built activities that are either in greater detail than the as-planned or simply do not appear in the as-planned.

   i. *Activity in the baseline schedule, but not the as-built schedule*--There are generally three reasons for an activity to appear in the baseline schedule but not the as-built schedule. The first and most likely reason is that the as-built is not sufficiently detailed. This is usually because the work depicted in detail in the baseline schedule is described more generically in the as-built. In this case, the preferred method would be to divide the as-built activity into two constituent parts if contemporaneous notes permit. If this is not possible, then the two represented activities in the baseline schedule should be combined. The second reason could be that the schedule activity was deleted by change order and thus does not appear in the as-built. If this is the case, it is generally not appropriate to modify the baseline schedule. Rather, the lack of an as-built activity will have to be evaluated in light of successor work. The third reason rarely occurs: The contractor may not have performed a specific aspect of the work, even though it is required. In such a situation the longer duration of the predecessor or successor must be considered in light of the "missing" schedule activity.

   ii. *Activities in the as-built schedule, but not the baseline schedule --There generally are* three reasons for an activity appearing in the as-built schedule but not the baseline schedule. The first and most likely possibility is that the actual activity is simply reported in more detail in the as-built than in the as-planned. In this situation, it is generally better to combine the more detailed as-built data into a schedule activity that is reflected in the as-planned. However, this extra detail from the as-built may be necessary in performing a responsibility analysis. The second reason could be that the activity was new--it was

Copyright 2011 AACE® International, Inc.

added by a change order. If this is the case, it is generally again not appropriate to modify the baseline schedule. Rather, the new as-built activity should be treated simply as additional work and coded in such a manner as to indicate this situation and permit the analysis to properly consider it. The third reason is that the baseline schedule might not completely reflect the actual scope of contractual work. Again, it is probably best not to alter the baseline schedule but rather to reflect the actual work activity in its proper logical as-built sequence. This should not occur if the analysis is utilizing a properly validated baseline schedule (see SVP 2.1).

e. Line up the as-built and baseline schedule--This step can be performed either in a large database with graphical output, or can be done in a more personal/mechanical manner by hand.

   i. *Using a database*—By using a database, the analyst can arrange or cluster the activities according to whatever sequence seems most appropriate. For example, it may be useful on a multi-building project to review the data by building. Alternatively, if the performance of a particular trade is important, then the review could be performed based on trade. It is possible through export from a database to a graphical program to plot the baseline schedule data (early/late, start/finish) directly against the as-built record.

   ii. *By hand. (A.K.A. X-chart or Dot-chart)*—On small projects it is possible to simply plot the data graphically by hand. This technique is called the "X-chart" because the analyst placed an "X" in the appropriate date and activity of a chart with dates along the X-axis and activities along the Y-axis. This pre-computer technique is still useful for smaller projects or partial analysis.

f. Identify the true "start" of an activity—It is usually relatively easy to identify from the as-built data the start of an activity but not always. It is recommended that the start of an activity be considered the first date associated with a series of substantive work days on the activity. Care should be taken in discounting "false starts" or "false finishes" that they do not reflect a true delay. Care should also be taken to ensure that a false start does not actually represent an actual start coupled with a suspension due to a delay event.

g. Identify the true "finish" of an activity—The same logic as above applies to the finish dates. Generally the analyst, absent specific data to the contrary, should assume that when the period of concentrated work is completed on an activity, the activity is complete. Another possible criterion is that an activity can be considered *logically* complete when a successor tied with a simple FS logic is able to start substantive work.

2. Creating a Fully Progressed Baseline

a. A fully-progressed version of the baseline schedule allows for a comparison of the plan to actual performance at an individual activity level of detail. Often, however, a progressed baseline is not readily available because the schedule is changed during progress.

b. The most expedient procedure to create a fully progressed baseline is to use the as-built data for each activity contained in the final update and transfer them to the corresponding baseline activities. In implementing this procedure the analyst must:

   i. Recognize that using the activity ID as the sole criterion for correspondence between the final update and the baseline may not be adequate if the activity descriptions are not virtually identical.

   ii. Therefore, in addition, the analyst must understand the scope and the assumptions

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

underlying the baseline schedule activities so that the as-built data is a reflection of the same scope and assumptions.

c. The baseline set of activities may have to be summarized to receive the corresponding as-built data if the activities have been summarized in the final update.

d. If the corresponding final update activities are more detailed than the baseline activities, determine the update activity representing the start of the less detailed activity chain in the baseline and the update activity representing the finish of that same chain in order to set the actual start and finish dates.

3. Determination of 'Significant' Activities for Inclusion in an As-Built

Many CPM schedules in current use contain hundreds if not thousands of activities. While that level of detail may be necessary to keep track of performance and progress for the purpose of project controls, the facts of the dispute may not require the analysis of each and every activity in a forensic context. This section offers guidelines for streamlining and economizing the as-built analysis process without compromising the quality of the process and the reliability of the results.

Because this step typically occurs early in the analysis process, the analyst may not have a full understanding of the project and the issues. Therefore, the criterion is of ***prima facie*** significance. In other words, if in doubt, consider it significant. As a result, it is possible that at the end of the analysis some of the selected activities are considered insignificant. But that is better than discovering at the end of the analysis that some significant activities and key factors were not considered. This is a multi-iterative process that requires continuous refinement of the set of significant activities during the analysis process.

The main factor for significance is criticality. The procedure for determining the as-built critical path is discussed in Subsection 4.3.C and the procedure for determining the significant activities includes the procedure set forth in Subsection 4.3.C. However, in addition to those items the following items are recommended for inclusion in the significant set:

- Suspected concurrent delays including those alleged by the opposing party
- Activity paths for which time extensions were granted
- Delay events and all activities on the logical path(s) on which those events lie
- All milestones used in the schedule
- High-value (based on pay loading) activities
- High-effort (based on resource loading) activities

Note that in many cases some significant activities are not discretely and explicitly contained in the CPM model. Obviously, these extraneous activities must also be considered in the as-built.

4. Collapsible As-Built CPM Schedule

The fundamental difference between a fully progressed CPM and a collapsible as-built CPM schedule is in the schedule logic. The fully progressed CPM schedule can graphically illustrate the as-built condition using the actual start and actual finish dates assigned to each schedule activity. However, the schedule cannot be used for calculation because it has been fully progressed. Therefore, the actual activity duration (AD) and the logic ties are no longer controlling

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

the network calculation. On the other hand, the collapsible as-built is a CPM model of the as-built condition. The schedule is revised by assigning actual durations to the activities and tying them together with logical relationships so that the actual start and the actual finish dates are simulated in the schedule as calculated start and finish dates. For a step-by-step procedure please refer to MIP 3.8.

5. Summarization of Schedule Activities

a. If the level of detail of the as-built is clearly excessive in comparison to the delays being evaluated, the analyst may choose to summarize the as-built schedule for purposes of analysis. In doing so, the following guidelines are recommended:
b. Ensure that summarization is restricted to activities that do not fall on the critical or near-critical paths.

c. Organize the full-detail source schedule so that the identity of the activities comprising the summary schedule activity can be determined using:

   i. Summarizing or hammocking.

   ii. Work breakdown structure (WBS).

   iii. Coding the detail activities with the summarized activity ID.

d. Restrict the summarization to logical chains of activities with no significant predecessor or successor logic ties to activities outside of the summarized detail.

e. Restrict the summarization to logical chains of activities that are not directly subject to delay impact evaluation or modeling.

2.3. Schedule Updates: Validation, Rectification, and Reconstruction (SVP 2.3)

A. General Considerations

SVP 2.3 discusses issues involved in evaluating the project schedule updates for use in forensic schedule analysis.

The schedule update consists of the as-built portion on the left side of the data date, the as-planned portion on the right side of the data date, and the data date itself. Because SVP 2.1 addresses the issues relevant to the as-planned portion, and 2.2 addresses the issues relevant to the as-built portion, the focus of SVP 2.3 is on the practice of updating the schedule with progress information and the reliable use of that progress data.

B. Recommended Protocol

1. Interview the project scheduler or other persons-most-knowledgeable for updated data collection and data entry procedures to evaluate the reliability of the statusing data.

2. Assemble all schedule updates so that they cover the entire project duration from start to finish or up to the current real-time data date.

3. Use officially submitted schedule updates.

4. Ensure that the update chain starts with a validated baseline.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

5. Check on the consistency of the actual start and finish dates assigned to each schedule activity from update to update.

6. For each update, identify all changes made that extend, reduce, or change the longest path or the controlling path to an interim contractual milestone.

7. If other progress records are available, check the remaining duration and percentage complete values for consistency with these other progress records and make.

C. Recommended Enhanced Protocol

1. Implement SVP 2.1 for the as-planned portion of each schedule update, including the baseline.

2. Implement Subsection 2.4.D.2. to bifurcate the pure-progress step from the logic revision steps in each update.

D. Special Procedures

1. Reconstructed Updates

There are two main schools of thought on recreating a partially statused schedule. The first school of thought, called the hindsight method, states that since the forensic scheduler is performing the analysis after the job has been completed, the analyst should use the actual performance dates and durations to recreate the updates.

The second school of thought, called the blinders or the blindsight method, requires the analyst to pretend that the analyst does not have access to actual performance data and simulate the project scheduler's mindset at the time the update was actually being prepared. Therefore, the analyst needs to consider what the scheduler would have assigned as the remaining duration for that schedule activity at that time. If the analyst does not have reliable access to the scheduler's contemporaneous bases for assigning remaining durations, the analyst needs to be as objective as possible and follow a remaining duration formula.

Outlined below are the two methods:

a. "Hindsight" Method

In this method, the actual status of the schedule activity in the succeeding schedule update period is used to calculate the remaining duration of the previous schedule update. This is delineated in the formula below:

i. RD = actual duration of succeeding update - (data date - actual start of activity) where the data date is the data date of the existing schedule update that needs to be statused.

b. "Blindsight" Method

In this method, it is assumed that the analyst does not have the update schedule for the succeeding period and has no knowledge of the project conditions later than the update under investigation. Therefore, the analyst must stand in the shoes of the scheduler at the time of the project. Note that the progress curve created by this method assumes a straight line.

i. IF: data date (DD) - actual start of the activity (AS) < original duration (OD), THEN:

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

remaining duration (RD) = OD - (DD - AS)

ii. IF: DD - AS > OD, THEN: RD = 1

2. Bifurcation: Creating a Progress-Only Half-Step Update

Bifurcation (aka half-stepping or two-stepping) is a procedure to segregate progress reporting from various non-progress revisions inherent in the updating process. This should not be considered a revision or modification of the update schedules but rather a procedure that examines selected data, namely logic changes isolated by this process, which may be present in the updates of record. For a step-by-step implementation of the bifurcation process refer to MIP 3.4

3. Changing the Contemporaneous Project Schedule for the Analysis

Due to the complex nature of construction projects and the fact that CPM schedules are models of reality, not reality itself, the analyst will inevitably encounter an instance when the contemporaneous project schedule contains an anomaly that could affect the assessment of critical project delay. Instead of completing the analysis using a schedule with an anomaly or entirely abandoning the schedules because of the anomaly, the analyst has the option to correct the anomaly in the contemporaneous project schedule and use the corrected schedule as the basis for the analysis.

Correcting the contemporaneous schedules does not automatically result in a shift in classification of the analytical technique from an analysis based on contemporaneous schedules such as MIP 3.3 (Observational / Dynamic / As Is) to one based on non-contemporaneous schedules such as MIP 3.5 (Observational / Dynamic / Modified or Recreated). However, these changes and how they affect the contemporaneous data, plan, and information reported, should be disclosed by the analyst along with the objective reason for those changes.

Having stated that, the preference of every analyst should be to use the contemporaneous schedules and updates as they were prepared, reviewed, or accepted, and used on the project. This belief is grounded in the fact that the parties used the imperfect schedules to make decisions and manage the project work. Thus, these schedules, even though not perfect, are the best representation of the parties' objectives and understanding of the project contemporaneously and are an indicator of each party's performance. The fact that the contemporaneous schedules were rejected by the owner is not automatically dispositive of their value. This is because where delays are present during the project schedules are often rejected for reasons other than their technical reliability as a schedule, but for reasons of contractual compliance regarding the completion date.

However, absent contract language mandating the use of the contemporaneous schedules to quantify delay, corrections to the contemporaneous schedules can be properly considered by the analyst without eroding the credibility of the resulting analysis. The following is a discussion of examples of revisions to the contemporaneous schedules that may fit within the boundaries of such corrections:

a. Correcting a Wrong Actual Start or Finish Date

Sometimes, the actual start and finish dates recorded in the contemporaneous project schedules may be inaccurate. The analyst may consider relying on other contemporaneous documents to correct these dates. The analyst may limit the correction of the wrong actual start and finish dates to paths of work that have the

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

potential to delay the project and are on critical or near-critical paths. When an analyst chooses to correct a wrong actual date in the schedule, the analyst should be mindful that correcting a date may result in a shift in the critical path. If the project team never recognized that the date was wrong, and relied on the schedule generated by calculations based on that date, the correction should not be made if the focus of the analysis is on the mindset of the team on which decisions were made at the time, as opposed to developing an accurate as-built schedule.

b. Correcting Schedule Anomalies

A schedule anomaly is any feature in the schedule that creates a physically or logically impossible sequence of work or a sequence of work that is not permitted by the conformed contract provisions. These features may include:

i. An incorrect logic relationship
ii. A missing logic relationship
iii. An incorrect activity based on described scope of the activity
iv. A missing activity

If a sequence of work is possible and contractually permitted, it should not be corrected even if, in the opinion of the analyst, there is a 'better' way of performing the work. The correction of an anomalous feature can gain enhanced validity if the project participants recognized the anomaly in the schedule contemporaneously and that the anomaly was ultimately corrected by the project team in the contemporaneous project schedules at some point during the project. or recognized and identified as an anomaly in the schedule in a contemporaneous project document.

c. Bringing a Revision Back in Time to Represent Added or Changed Work

This situation occurs when a schedule revision or fragnet (fragmentary network representing added or changed work) was inserted into the contemporaneous project schedules well after the change or event that necessitated the revision occurred. If the schedule revision or fragnet was not inserted into the appropriate contemporaneous project schedule, but was recognized and identified in a contemporaneous project document as a change that should have been made, then the analyst may decide to insert the schedule revision or fragnet into the contemporaneous schedule update in effect when the change occurred to measure the resulting delay.

This correction involves bringing back (or inserting) the schedule revision or fragnet to the point or nearest the moment in time) when the event occurred. The schedule revision or fragnet that is brought back in time (or inserted) will typically be a duplicate of an existing revision or fragnet that was inserted into the schedule during the project or as described in the contemporaneous project documents. It must be noted that if the fragnet consists of actual durations, and relationships, this procedure would create a hindsight impact simulation as opposed to a blindsight impact simulation, which would be implemented with a fragnet consisting of planned durations and relationships estimated at the time the event occurred.

d. Splitting an Activity

Typically, updates increase in detail as the schedule progresses, therefore the number of activities increase, not necessarily an increase in scope but an increase in detail. When a variance analysis is performed between two updates with different activity counts, exact correlation is not possible since the more detailed activity set did not

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

exist in the previous update. Therefore, the detailed activity set should be replicated in the previous update with the same planning duration, logic and dates of the summary activity.

All of these corrections should be described in the analyst's report along with the basis of the corrections so that the other parties and the fact finders understand the changes that the analyst made to the contemporaneous schedule.

When an analyst concludes that more extensive revisions are necessary to the contemporaneous project schedules than those contemplated in paragraphs a., b., and c., above, such revisions should be made cautiously, consistently, and founded to the greatest extent possible on the contemporaneous project documentation. The analyst must also remember that most schedules are models and, hence, perfection is not the standard.

The issue of correcting the schedule is one of balance and reasonableness and, for these reasons corrections should not be made across the board or automatically.

Note that some significant errors in the underlying analysis schedules may not substantially affect the ultimate conclusions of the analysis. For example, imagine a schedule where a significant activity was omitted. Even though the work is absent from the schedule, it would not necessarily be absent from the analysis. If three activities, A, B, and C, must be performed in sequence, but the schedule leaves out B, the analysis will still detect a delay due to B. This is because C cannot start until B is completed. Any delay attributable to B will show up as a delay to the start of C. There may be no need to "correct" the schedule by adding B into the schedule. Delays to B may be addressed by the analysis even though B is not present.

Finally, the analyst must also be consistent and maintain independence and objectivity. The analyst cannot limit its corrections to those that have the affect of improving the analyst's client's position.

2.4. Identification and Quantification of Discrete Delay Events and Issues (SVP 2.4)

A. General Considerations

SVP 2.4 discusses the compilation of information regarding delay events, activities and influences that are inserted or extracted in modeled methods or used in evaluating the observational methods. As stated in the introduction to the SVP, the approach of the SVP is to maximize the reliable use of the source data as opposed to assuring the reliability or the accuracy of the substantive content of the source data. The best accuracy that an analyst can hope to achieve is an objective reflection of the facts as represented in documents, data and witness statements. Whether that reflection is an accurate model of reality is almost always a matter of debatable opinion. This is especially true in assembling delay data and making the causal connection between the delay event or influence and the impacted activity.

1. 'Delay' Defined

For the purpose of this section, the term, 'delay', is considered neutral in terms of liability. Delay simply means a state of extended duration of an activity, or a state of an activity not having started or finished on time, relative to its predecessor.

a. Activity-Level Variance (ALV)

Forensic delay analysis primarily focuses on determining start or duration variances of a specific

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

schedule activity otherwise known as activity-level variances or ALV's.

ALV's are the result of several types of delay causes:

- Waiting (delayed start)
- Performance (Productivity Impacts, Additional Work, etc.)
- Interruption (Work Stoppage, Weather, Strikes, etc.)

For example a delayed start of an activity awaiting a response to an RFI is the delay cause "waiting." In contrast, a delayed start due to the performance of a scope of work that was missed at bid time is the performance of additional scope of work. Finally, an activity experiencing numerous rain days over several months is experiencing interruption of work or otherwise known as disruption. Given these variations there are two main ways in which ALVs are expressed in a CPM schedule:

i. Delayed Relative Start

This is the variance between the planned start relative to the planned controlling predecessor to the actual point of start. Because this is a relative measure, it cannot be determined by the comparison of planned date (either early or late) to the actual, which would yield a cumulative delay figure. The cumulative delay incorporates all the delays that occurred previously in the activity chain.

ii. Extended Duration

An extended duration delay occurs when the actual activity duration exceeds the planned original duration or reasonable duration required to perform the described activity. Unlike the delayed relative start case, extended duration calculations are not dependent on predecessor logic for quantification. Extended durations may result from continuous impact, intermittent impact such as stop-and-go operations, weather delays, or from discrete periods of added work or suspensions. In addition, extended durations may be due to experiencing lower labor productivity than planned for when the activity duration was developed. Unless the delay is fully attributable to a discretely identifiable period of exclusive extra work performance, quantification of this type of delay requires some estimating on the part of the analyst.

b. Distinguishing ALV from Project-Level Variance (PLV)

The ALV should be distinguished from the project-level variance (PLV) which is also a variance but at the overall project level. While the ALVs occur close in time to the causes, i.e. in the same period, the PLV may be months apart from the actual cause(s of the delay PLV is the result of the aggregation of ALV's after taking into account network float. Within the context of this RP, ALVs are considered 'delays' regardless of the amount of float they carry. The activity experiences a delay if an ALV exists regardless if the delay affects the project completion date, i.e. the PLV.

c. Distinguishing Delay-Cause from Delay-Effect

It is important for the analyst to be able to distinguish the cause of delay from the resulting effect. For example, a fully updated schedule may show extended activities and delayed start of activities relative to their controlling predecessors. While the cause may not be apparent, a competent statusing of the schedule will show the delay-effects. What caused the initial ALV for the chain of activities often does not appear on the schedule but must be investigated and researched using project documents, data and witness interviews. If, on the other hand, a delay was appropriately inserted into the schedule as a new activity as a predecessor to the activity

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

with the start delay, the cause of the ALV is readily apparent.

The identification of delay-causes is a focus in the latter phases of delay analysis, during causation analysis.

d. Delay Characterization is Independent of Responsibility

ALV's are considered "delays" independent of the responsibility for those variances. Thus an ALV can be contractor-caused or owner-caused, but it is still a delay. Similarly, the characterization of delays as 'excusable', 'compensable', 'concurrent' and 'paced' are attributes that are assigned well after the initial delay analysis starts by examining ALVs based on the causation analysis that has been performed after the schedule analysis is completed.

2. Identifying and Collecting Delays

a. Two Main Approaches to Identification and Collection

i. Cause-Based Approach

This approach starts with the collection of suspected causes of delays and then determining the effect they had on the baseline schedule and individual schedule updates. It is a 'causes in search of effects' approach. This is often used in the additive modeling methods. For example, an analysis may review the monthly reports, searching for issues that may have caused delays to the project.

ii. Effect-Based Approach

This approach is the opposite of the cause-based approach. It starts by compiling a set of ALV's and then identifies the causes of those variances. Specific documents that are associated with the time-frame, activity description, and amount of ALV's are reviewed to see if they could have created this variance. This approach is applied in the observational and the subtractive modeling methods. In the majority of the analysis scenarios, the effect-based approach is the more economical approach.

b. Criticality of the Delay

It is important for an analyst to not prejudge criticality, nor limit the collection process to only those delays perceived to affect the critical path, especially if the delays are being identified for a modeled method. In addition, a path that is near critical in one window maybe become critical in the next especially if delays are being extracted from the critical path. For example, in the Modeled / Subtractive / Single Simulation (MIP 3.8) and the Modeled / Subtractive / Multiple Base (MIP 3.9) methods, as delays are being stripped from the critical path, the path will "collapse" and the first near critical path will become critical. This is an iterative method and therefore, paths may collapse numerous times so that a path that originally has plenty of float becomes the critical path. The ultimate critical path quantification from the effect of each delay will eventually be determined in the modeling process. It is impossible for the analyst to know what the final critical path is until all of these delays have been added in (MIP's 3.6 and 3.7 or extracted out (MIP's 3.8 and 3.9).

Also, float consumption and ownership can be relevant where issues involve disruption, loss of productivity, and constructive acceleration regardless of the criticality of the activity.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

3. Quantification of Delay Durations and Activity Level Variances

There are two different modes of quantification of delay durations. They are the retrospective actual mode (hindsight) and the prospective forecasted mode (blindsight). The hindsight mode relies on project documentation of actual chronological events that constitute the set of activities considered to be the cause or the effect of delays. The blindsight mode uses activities, sequences and durations that were estimated prior to the occurrence of the alleged delay. Where the focus of the analysis is to identify actual schedule impact, the hindsight mode is preferred. If the focus of the analysis is to identify potential impact or to ascertain the state of mind of the project team at the time of the impact, the analyst would use the blindsight mode.

Under either of these modes, there are two fundamentally different methods for quantifying delay durations. They are the variance method and the independent method.

a. Variance Method

The variance method is a comparative method that determines the delay duration by computing the ALV between the as-built activity duration and the unimpacted or planned activity duration obtained from the baseline schedule, an updated schedule or other non-CPM sources such as a measured-mile analysis or some reasoned estimate. This method is purely mathematical in nature. Two figures (a planned and an actual) are subtracted from each other to compute the variance. These two figures may be dates, durations, or productivity measurements. Thus, the entire variance needs to be tied to one or more causes for the variance.

b. Independent Method

In contrast, the independent method is not comparative. The delay duration is determined from project documentation that contemporaneously chronicled or otherwise recorded the occurrence of the delay or quantified the impact resulting from a delay event. Under this method, the answer to the question whether causation has been established or not depends on the type and content of the documentation that was used for the quantification.

These methods do not have to be exclusive of each other. The analyst may elect to use a mixture of the two methods depending on the nature of the delay or the availability of necessary documentation. Also, one may elect to use both methods for each delay to evaluate and reconcile the different outcomes resulting from the differences.

For example, if the documentation consists of a daily diary entry that states that a specific activity was suspended for that specific day pending an investigation of a differing site condition, there is prima facie establishment of causation (one day of delay is clearly stated). But if the documentation is a letter stating that, "during the previous month many activities experienced extensive delays due to Owner-changes," further analysis to determine the delay duration and which activities were affected by the delaying events will be needed.

The example below is given to illustrate the difference between the variance and independent method: Suppose that the ALV for a specific activity is ten days. In the variance method, the entire ten days will be distributed among the responsible parties. However, in the independent method, the ALV is not even looked at in the beginning. Instead, the analyst researches project documentation to determine the delay amount. Therefore, if the project documentation only states that the activity was delayed three days by an event, the remaining seven days of the ALV will not be assigned to this delay and may not be assigned to the party responsible for this delay. If the documentation states the delay event was twelve days, the analyst will consider the delay to the activity was twelve days but since the ALV is ten, the other two days may have been made up via acceleration. Therefore, in the variance method, the analyst is guided to the delay amount by the

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

amount of ALV. On the other hand, in the independent method, the analyst does not review the ALV, but relies on what is written in the documentation to make its determination of delay amount.

4. Cause of Variance

What caused the variances often does not appear on the schedule but must be investigated and researched using project documents, data and witness interviews. In researching, evaluating and modeling the cause-and-effect relationships, the analyst must be aware that these relationships are often successively linked into a chain of alternating causes and effects. In addition, an ALV may be created by more than one cause.

Causation is established primarily on the quality of documents available for the analyst at the time of the schedule analysis. Some documents are more reliable than others.
Development of a document-type list and a reliability assessment for each document type are often the first steps prior to a detailed review of the record. This list is essential for two reasons. First, the analyst will become familiar with the types of documents that are available for review. Discussions with the project team concerning types of documents as well as the chronology of events will optimize the causation research process. For example, if the analyst is not aware that daily construction reports exist, and instead relies on monthly reports for determining causation, its conclusions of delay amount and impact may be very different.

5. Assigning or Assuming Variance Responsibility

When the forensic schedule analyst does not possess adequate information to make an independent determination of responsibility for the delay, the analyst may have to proceed with the analysis based on an assumption. Such assumptions should be noted and clearly stated as part of the final analysis product along with the basis of such assumption.

a. Contractor delay is any delay event caused by the contractor or those under its control, or the risk of which has been assigned solely to the contractor . Typical examples of contractor delay events include, but are not limited to, delays caused by rework resulting from poor workmanship, subcontractor delays, insufficient labor, management and coordination problems, failure to order necessary materials and failure to secure contractual approvals.

b. Owner delay is any delay event caused by the owner, or the risk of which has been assigned solely to the owner . Examples of owner-delay events include, but are not limited to, delays resulting from change orders, extended submittal review, directed suspension of work, delayed owner-furnished equipment, differing site conditions, and defective contract documents.

c. Force majeure delay is any delay event caused by something or someone other than the owner (including its agents) or the contractor (or its agents), or the risk of which has not been assigned solely to the owner or the contractor by contract language and/or local industry custom and practice. Examples of force majeure delays include, but are not limited to, delays caused by acts of God, inclement weather, acts of war, extraordinary economic disruptions, strikes, and other events not foreseeable at the time of contract. Many contracts specifically define force majeure events. Although strictly not a 'force majeure' event, delays caused by parties external to the contract may also be classified under this category if there are no contractual risk assignment to the contractor or the owner for such delays.

B. Recommended Protocol

1. Determine the delay identification and collection approach to be used.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

2. Tabulate all sources of delay data and evaluate each for reliability. If the documentation sources have conflicting data, the analyst should use the source that is the most reliable and explain why the source used is considered the most reliable.

3. Identify the specific actual start date and actual finish date for each delay along with the scope of work that occurred on those dates and their significance in relation to the delay.

4. Correlate the delay event to the specific activity or activities in the schedule affected by the delay and determine if it affected the start of the activity or the duration of the activity.

5. Identify, tabulate, and quantify all significant activity-level variances. The significance of the ALV is done on a case by case basis, but the criteria for that significance and their bases should be noted.

6. Determine the criticality of those significant ALVs.

7. Determine the causation of those significant ALVs based on the correlation of delay event to activity as described in step number four.

8. Determine responsibility or proceed based on assumed allocation of responsibility

9. Quantify the claim portion of each ALV for which causation has been determined.

   a. If the delay is not a complete stoppage or not continuous throughout the entire period of the activity's duration, quantify the net delay duration during that time frame.

   b. For each delay issue, if applicable, distinguish the informational delay portion from the actual performance of disputed/extra work.

   c. For each discrete delay event, identify the activity ID number or numbers of the schedule activity or activities that were impacted by the delay.

C. Recommended Enhanced Protocol

1. Establish the activity coding structure for various attributes of delays, such as responsibility, issue grouping and documentation source so that different delay scenarios can be analyzed and relevant reports can be generated with minimal difficulty.

2. For each delay issue, if applicable, document and reconcile the claimed delay duration against any contract time extensions already received for that issue. The analyst needs to ensure that the entitlement quantification does not overlap or "double-dip" on pre-existing granted time extensions.

D. Special Procedures

1. Duration and Lag Variance Analysis

Prepare a table comparing the planned duration of a schedule activity to the actual duration and determine the cause for each significant variance.

Prepare a table comparing the planned controlling predecessor logic of the schedule activity to the actual controlling predecessor logic and determine the cause for each significant variance both in terms of change in type of logic and lag values.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

3. METHOD IMPLEMENTATION

The intent of the Method Implementation Protocols (MIP) is to describe each forensic schedule analysis method identified in the Taxonomy and to provide guidance in implementing these methods. The user is reminded that the focus of this RP is on procedure as opposed to substance. Adopting a method and using the recommended procedures do not, on their own, assure soundness of substantive content.

The use of the Source Validation Protocols (SVP) discussed in Section 2 is integral to the implementation guidelines discussed here. Therefore a thorough understanding of the SVP is a prerequisite to the competent use of the MIP.

Method implementation protocols consist of the following:

3.1. Observational / Static / Gross (MIP 3.1)
3.2. Observational / Static / Periodic (MIP 3.2)
3.3. Observational / Dynamic / Contemporaneous As-Is (MIP 3.3)
3.4. Observational / Dynamic / Contemporaneous Split (MIP 3.4)
3.5. Observational / Dynamic / Modified or Recreated (MIP 3.5)
3.6. Modeled / Additive / Single Base (MIP 3.6)
3.7. Modeled / Additive / Multiple Base (MIP 3.7)
3.8. Modeled / Subtractive / Single Simulation (MIP 3.8)
3.9. Modeled / Subtractive / Multiple Base (MIP 3.9)

3.1. Observational / Static / Gross (MIP 3.1)

A. Description

MIP 3.1 is an observational technique that compares the baseline or other planned schedule to the as-built schedule or a schedule update that reflects progress.

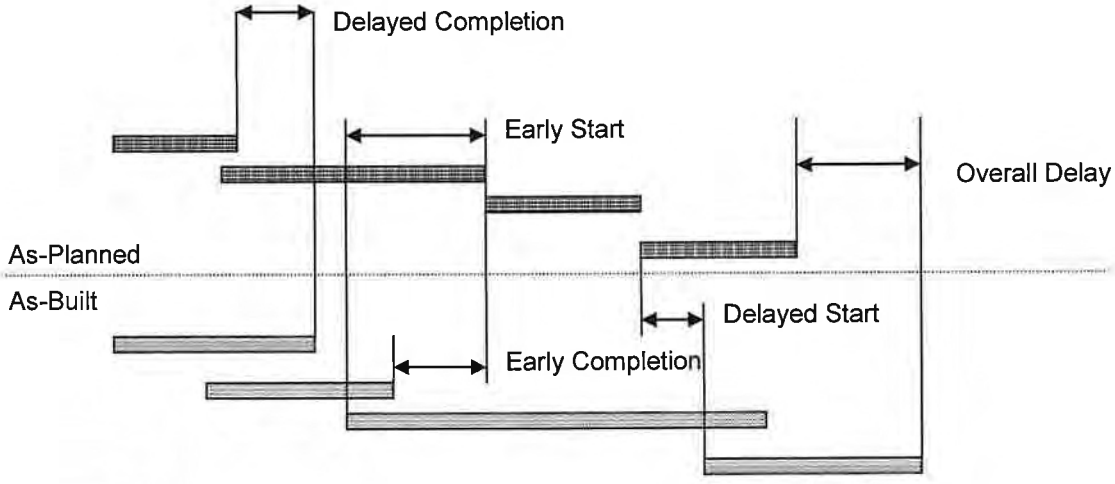


Figure 3 – Observational, Static, Gross Analysis Method Graphic Example

In its simplest application, the method does not involve any *explicit* use of CPM logic and can simply be an observational study of start and finish dates of various activities. It can be performed using a simple graphic comparison of the as-planned schedule to the as-built schedule. A more sophisticated

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

implementation compares the dates and the relative sequences of the activities and tabulates the differences in activity duration, and logic ties and seeks to determine the causes and explain the significance of each variance. In its most sophisticated application, it can identify on a daily basis the most delayed activities and candidates for the as-built critical path.

MIP 3.1 is classified as a static logic method because it primarily relies on the single set of CPM logic underlying the baseline or other planned schedule. The method is classified as gross as opposed to periodic because the analysis is performed on the entire project against a single baseline or other planned schedule rather than in periodic segments.

B. Common Names

1. As-planned vs. as-built
2. AP vs. AB
3. Planned vs. actual
4. As-planned vs. update

C. Recommended Source Validation Protocols

1. Implement SVP 2.1 (baseline validation) and,
2. Implement SVP 2.2 (as-built validation) or,
3. Implement SVP 2.3 (update validation) and,
4. Implement SVP 2.4 (delay ID & quantification)

D. Enhanced Source Validation Protocols

[Not used.]

E. Minimum Recommended Implementation Protocols

The application of this methodology involves the sequential comparison of individual activities' planned start and finish dates with actual start and finish dates. Through this comparison, a detailed summary of the delays and/or accelerations of activities can be identified. Generally, it is best to compare the LATE planned dates from a CPM schedule, rather than the early dates. While contractors usually intend to perform their work in accordance with the early dates, delay to an activity cannot be measured until the activity is actually delayed–is later than the planned late dates. The basic steps in the analysis are as follows:

1. Identify the baseline or other schedule that will form the as-planned schedule. Ideally, this schedule has been approved or accepted by both parties and reflects the full scope of the work, includes proper logic from the start of the project through completion, and reflects neither progress nor post-commencement mitigations of delay. This schedule is usually a CPM model, so that even without functioning CPM logic and modeling, the original planned logic should be used in analysis and interpretation. Alternatively, a simple comparison can be performed using graphic time-scaled diagrams. In this situation, no explicit schedule logic is evident, although the sequence and timing will imply certain logical connections.

2. The comparison progresses from the earliest activities' planned dates to later dates. Generally,

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

this comparison sequence should follow the logic in the original as-planned schedule. Thus, at least until the first significant delays, the focus will be on the as-planned critical and near-critical paths.

3. The analysis should advance through the comparison by identifying for each activity: (a) delayed starts, (b) extended durations, and (c) delayed finishes. Since the as-built analysis is performed using a 7-day calendar, it is important that all durations be in calendar days. In this manner, it is possible to identify where the most significant delays occurred, where there were mitigations of delay through implementation of out-of-sequence logic and possible accelerations through shorter than planned durations.

4. Arithmetic calculations performed at the start and completion of each as-built activity provide a detailed view of the relative delay of every as-built activity. The most delayed series of activities can be ascertained using this method and can often be used as a starting point for identifying the as-built critical path. Expert judgment is required to separate the as-built critical path (based on industry experience and contemporaneous evidence as discussed in Subsection 4.3.C) from the various set of most delayed activities at any particular time.

5. Simultaneous delays, whether they are pacing delays (see Subsection 4.2.B) or concurrent delays (see Subsection 4.2.A), should be identified and confirmed as being on the critical path.

6. As the analysis continues and advances through the as-planned schedule, it is likely that it will become less accurate since contemporaneous adjustments to the contractor's plan will supersede the original logic. For this reason, particular care must be exercised during the analysis of the later stages of the project.
7. Extended durations that extend the Late Finish Date for any activity should be examined for the cause. This will determine the cause of the delays along the critical path.

8. Similarly, any duration with shorter than planned durations may indicate reductions in work scope or acceleration by the contractor.

9. If time extensions have been granted, they should be considered both at the time they were granted and at the end of the analysis. Time extensions should be considered at the time granted when the reasons for delayed performance are identified through the comparison as well as identification of the as-built critical path. Time extensions will change the overall delay to the project and may therefore override apparent delays to specific activities.

If the baseline schedule has both early and late dates, the analysis should be performed using late dates unless a review of the late dates reveal that the logic associated with the late dates is significantly different than the logic of the early dates. In this situation, the analysis should be performed using early dates with the understanding that adjustments for available float may need to be considered. A schedule with logic that is incomplete or has logic associated with the late dates that appears significantly different from the logic associated with the early dates should be considered for correction in accordance with Subsection 2.1.B.

The minimum implementation of this method is applicable only to relatively simple cases and should not be used for long duration cases or where there are significant changes between the original planned work scope and the final as-built scope. For the purpose of this MIP, a 'simple case' is defined as one in which there is a single clearly defined chain of activities on the longest path that stayed as the longest path throughout the performance of the project.

F. Enhanced Implementation Protocols

1. Daily Delay Measure

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

The as-planned vs. as-built methodology can be used in more complicated cases if the data is available. Since the basic implementation protocol is applicable only for very simple cases, this more advanced method should be used if possible. However, even this more enhanced implementation is useful only for simple projects where the sequence of work did not vary significantly from the baseline schedule.

a. The as-built should be a fully progressed baseline schedule allowing for a one-to-one comparison of each schedule activity. This is essential as activity descriptions and ID numbers often change as the project advances.

b. On larger schedules and projects that are active for long periods of time, it is often desirable to use a database comparison between actual dates determined from the as-built analysis with the LATE planned dates. This comparison will allow the selection of the more significant activities for graphical comparison. Prepare a table comparing the planned duration or a schedule activity to the actual duration and determine the cause for each significant variance.

c. Prepare a table comparing the planned controlling predecessor logic of schedule activity to the actual controlling predecessor logic and determine the cause for each significant variance.

d. If an edited baseline schedule was used, the analysis should proceed using both the unaltered baseline as well as the modified baseline. A comparison between the two sets of results will assist the analysis in identifying the likely and realistic progress of the job.

e. Arithmetic calculations performed on a daily basis can provide significantly more accurate information if the as-built data is available at the appropriate level of detail. This method is called Daily Delay Measure (DDM). DDM is an enhanced variation for the identification of activities that are candidates for critical and near critical paths. DDM compares late start and finish dates with as-built start and finish dates.

- It can be done on a daily, weekly, or any other periodic basis. By depicting the number of days a schedule activity is ahead or behind the planned late dates, a determination of any point of the status of any schedule activity is possible.

- While the comparison can be made between the early start/finish dates and the actual dates, it is better to compare late start/finish dates with actual dates. By using late dates, any delay indicated by the comparison is a true delay rather than consumption of float. As a result of that exercise, any float associated with the duration of a schedule activity is excluded. Activities that have float (and accordingly are not on the as-planned critical path) will generally not appear to have been delayed during the early stages of analysis, since they will appear to be "ahead" of schedule because of their float. As the analysis progresses through a project's performance however, the activities that initially had float, if they were delayed for a duration in excess of the value of that float, can become critical, thus overtaking one or more of those activities originally on the project's as-planned critical path. While late dates are preferred in performing the analysis, in some CPM schedules, late dates do not represent a consistent or practical plan for execution of the work even if the early dates do. In these cases, it is better to use early dates.

- The DDM can also identify possible changes in the as-built critical path if the analysis is done on a frequent, possible daily basis, even within the actual duration of activities. In this case there are several alternative assumptions that can be made to identify progress within an activity duration: (1) if accurate progress data is available on a regular basis, this regular progress can be used (realistically this is rare in most construction projects);

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

(2) progress can be assumed to advance at an equal rate each period, for example, a 10-day activity would be assumed to advance 10 percent each day; or (3) a different progress rate, perhaps conforming to a more typical bell-curve distribution.

G. Identification of Critical and Near-Critical Paths

In this method, the emphasis should be on the as-built critical path as opposed to the baseline critical path. Since this methodology does not use a computational CPM, the methodology relies more extensively on expert evaluation.

- Identify and understand all related contractual language.
- From the fully populated baseline schedule, identify the calculated critical path of the baseline using the longest path and the lowest total float concept of the validated baseline.
- From the fully populated as-built schedule, identify the near-critical path using the procedure in Subsection 4.3.C. for identifying the as-built critical path.
- Confirm and cross check these results by tracing the delays through the as-planned critical path and near critical paths based on late as-planned dates.
- Identify the most delayed activities at every measuring point.
- Review the planned logic and evaluate any likely changes based on contemporaneous evidence.

H. Identification and Quantification of Concurrent Delays and Pacing

- Identify and understand all related contractual language.
- Determine whether literal or functional concurrency theory is to be used (see Subsection 4.2).
- If applicable, determine the near-critical threshold (see Subsection 4.3.).
- If applicable, determine the frequency, duration, and placement of the analysis intervals.
- Determine whether there are two simultaneous delays to activities on the critical path, or two simultaneous causes of delay to a single activity on the as-built critical path.
- Determine the day each delay commenced or period within which each commenced.
- Determine the contractually responsible party for each delay by the contractor or owner at issue.
- For each delay event, distinguish the cause from the effect of delay.
- Identify and explain all relative delayed starts and extended duration of activities that are critical or near-critical.
- For each suspected pacing delay event, identify the parent delay(s) and establish the order of precedence between the parent delay and the pacing delay.
- For each suspected pacing delay event, evaluate whether enough resources could have been

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

realistically employed to perform the paced activity within its original planned duration.

I. Determination and Quantification of Excusable and Compensable Delay

Identify and understand all contractual language related to delay apportionment and determine whether the contractual language would override any determination of excusability and compensability based on findings resulting from analyses performed under this RP.

Absent such overriding language, use the following procedure:

1. Excusable and Compensable Delay (ECD)

Each incremental delay along the as-built critical path should be independently quantified and the cause of the delay identified. The net Excusable & Compensable Delay (ECD) is the sum of the individual delays that: 1) were the responsibility of the owner, and 2) delayed the completion date of the project, and 3) were not concurrent with delays which were the responsibility of the contractor or *force majeure* events.

2. Excusable and Non-Compensable Delay (END)

Each incremental delay along the as-built critical path should be independently quantified and the cause of the delay identified. The net Excusable & Non-compensable Delay (END) is the sum of the individual owner-caused or relevant third-party caused delays that: 1) were *force majeure* events or were concurrent with contractor-responsible delays or *force majeure* events, and 2) delayed the completion date of the project, and 3) were not the responsibility of the contractor.

J. Identification and Quantification of Mitigation / Constructive Acceleration

Observational / static analysis methods can note differences in logic but cannot directly quantify net critical path impact. However, there may be evidence of reduced individual activity duration, which when coupled with detailed records of increased man-hours, would serve as adequate proof of acceleration. Note that the acceleration would be evident in both critical path and non-critical path activities.

K. Specific Implementation Procedures and Enhancements

[Not Used]

L. Summary of Considerations in Using the Minimum Protocol

- Suitable for analyzing short projects with minimal logic changes.
- Can be performed in a manner that is easy to understand and simple to present.
- Technically simple to perform compared to other MIP's.
- Can be performed with very rudimentary schedules and as-built data.
- As-built activities must be closely correlated with as-planned activities.
- As-built data used must be accurate and validated.
- Does not, by itself, identify the as-built critical path.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

M. Caveats in Using the Minimum Protocol / Conditions Requiring Enhanced Protocols

- Not suitable for project durations extending into multiple dozens of update periods.
- Not suitable for projects built in a manner significantly different than planned. The rate of error increases as the incidence of change increases.
- Not suitable for complicated projects with multiple critical paths.
- Does not consider the possibility of critical path shifts either within periods or across the project.
- Susceptible to unintentional or intentional manipulation by choice of as-built data that is incorporated into schedule.
- May fail to identify all critical delays or time extensions, and typically does not adequately consider concurrency and pacing issues.
- Does not consider that changes to original baseline schedule may have been the actual cause of delay instead of the identified delay issues
- Typically fails to consider chronological order of delays or reconcile periodic planned critical path shifts with the as-built critical path
- Not suited for clearly demonstrating acceleration

3.2. Observational / Static / Periodic (MIP 3.2)

A. Description

Like MIP 3.1, 3.2 is an observational technique that compares the baseline or other planned schedule to the as-built schedule or a schedule update that reflects progress. But, this method analyzes the project in multiple segments rather than in one whole continuum. Because this is essentially an enhancement of MIP 3.1, as a practical matter, the implementation of MIP 3.2 requires that prerequisites for MIP 3.1 be implemented first.

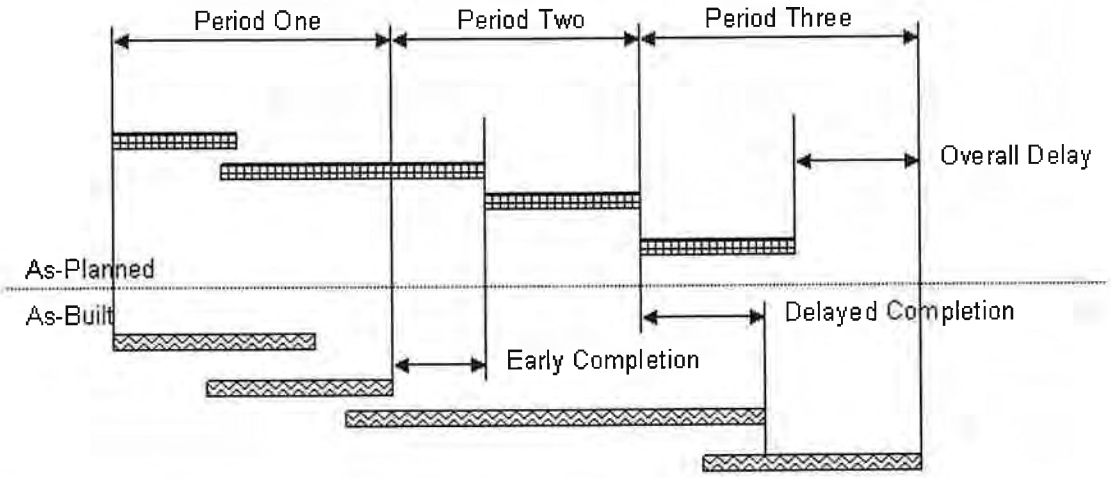


Figure 4 – Observational, Static, Periodic Method Graphic Example

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

In its range of implementation from simple to sophisticated, it shares the characteristics of MIP 3.1. In its simplest application, the method does not involve any *explicit* use of CPM logic and can be simply an observational study of start and finish dates of various activities. It can be performed using a simple graphic comparison of the as-planned schedule to the as-built schedule. A more sophisticated implementation compares the dates and the relative sequences of the activities, tabulates the differences in activity duration and logic ties, seeks to determine the causes, and explains the significance of each variance. In its most sophisticated application, it can identify on a daily basis the most delayed activities and candidates for the as-built critical path.

The advantage of performing this analysis in two or more time periods is that the identification of delays or accelerations can be more precisely identified to particular events. Generally the more time periods, the more closely related the analysis is to the events that actually occurred. The fact that the analysis is segmented into periods does not significantly increase or decrease the technical accuracy of this method when compared to MIP 3.1 because the comparison remains between the as-built and baseline or original as-planned schedule. However, the segmentation is useful in enhancing the organization of the analysis process and enables prioritization. It also may add to the effectiveness of the presentation of the analysis.

MIP 3.2 is classified as a static logic method because it primarily relies on the single set of CPM logic underlying the baseline schedule or other planned schedule. Note that a similar method as described in MIP 3.3 is classified as a dynamic logic method because that method uses a series of updates schedule with logic that may be different from the baseline and from each other. MIP 3.2 is distinguished from MIP 3.3 in that while the analysis is performed in segments, they are segments of the as-planned and as-built without reference to schedule updates that are contemporaneous to those segments.
The method is classified as periodic because the analysis is performed in periodic segments rather than in one continuous project period.

B. Common Names

1. As-planned vs. as-built
2. AP vs. AB
3. Planned vs. actual
4. As-planned vs. update
5. Window analysis
6. Windows analysis

C. Recommended Source Validation Protocols

1. Implement SVP 2.1 (baseline validation) and,
2. Implement SVP 2.2 (as-built validation) or,
3. Implement SVP 2.3 (update validation) and,
4. Implement SVP 2.4 (delay ID & quantification)

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

D. Enhanced Source Validation Protocols

[Not used.]

E. Minimum Recommended Implementation Protocols

The procedures below are essentially those of MIP 3.1, but are applied only for a specific time period which is less than the overall duration of the project. Selection of the time periods should follow Subsection 3.2.A. In this method however, the selection is primarily made for clarity of conclusions, not for greater accuracy of analysis.

The results of this analysis are summed at the end of each time analysis period. The application of this methodology involves the sequential comparison of individual activities' planned start and finish dates with actual start and finish dates. Through this comparison, a detailed summary of the delays and/or accelerations of activities can be identified. Generally, it is best to compare the LATE planned dates from a CPM schedule rather than the early dates. While contractors usually intend to perform their work in accordance with the early dates, delay to an activity cannot be measured until the activity is actually delayed–is later than the planned late dates. The basic steps in the analysis are as follows:

1. Identify the baseline or other schedule that will form the as-planned schedule. Ideally, this schedule has been approved or accepted by both parties and reflects the full scope of the work, includes proper logic from the start of the project through completion, and reflects neither progress nor post-commencement mitigations of delay. This schedule is usually a CPM model, so that even without functioning CPM logic and modeling, the original planned logic should be used in analysis and interpretation. Alternatively, a simple comparison can be performed using graphic time-scaled diagrams. In this situation, no explicit schedule logic is evident, although the sequence and timing will imply certain logical connections.

2. The comparison progresses from the earliest activity planned dates to later dates. Generally, this comparison sequence should follow the logic in the original as-planned schedule. Thus, at least until the first significant delays, the focus will be on the as-planned critical and near-critical paths.

3. The analysis should advance through the comparison by identifying for each activity: (a) delayed starts, (b) extended durations, and (c) delayed finishes. Since the as-built analysis is performed using a 7-day calendar, it is important that all durations be in calendar days. In this manner, it is possible to identify where the most significant delays occurred, in which there were mitigations of delay through implementation of out-of-sequence logic, and possible accelerations through shorter than planned durations.

4. Arithmetic calculations performed at the start and completion of each as-built activity provide a detailed view of the relative delay of every as-built activity. The most delayed series of activities can be ascertained using this method and can often be used as a starting point for identifying the as-built critical path. Expert judgment is required to identify the as-built critical path, based on industry experience and contemporaneous evidence as discussed in Subsection 4.3.C, from the various set of the most delayed activities at any particular time.

5. Simultaneous delays, whether they are pacing delays (see Subsection 4.2.B), or concurrent delays (see Subsection 4.2.A), should be identified and confirmed as being on the critical path.

6. As the analysis continues and advances through the as-planned schedule, it is likely that it will become less accurate since contemporaneous adjustments to the contractor's plan will supersede the original logic. For this reason, particular care must be exercised during the analysis of the later stages of the project.

Copyright 2011 AACE® International, Inc.

7. Extended durations that extend the Late Finish Date for any activity should be examined for the cause. This will determine the cause of the delays along the critical path.

8. Similarly, any activities with shorter than planned durations may indicate reductions in work scope or acceleration by the contractor.

9. If time extensions have been granted, they should be considered both at the time they were granted and at the end of the analysis. Time extensions should be considered when evaluating the reasons for delayed performance identified through the comparison as well as identification of the as-built critical path. Time extensions will change the overall delay to the project and may therefore override apparent delays to specific activities.

10. Prepare a table that summarizes the variances quantified for each analysis period and reconcile the total to the result that would be obtained by a competent implementation of MIP3.1. This is intended to eliminate the possibility of skewing the result of the analysis through the use of variable periods.

If the baseline schedule has both early and late dates, the analysis should be performed using late dates unless a review of the late dates reveal that the logic associated with the late dates is significantly different than the logic of the early dates. In this situation, the analysis should be performed using early dates with the understanding that adjustments for available float may need to be considered. A schedule with logic that is incomplete or significantly different from the logic associated with the early dates should be considered for correction is accordance with Subsection 2.1.B.

The minimum implementation of this method is applicable only to relatively simple cases and should not be used for long duration cases or where there are significant changes between the original planned work scope and the final as-built scope. For the purpose of this MIP, a 'simple case' is defined as one in which there is a single clearly defined chain of activities on the longest path that stayed as the longest path throughout the performance of the project.

F. Enhanced Implementation Protocols

1. Daily Delay Measure

The as-planned vs. as-built methodology can be used in more complicated cases if the data is available. Since the basic implementation protocol is applicable only for very simple cases, this more advanced method should be used if possible. However, even this more enhanced implementation is useful only for simple projects where the sequence of work did not vary significantly from the baseline schedule.

a. The as-built should be a fully progressed baseline schedule allowing for a one-to-one comparison of each schedule activity. This is essential as activity descriptions and ID numbers often change as the project advances.

b. On larger schedules and projects that are active for long periods of time, it is often desirable to use a database comparison between actual dates determined from the as-built analysis with the LATE planned dates. This comparison will allow the selection of the more significant activities for graphical comparison. Prepare a table comparing the planned duration or a schedule activity to the actual duration and determine the cause for each significant variance.

c. Prepare a table comparing the planned controlling predecessor logic of schedule activity to the actual controlling predecessor logic and determine the cause for each significant variance.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

d. If an edited baseline schedule was used, the analysis should proceed using both the unaltered baseline as well as the modified baseline. A comparison between the two sets of results will assist the analysis in identifying the likely and realistic progress of the job.

e. Arithmetic calculations performed on a daily basis can provide significantly more accurate information if the as-built data is available at the appropriate level of detail. This method is called Daily Delay Measure (DDM). DDM is an enhanced variation for the identification of activities that are candidates for critical and near critical paths. DDM compares late start and finish dates with as-built start and finish dates.

- It can be done on a daily, weekly, or any other periodic basis. By depicting the number of days a schedule activity is ahead or behind the planned late dates, a determination at any point of the status of any schedule activity is possible.

- While the comparison can be made between the early start/finish dates and the actual dates, it is better to compare late start/finish dates with actual dates. By using late dates, any delay indicated by the comparison is a true delay rather than consumption of float. As a result of that exercise, any float associated with the duration of a schedule activity is excluded. Activities that have float (and accordingly are not on the as-planned critical path) will generally not appear to have been delayed during the early stages of analysis, since they will appear to be "ahead" of schedule because of their float. As the analysis progresses through a project's performance however, the activities that initially had float, if they were delayed for duration in excess of the value of that float, can become critical, thus overtaking one or more of those activities originally on the project's as-planned critical path. While late dates are preferred in performing the analysis, in some CPM schedules, late dates do not represent a consistent or practical plan for execution of the work even if the early dates do. In these cases, it is better to use early dates, taking into account the float values.

- The DDM can also identify possible changes in the as-built critical path if the analysis is done on a frequent, possibly daily basis, even within the actual duration of activities. In this case, there are several alternative assumptions that can be made to identify progress within an activity duration: (1) if accurate progress data is available on a regular basis, this regular progress can be used (realistically this is very rare in most construction projects); (2) progress can be assumed to advance at an equal rate each period, for example a 10-day activity would be assumed to advance 10 percent each day; or (3) a different progress rate, perhaps conforming to a more typical bell-curve distribution.

G. Identification of Critical and Near-Critical Paths

In this method, the emphasis should be on the as-built critical path as opposed to the as-planned critical path. Since this methodology does not use a computational CPM, the methodology relies more extensively on expert evaluation.

- Identify and understand all related contractual language.

- From the fully populated baseline schedule, identify the calculated critical path of the as-planned using the longest path and the lowest total float concept of the validated as-planned schedule.

- From the fully populated as-built schedule, identify the near-critical path using the procedure in Subsection 4.3.C. for identifying the as-built critical path.

- Confirm and cross check these results by tracing the delays through the as-planned critical path

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

and near critical paths based on late as-planned dates.

- Identify the most delayed activities at every measuring point.
- Review the planned logic and evaluate any likely changes based on contemporaneous evidence.

H. Identification and Quantification of Concurrent Delays and Pacing

- Identify and understand all related contractual language.
- Determine whether literal or functional concurrency theory is to be used.
- If applicable, determine the near-critical threshold (see Subsection 4.3.).
- If applicable, determine the frequency, duration, and placement of the analysis intervals.
- Determine whether there are two simultaneous delays to activities on the critical path or two simultaneous causes of delay to a single activity on the as-built critical path.
- Determine the day each delay commenced or period within which each commenced.
- Determine the contractually responsible party for each delay by the contractor or owner at issue.
- For each delay event, distinguish the cause from the effect of delay.
- Identify and explain all relative delayed starts and extended duration of activities that are critical or near-critical.
- For each suspected pacing delay event, identify the parent delay(s) and establish the order of precedence between the parent delay and the pacing delay.
- For each suspected pacing delay event, evaluate whether enough resources could have been realistically employed to perform the paced activity within its original planned duration.

I. Determination and Quantification of Excusable and Compensable Delay

Identify and understand all contractual language related to delay apportionment and determine whether the contractual language would override any determination of excusability and compensability based on findings resulting from analyses performed under this RP.

Absent such overriding language, use the following procedure.

1. Excusable and Compensable Delay (ECD)

Each incremental delay along the as-built critical path should be independently quantified and the cause of the delay identified. The net Excusable & Compensable Delay (ECD) is the sum of the individual delays that: 1) were the responsibility of the owner, and 2) delayed the completion date of the project, and 3) were not concurrent with delays which were the responsibility of the contractor or *force majeure* events.

2. Excusable and Non-Compensable Delay (END)

Each incremental delay along the as-built critical path should be independently quantified and the cause of the delay identified. The net Excusable & Non-compensable Delay (END) is the sum of

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

the individual owner-caused delays that: 1) were *force majeure* events or were concurrent with contractor-responsible delays or *force majeure* events, and 2) delayed the completion date of the project, and 3) were not the responsibility of the contractor.

J. Identification and Quantification of Mitigation / Constructive Acceleration

Observational / Static analysis methods can note differences in logic but cannot directly quantify net critical path impact. However, there may be evidence of reduced individual activity duration, which when coupled with detailed records of increased man-hours, would serve as adequate proof of acceleration. Note that the acceleration would be evident in both critical path and non-critical path activities.

K. Specific Implementation Procedures and Enhancements

1. Fixed Periods

The analysis periods are of virtually identical duration and may coincide with regular schedule update periods.

2. Variable Periods

The analysis periods are of varying durations and are characterized by their different natures such as the type of work being performed, the types of delaying influences, significant events, changes to the critical path, revised baseline schedules, and/or the operative contractual schedule under which the work was being performed.

Fixed periods have the advantage of providing regular measurements and thus make it easier to track progress through the project. However, variable periods identified by major events on the project are often more useful since they will relate status of the delay to a specific known event.

L. Summary of Considerations in Using the Minimum Protocol

- Allows for logical segmenting of relatively longer project durations than MIP 3.1
- Suitable for analyzing short projects with minimal logic changes.
- Can be performed in a manner that is easy to understand and simple to present.
- Technically simple to perform compared to other MIP's, other than MIP 3.1. However it is still relatively time consuming when implemented correctly.
- Can be performed with very rudimentary schedules and as-built data.
- As-built activities must be closely correlated with as-planned activities.
- As-built data used must be accurate and validated.
- Does not, by itself, identify the as-built critical path.

M. Caveats in Using the Minimum Protocol / Conditions Requiring Enhanced Protocols

- Provides illusion of greater detail and accuracy compared to MIP 3.1 where none exists since it still does not consider the possibility of critical path shifts either within periods or across the project.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

- Does not use the contemporaneous as-planned update predictions of critical paths
- The choice of variable periods may be abused to skew the results of the analysis.
- Not suitable for project durations extending into multiple dozens of update periods.
- Not suitable for projects built in a manner significantly different than planned. The rate of error increases as the incidence of change increases.
- Not suitable for complicated projects with multiple critical paths.
- Susceptible to unintentional or intentional manipulation by choice of as-built data that is incorporated into schedule.
- May fail to identify all critical delays or time extensions, and typically does not adequately consider concurrency and pacing issues.
- Does not consider that changes to original baseline schedule may have been the actual cause of delay instead of the identified delay issues
- Typically fails to consider chronological order of delays
- Typically fails to reconcile periodic planned critical path shifts with the as-built critical path
- Not suited for clearly demonstrating acceleration due to reliance on original as-planned logic only

3.3. Observational / Dynamic / Contemporaneous As-Is (MIP 3.3)

A. Description

MIP 3.3 is a retrospective technique that uses the project schedule updates to quantify the loss or gain of time along a logic path that was or became critical and identify the activities responsible for the critical delay or gain. Although this method is a retrospective technique, it relies on the forward-looking calculations made at the time the updates were prepared. That is, it primarily uses the information to the right of the updates' data dates.

MIP 3.3 is an observational technique since it does not involve the insertion or deletion of delays but instead is based on observing the behavior of the network from update to update and measuring schedule variances based on essentially unaltered, existing schedule logic.

Because the method uses schedule updates whose logic may have changed from the previous updates as well as from the baseline, it is considered a dynamic logic method.

It is labeled contemporaneous because the updates it relies on were prepared contemporaneously with the project execution as opposed to reconstructed after-the-fact as in MIP 3.5.

Finally, the 'as-is' label distinguishes this method from MIP 3.4 by the fact that the updates are evaluated almost completely untouched or 'as is'.

While rare, it is possible that no non-progress revisions were made in the contemporaneous updates. In this situation, this method should yield a result similar to a static logic method (MIP 3.1 and 3.2) since the initial baseline logic is in place for the entire project

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

B. Common Names

1. Contemporaneous period analysis
2. Contemporaneous project analysis
3. Observational CPA
4. Update analysis
5. Month-to-month
6. Window analysis
7. Windows analysis

C. Recommended Source Validation Protocols

1. Implement SVP 2.1 (baseline validation) and,
2. Implement SVP 2.3 (update validation)

D. Enhanced Source Validation Protocols

1. Implement SVP 2.2 (as-built validation)
2. Implement SVP 2.4 (identification of delay events)

E. Minimum Recommended Implementation Protocols

1. Recognize all contract time extensions granted.
2. Identify the critical path activity that will be used to track the loss or gain of time for the overall network.
3. Determine whether evaluations will be done on all periods or grouped periods as described in Subsection 3.3.K.
4. Every update may not be used. However, every update should be considered. Accuracy is reduced if updates are not evaluated for multiple-month periods when schedule revisions or changes in sequence occurred to the project plan.
5. Separately identify activities that will be used to track intra-network time losses and gains, such as interim milestones.
6. Compare the update at the start of the analysis period to the update at the end of the analysis period.
7. Use the longest path and the least float criteria to identify the controlling chain of activities.
8. Identify changes (gained or lost time) in overall Project completion date based on the critical path activity identified in 3.3.E.2, and if necessary, in interim milestone completion dates.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

9. Identify start and finish variances of critical and near-critical activities in the analysis period.

10. Indentify all changes and/or revisions to logic, durations, and/or progress that were made during analysis period.

11. Identify responsibility for delays and gains during analysis period.

12. Continue with implementation until all periods are complete.

13. Sum the net gains and losses for each period to arrive at an overall impact to the project. The sum of the net impacts must be equal to difference between the first schedule update and last schedule update used in the evaluation.

F. Enhanced Implementation Protocols

1. Use every contemporaneous update

2. If minor logic revisions are made or schedule anomalies are corrected prepare alternate evaluations using updates without the corrections and compare the results.

3. Daily Progress Method

The application of this methodology involves identifying the delay or savings in time attributable to the project's progress between the updates by chronologically tracking progress along the critical path on a unit basis (typically the smallest planning unit used in executing the project, for example, daily), by comparing the planned timing of the activities in the first update to their actual progress as depicted in the second, and identifying the resulting effect of the project's progress. The following steps outline the application of this methodology:

a. Identify the consecutive schedules that will be used to measure the delay or savings in time. For example, update No. 1 and update No. 2.

b. Using a copy of the first update, insert the progress made on day 1 of the update period, as depicted in the second update, and re-status the progressed update with a data date of the next calendar day.

c. Compare the critical paths of the first update and the progressed update to identify the activity(ies) whose progress or lack of progress affected the project's milestones.

d. Separately measure the effect of the responsible critical activity(ies) to the project milestones. In doing so, the analyst should separately identify critical activity(ies) that cause delay and other critical activities that may show out-of-sequence progress resulting in a savings in time to the project milestones.

e. Repeat this procedure of inserting the project's progress on a daily basis for every calendar day between the updates, while identifying and measuring the effect of progress on the critical paths of consecutive calendar days until reaching the data date of the second update.

f. This step concludes with the creation of a totally-progressed version of the first update, with the second update's data date, that contains all of the progress contained in the second update and that depicts the status of the project before the development of the second update.

The distribution of progress to activities that made progress between the updates can determine

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

whether an activity becomes critical and potentially delays the project. For example, assume an activity started before the update period, made five workdays of progress during the update period, and was not completed during the update period. If there are no contemporaneous documents to identify when those five workdays of progress occurred, then the analyst has to decide when and how to depict the work occurring between the updates. The analyst could assume that the progress occurred within the first available five workdays of the period, or the last available workdays of the period, or in some other manner between the updates. Regardless of which method is chosen to distribute progress between the updates, the analyst should consistently apply the chosen method throughout the entire analysis and be able to explain why the method was chosen.

Upon completion of these steps, the analyst will be able to specifically identify the activities that were responsible for the delay or savings in time to the project's milestones during the update period and assign the resultant delay or savings to those same activities caused by the progress made between the updates. Additionally, by tracking the progress along the critical path between the updates the analyst will be able to identify shifts in the critical path.

This process is performed between all consecutive updates throughout the entire project duration.

G. Identification of Critical and Near-Critical Paths

- Identify and understand all related contractual language.
- Identify the negative float theory being used by the opposing analyst.
- For each analysis interval, identify the calculated critical path using the longest path and the lowest total float concept of the validated update(s) corresponding to the analysis interval.
- The near-critical activity-set in each analysis interval is the one that yields the most number of activities using one of the following methods:
  - lowest float value in the update PLUS the average duration of all discrete delay events contained in whole or in part inside the analysis interval, or
  - lowest float value in the update PLUS duration of the analysis interval.

H. Identification and Quantification of Concurrent Delays and Pacing

- Determine whether compensable delay by contractor or owner is at issue.
- Identify and understand all related contractual language.
- For each delay event, distinguish the cause from the effect of delay.
- Determine whether literal or functional concurrency theory is to be used.
- If applicable, determine the near-critical threshold (see Subsection 4.3.).
- If applicable, determine the frequency, duration, and placement of the analysis intervals.
- For each analysis interval, identify the critical path(s) and the near-critical path(s) and explain all relative delayed starts and extended duration of activities that occurred in the previous analysis interval on the same chains of activities.
- For each suspected pacing delay event, identify the parent delay(s) and establish the order of

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

precedence between the parent delay and the pacing delay.

- For each suspected pacing delay event, evaluate whether enough resources could have been realistically employed to perform the paced activity within its original planned duration.

I. Determination and Quantification of Excusable and Compensable Delay

Identify and understand all contractual language related to delay apportionment and determine whether the contractual language would override any determination of excusability and compensability based on findings resulting from analyses performed under this RP.

Absent contract language or other agreements, use the following procedure to determine the net total delay apportionment:

1. Non-Excusable and Non-Compensable Delay (NND)

a. For each period analyzed, determine the longest-path delay attributable to events that are contractor-caused that occurred between the current data date and the last data date.

b. For each period analyzed, determine the longest-path gains attributable to contractor-initiated schedule mitigation that was actually implemented, and then add the resulting values together.

c. Make adjustment for concurrent delays due to owner-caused and *force majeure*-caused events using the selected concurrency analysis method.

2. Excusable and Compensable Delay (ECD)

a. For each period analyzed, determine the longest-path delay attributable to events that are owner-caused that occurred between the current data date and the last data date.
b. For each period analyzed, determine the longest-path gains attributable to owner-initiated schedule mitigation that was actually implemented, and then add the resulting values together.

c. Make adjustment for concurrent delays due to contractor-caused and *force majeure*-caused events using the selected concurrency analysis method.

3. Excusable and Non-Compensable Delay (END)

a. Total network delay less total NND less total ECD is the total END.

J. Identification and Quantification of Mitigation / Constructive Acceleration

The observational / dynamic analysis methods are especially well-suited for identifying and quantifying acceleration and delay mitigation through the use of logic changes. These methods allow the analyst to not only quantify the acceleration, but also determine whether the acceleration was achieved by current, actually implemented measures, or by logic changes representing promise of future acceleration.

With MIP 3.3, acceleration or delay mitigation is identified by comparing the completion date of the longest path of the previous period with that of the current period. A current date that is earlier than the previous date suggests acceleration. However, note that the value is a net number potentially representing both slippage and gain, where the gain was greater than the slippage. Thus a detailed examination of the longest path and the near-longest path surrounding the data date is necessary

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

along with the examination of the logic changes between the last and the current periods along those paths is necessary for a competent identification and quantification of acceleration and delay mitigation.

In order to determine whether the promised future acceleration was actually implemented, it will be necessary to compare the proposed accelerated fragnet with an as-built of the same activities. The process can become complicated if the actual execution of the accelerated scenario was hampered by delays that occurred subsequent to the formulation of the acceleration scenario.

K. Specific Implementation Procedures and Enhancements

1. All Periods

The analysis is performed for each and all contemporaneous updates. Whether the periods are of fixed or variable width is dictated by the frequency of the contemporaneous updates, not by the forensic analyst.

The all-periods implementation yields more information than the grouped-periods implementation and is considered more complete in that it identifies and measures the critical project delay for the entire project duration.. Also the grouped-periods implementation allows the analyst to ignore periods that may be unfavorable to the party for which the analysis is being performed by not explicitly showing the variances between the updates within each grouping.

2. Grouped Periods

The analysis is performed for grouped periods where each group may contain updates between two or more updates with the same planned critical path being compared for variance calculation. So for example, a group may be the period starting with the January update and ending with the May update, and contain three other updates (February, March, April). The three updates are not ignored but may not be directly utilized in quantifying the variance. The analyst should ensure that changes in the logic sequence within the grouped periods are taken into consideration in the grouped period analysis in order to avoid missing significant shifts in the critical path that could affect causal activities for delay or gain.

3. Blocked Periods

The individual periods, whether prepared in the all-periods mode or the grouped-periods mode, can be gathered into blocks for summarization. Blocking is mentioned here to distinguish the practice from grouping. Blocking is the summing of the variances obtained in several contiguous periods of an all-periods implementation, while grouping skips over the individual variance calculation for periods inside the group.

4. Changing the Contemporaneous Project Schedule During the Analysis

MIP 3.3 is an observational technique that does not involve the insertion or deletion of delays, but instead is based on observing the behavior of the network from update to update and measuring schedule variances based on unaltered, existing logic models. The analyst's preference is to identify and measure the critical project delays using the contemporaneous project schedules as they existed during the project.

However minor corrections to the contemporaneous schedules do not automatically result in a shift in classification of the analytical technique from MIP 3.3 to MIP 3.5 (Observational / Dynamic / Modified or Recreated). Certain limited corrections do not rise to the level of "recreations" or "modifications" and, thus, a MIP 3.3 analysis conducted using schedules with

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

limited corrections is still properly characterized as a MIP 3.3 analysis and not a MIP 3.5 analysis. Refer to Subsection 2.3.D.3 for specific changes that can be implemented under this restriction.

The preference of every analyst should be to use the contemporaneous schedules and updates as they were prepared, reviewed, approved or accepted, and used on the project. This belief is grounded in the fact that the parties used the imperfect schedules to make decisions and manage the project work. Thus, these schedules, even though not perfect, are the best representation of the parties' objectives and understanding of the project contemporaneously and are an indicator of each party's performance. However, absent contract language mandating the use of the contemporaneous schedules to quantify delay, MIP 3.3 is not so rigid that corrections to the contemporaneous schedules cannot be considered by the analyst.

All corrections should be described in the analyst's report so that the other parties and the fact finders understand the changes that the analyst made to the contemporaneous schedule.

The issue of correcting the schedule is one of balance and reasonableness and, for this reason corrections should not be made across the board or automatically. Whenever the analyst believes that changes or modifications to the contemporaneous project schedule are necessary during the analysis, it must be kept in mind that MIP 3.3, is a "self-correcting" analysis.

Finally, the analyst must also be consistent and maintain independence and objectivity. The analyst cannot limit corrections to those that have the affect of improving the analyst's client's position.

One option is to run the analysis two ways. The first run of the analysis would use the schedules as they existed contemporaneously, or unaltered. The second run of the analysis would use the schedule with the minor correction. This approach allows the finder of fact to see the difference, understand the proposed minor modification, and make a reasoned decision without having to guess what the difference would have been between the performing the analysis with the unaltered schedule and with the corrected schedule.

L. Summary of Considerations in Using the Minimum Protocol

- Cannot be implemented if contemporaneous schedule updates do not exist.
- Uses as the primary tool a set of contemporaneous schedules that are already familiar to the parties at dispute.
- Can enhance credibility if it can be shown that the project participants used the contemporaneous schedules in managing and constructing the project.
- Accounts for the dynamics of evolving events and conditions because it considers the real-time perspective of project conditions, the state of mind, and knowledge of the project participants during each update period.
- Considers the dynamic nature of the critical path because it identifies shifts in the critical path between the updates.
- Delays or savings in time can be assigned to specific activities.
- Data preparation process may be quicker than other methods that require a separate as-built schedule.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

- This method can be used to identify and specifically quantify acceleration.

M. Caveats in Using the Minimum Protocol / Conditions Requiring Enhanced Protocols

- The analyst may determine that the critical path responsible for project delays and gains, in hindsight, may be different from that indicated as the planned critical path shown in the contemporaneous schedule updates. Contemporaneous documentation should be provided with the analysis to support any instance of this determination.
- To yield accurate results, the contemporaneous schedule updates used in the analysis must be validated as accurate both in reported progress and in the network's representation of contemporaneous means and methods.
- Except with very simple network models, it may be difficult to distinguish schedule variances caused by non-progress revisions from schedule variances caused purely by insufficient progress. Consider MIP 3.4 to overcome this challenge.
- If date constraints were liberally used in the update schedules, analysis may be very difficult.

3.4. Observational / Dynamic / Contemporaneous Split (MIP 3.4)

A. Description

MIP 3.4 is identical to MIP 3.3 in all respects except that for each update an intermediate file is created between the current update and the previous update consisting of progress information without any non-progress revisions. Generally, the process involves updating the previous update with progress data from the current update and recalculating the previous update using the current data date. This is the intermediate schedule or the half-step schedule. The process allows the analyst to bifurcate the update-to-update schedule variances based on pure progress by evaluating the difference between the previous update and the half-step, and then the variance based on non-progress revisions by observing the difference between the half-step and the current update.

As with MIP 3.3, 3.4 is a retrospective technique that uses the project schedule updates to quantify the loss or gain of time along a logic path that was or became critical and identify the activities responsible for the critical delay or gain. Although this method is a retrospective technique, it relies on the forward-looking calculations made at the time the updates were prepared. That is, it primarily uses the information to the right of the updates' data date.

MIP 3.4 is an observational technique since it does not involve the insertion or deletion of delays, but instead is based on observing the behavior of the network from update to update and measuring schedule variances based on essentially unaltered, existing schedule logic.

Because the method uses schedule updates whose logic may have changed from the previous updates as well as from the baseline, it is considered a dynamic logic method.

It is labeled contemporaneous because the updates it relies on were prepared contemporaneously with the project execution as opposed to reconstructed after the fact as in MIP 3.5.

The 'split' label distinguishes this method from MIP 3.3 by the fact that the updates are evaluated after the bifurcation process that splits the pure progress update from the non-progress revisions.

While rare, it is possible that no non-progress revisions were made in the contemporaneous updates.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

If that is the case, then MIP 3.3 is a better solution for the analysis.

B. Common Names

1. Contemporaneous period analysis
2. Contemporaneous project analysis
3. Contemporaneous schedule analysis
4. Bifurcated CPA
5. Half-stepped update analysis
6. Two-stepped update analysis
7. Month-to-month
8. Window analysis
9. Windows analysis

C. Recommended Source Validation Protocols

1. Implement SVP 2.1 (baseline validation)
2. Implement SVP 2.3 (update validation)
3. Implement SVP 2.2 D.2 (as-built validation)

D. Enhanced Source Validation Protocols

1. Implement SVP 2.2 (as-built validation)
2. Implement SVP 2.4 (identification of delay events)

E. Minimum Recommended Implementation Protocols

1. Recognize all contract time extensions granted.
2. Identify the critical path activity that will be used to track the loss or gain of time for the overall network.
3. Determine whether evaluations will be done on all periods or grouped periods as described in Subsection 3.4.K.
4. Every update may not be used. However, every update should be considered. Accuracy is reduced if updates are not evaluated for multiple-month periods when schedule revisions or changes in sequence occurred to the project plan..
5. Separately identify activities that will be used to track intra-network time losses and gains, such as on interim milestones.
6. Create a copy of the as-planned schedule and each of the update schedules for use in analysis

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

as the bifurcated updates.

7. Import progress from the next update into each of the newly created bifurcated updates for use in identifying progress only gains and losses.

8. Compare the update at the start of the analysis period to the progress-only bifurcated update, and then compare that progress-only bifurcated update to the update at the end of the analysis period.

9. Use both the longest path and the least float criteria to identify the controlling chain of activities.

10. Identify changes (gained or lost time) in overall Project completion date based on the critical path activity identified in 3.4.E.2, and if necessary, in interim milestone completion dates.

11. Identify start and finish variances of critical and near-critical activities in the analysis period.

12. Indentify all changes and/or revisions to logic, durations, and/or progress that were made during analysis period.

13. Sum the net gains and losses for the update at the start of the update period and the bifurcated update for that same period. The net gains and losses must equal the net gains and losses between the start of the update period and the start of the next update period.

14. Identify responsibility for delays and gains during analysis period.

15. Continue with implementation until all periods are complete

16. Sum the net gains and losses for each period to arrive at an overall impact to the project. The sum of the net impacts must be equal to difference between the first schedule update and last schedule update used in the evaluation.

F. Enhanced Implementation Protocols

1. Use every contemporaneous update

2. If minor logic revisions are made or schedule anomalies are corrected prepare alternate evaluations using updates without the corrections and compare the results.

3. Daily Progress Method (see Subsection 3.3.F.1)

G. Identification of Critical and Near-Critical Paths

- Identify and understand all related contractual language.

- Identify the negative float theory being used by the opposing analyst.

- For each analysis interval, identify the calculated critical path using the longest path and the lowest total float concept of the validated update(s) corresponding to the analysis interval.

- The near-critical activity-set in each analysis interval is the one that yields the most number of activities using one of the following methods:

  - lowest float value in the update PLUS the average duration of all discrete delay events contained in whole or in part inside the analysis interval, or

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

- lowest float value in the update PLUS duration of the analysis interval.

H. Identification and Quantification of Concurrent Delays and Pacing

- Determine whether compensable delay by contractor or owner is at issue.
- Identify and understand all related contractual language.
- For each delay event, distinguish the cause from the effect of delay.
- Determine whether literal or functional concurrency theory is to be used.
- If applicable, determine the near-critical threshold (see Subsection 4.3.)
- If applicable, determine the frequency, duration, and placement of the analysis intervals.
- For each analysis interval, identify the critical path(s) and the near-critical path(s) and explain all relative delayed starts and extended duration of activities that occurred in the previous analysis interval on the same chains of activities.
- For each suspected pacing delay event, identify the parent delay(s) and establish the order of precedence between the parent delay and the pacing delay.
- For each suspected pacing delay event, evaluate whether enough resources could have been realistically employed to perform the paced activity within its original planned duration.

I. Determination and Quantification of Excusable and Compensable Delay

(See Subsection 3.3.I)

J. Identification and Quantification of Mitigation / Constructive Acceleration

The observational / dynamic analysis methods are especially well-suited for identifying and quantifying acceleration and delay mitigation through the use of logic changes. These methods allow the analyst to not only quantify the acceleration, but also determine whether the acceleration was achieved by current, actually implemented measures, or by logic changes representing the promise of future acceleration.

The difference between this method and MIP 3.3 is that the bifurcation of each update into half-steps in MIP 3.4 makes it much easier to identify acceleration and delay mitigation that results from logic changes.

As with MIP 3.3, in 3.4, acceleration or delay mitigation is identified by comparing the completion date of the longest path of the previous period with that of the current period. A current date that is earlier than the previous date suggests acceleration. However, note that the value is a net number potentially representing both slippage and gain, where the gain was greater than the slippage. Thus, a detailed examination of the longest path, the near-longest path surrounding the data date, and the examination of the logic changes between the last and the current periods along those paths are necessary for a competent identification and quantification of acceleration and delay mitigation.

In order to determine whether the promised future acceleration was actually implemented, it will be necessary to compare the proposed accelerated fragnet with an as-built of the same activities. The process can become complicated if the actual execution of the accelerated scenario was hampered by delays that occurred subsequent to the formulation of the acceleration scenario.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

K. Specific Implementation Procedures and Enhancements

1. All Periods

The analysis is performed for each and all contemporaneous updates. Whether the periods are of fixed or variable width is dictated by the frequency of the contemporaneous updates, not by the forensic analyst.

The all-periods implementation yields more information than the grouped-periods implementation and is considered more complete in that it identifies and measures the critical project delay for the entire project duration.. Also the grouped-periods implementation allows the analyst to ignore periods that may be unfavorable to the party for which the analysis is being performed by not explicitly showing the variances between the updates within each grouping.

2. Grouped Periods

The analysis is performed for grouped periods where each group may contain updates between the two updates being compared for variance calculation. So for example, a group may be the period starting with the January update and ending with the May update, and contain three other updates (February, March, April). The three updates are analyzed just as they would be analyzed if they were not grouped and the results would be the same, whether grouped or not. The analyst should ensure that changes in the logic sequence within the grouped periods are taken into consideration in the grouped period analysis in order to avoid missing significant shifts in the critical path that could affect causal activities for delay or gain.

3. Blocked Periods

The individual periods, whether prepared in the all-periods mode or the grouped-periods mode can be gathered into blocks for summarization. Blocking is mentioned here to distinguish the practice from grouping.

4. Bifurcation: Creating a Progress-Only Half-Step Update

Bifurcation (a.k.a. half-stepping or two-stepping) is a procedure to segregate progress reporting from various non-progress revisions inherent in the updating process. Elements that are considered to be non-progress revisions include:

- Addition or deletion of activities
- Split or combined activities, using new activity IDs
- Addition or deletion of logic links
- Changes to lag value of logic links
- Addition, deletion or changes to constraints
- Changes to OD
- Increase in RD such that RD becomes greater than OD
- Changes to RD not accompanied by changes to PCT
- Increase in RD of activities that have not started

Copyright 2011 AACE® International, Inc.

- Changes to calendar assignments
- Changes to holiday assignments within a pre-existing calendar

The following is one of several step-by-step procedures used to perform the bifurcation:

a. Make a copy of the baseline or an updated schedule for which a half-step is to be created. The original baseline or update will be referred to herein as 01 and the copy as H1.

b. Update the copy, H1, using the progress data from the next schedule update [referred to herein as 02] for the following fields:

   i. Actual start

   ii. Actual finish

   iii. Increased percent complete

   iv. Decreased remaining duration

c. Recalculate schedule H1 by setting the data date[6] to that used by 02.

d. The variance between the completion dates of H1 compared to that of 01 represents the slippage or gain due to progress during the update period.

e. The variance between the completion dates of H1 compared to that of 02 represents the slippage or gain due to non-progress revisions made in 02.

f. These two variance values add up to the variance between 01 and 02.

g. The validity of the H1 file should be checked by comparing the duration of the update period (that is, the difference between the two data dates) to the progress variance. If the progress variance value is greater than the duration of the update period, there are two possible explanations:

   i. The first one is that there is a 'pseudo-non-progress revision' such as an increase in RD-value found itself in the H1 file. This needs to be fixed.

   ii. The second possibility is that the lack of progress during the update period pushed subsequent activities into a period of no-work defined by the calendar. This does not need to be fixed.

h. Elements that are considered to be nuisances or complications that require case-by-case intervention by the analyst include:

   i. Significant changes in activity descriptions to a schedule activity occupying a preexisting activity ID

   ii. Assignments of a different activity ID to a preexisting schedule activity

   iii. Changes in actual start or actual finish values previously reported

[6] Note that in some software packages, for example, Microsoft Project, the default setting need to be changed to recognize the concept of the data date.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

iv. Any change in calculation mode such as progress override and retained logic

Reversal of previously reported progress (i.e. deprogressing) by either increasing the value of remaining duration of the activity over the previously stated value or decreasing the percentage-complete value under what was previously reported.

5. Changing the Contemporaneous Project Schedule During the Analysis

MIP 3.4 is an observational technique that does not involve the insertion or deletion of delays, but instead is based on observing the behavior of the network from update to update and measuring schedule variances based on unaltered, existing logic models. The analyst's preference is to identify and measure the critical project delays using the contemporaneous project schedules as they existed during the project.

However minor corrections to the contemporaneous schedules do not automatically result in a shift in classification of the analytical technique from MIP 3.4 to MIP 3.5 (Observational / Dynamic / Modified or Recreated). Certain limited corrections do not rise to the level of "recreations" or "modifications" and, thus, a MIP 3.4 analysis conducted using schedules with limited corrections is still properly characterized as a MIP 3.4 analysis and not a MIP 3.5 analysis. Refer to Subsection 2.3.D.3 for specific changes that can be implemented under this restriction.

The preference of every analyst should be to use the contemporaneous schedules and updates as they were prepared, reviewed, approved or accepted, and used on the project. This belief is grounded in the fact that the parties used the imperfect schedules to make decisions and manage the project work. Thus, these schedules, even though not perfect, are the best representation of the parties' objectives and understanding of the project contemporaneously and are an indicator of each party's performance. However, absent contract language mandating the use of the contemporaneous schedules to quantify delay, MIP 3.4 is not so rigid that corrections to the contemporaneous schedules cannot be considered by the analyst.

All corrections should be described in the analyst's report so that the other parties and the fact finders understand the changes that the analyst made to the contemporaneous schedule.

The issue of correcting the schedule is one of balance and reasonableness and, for this reason corrections should not be made across the board or automatically. Whenever the analyst believes that changes or modifications need to be implemented in the contemporaneous project schedules during the analysis, it should be noted that MIP 3.4, is a "self-correcting" analysis since it uses each of the successive contemporaneous schedule updates rather than progressing a single schedule.

Finally, the analyst must also be consistent and maintain independence and objectivity. The analyst cannot limit corrections to those that have the affect of improving the analyst's client's position.

One option is to run the analysis two ways. The first run of the analysis would use the schedules as they existed contemporaneously, or unaltered. The second run of the analysis would use the schedule with the minor correction. This approach allows the finder of fact to see the difference, understand the proposed minor modification, and make a reasoned decision without having to guess what the difference would have been between the performing the analysis with the unaltered schedule and with the corrected schedule.

L. Summary of Considerations in Using the Minimum Protocol

- Allows for easier identification of schedule slippage and gains due to schedule revisions and

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

other non-progress factors compared to MIP 3.3

- Cannot be implemented if contemporaneous schedule updates do not exist.
- Uses as the primary tool a set of contemporaneous schedules that are already familiar to the parties at dispute.
- Can enhance credibility if it can be shown that the project participants used the contemporaneous schedules in managing and constructing the project.
- Accounts for the dynamics of evolving events and conditions because it considers the real-time perspective of project conditions, the state of mind, and knowledge of the project participants during each update period
- Considers the dynamic nature of the critical path because it identifies shifts in the critical path between the updates
- Delays or savings in time can be assigned to specific activities.
- Data preparation process may be quicker than other methods that require a separate as-built schedule.
- This method can be used to identify and specifically quantify acceleration.

M. Caveats in Using the Minimum Protocol / Conditions Requiring Enhanced Protocols

- The analyst may determine that the critical path responsible for project delays and gains, in hindsight, may be different from that indicated as the planned critical path shown in the contemporaneous schedule updates. Contemporaneous documentation should be provided with the analysis to support any instance of this determination.
- To yield accurate results, the contemporaneous schedule updates used in the analysis must be validated as accurate both in reported progress, according to SVP 2.2, and in the network's representation of contemporaneous means and methods, according to SVP 2.3.
- If date constraints were liberally used in the update schedules, analysis may be very difficult.

3.5. Observational / Dynamic / Modified or Recreated (MIP 3.5)

A. Description

MIP 3.5 looks like MIPs 3.3 or 3.4 except that it uses contemporaneous schedule updates that were extensively modified or 'updates' that were completely recreated. MIP 3.5 is usually implemented when contemporaneous updates are not available or never existed. The fact that it does not use the contemporaneous updates places this method in a fundamentally different category from the standpoint of the nature of source input data.

It is a retrospective technique that uses the modified or recreated schedule updates to quantify the loss or gain of time along a logic path that was or became critical and identify the activities responsible for the critical delay or gain. Although this method is a retrospective technique, it relies on the forward-looking calculations made at the time the updates would have been prepared. That is, it primarily uses the information to the right of the updates' data date.

While MIP 3.5 is still categorized as an observational technique since it does not involve the insertion

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

or deletion of delays, it is not purely observational when seen in the context of the level of data intervention by the analyst. MIP's 3.3 and 3.4 are purely observational in the sense that the analyst is interpreting what is observed in the behavior of the network from update to update and measuring schedule variances based on unaltered, existing logic models. Because of extensive data intervention by the analyst when using MIP 3.5, the observation is made on the behavior of the networks on which the analyst had significant control.

If there were non-progress revisions to the baseline during the project, the method must recognize those non-progress revisions. Otherwise, the modification or the reconstruction is not complete or proper. As such, a properly implemented MIP 3.5 is considered a Dynamic Logic method. If non-progress revisions did not occur on the project, the results of MIP 3.5 would be very similar to one that would result from MIP 3.2.

MIP 3.5 can be implemented with or without the half-step process. Unlike the contemporaneous MIP's 3.3 and 3.4, the label 'as-is' is an irrelevant distinction from the 'split.' This is because the modification or reconstruction is under the control of the analyst.

Note that an implementation can be a mixture of some MIP 3.3/3.4 and some MIP 3.5 if some contemporaneous schedules are used and some non-contemporaneous ones are newly created. This occurs often when there are large gaps in the record of contemporaneous updates due to data loss or the fact that updates were not performed for a long period of time during the project. Therefore, just because some schedules used for the analysis are not contemporaneous, it does not necessarily make the entire method an MIP 3.5

B. Common Names

1. Update analysis
2. Reconstructed update analysis
3. Modified update analysis
4. Month-to-month
5. Window analysis
6. Windows analysis

C. Recommended Source Validation Protocols

1. Implement SVP 2.3 (update validation) and,
2. Implement SVP 2.3 D.1 or D.2 (reconstruction) and,
3. Implement SVP 2.1 (baseline validation).

D. Enhanced Source Validation Protocols

1. Implement SVP 2.2 (as-built validation)
2. Implement SVP 2.4 (identification of delay events)

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

E. Minimum Recommended Implementation Protocols

1. Recognize all contract time extensions granted.
2. Identify the critical path activity that will be used to track the loss or gain of time for the overall network.
3. Determine whether evaluations will be done on all periods or grouped periods as described in Subsection 3.3.K.
4. Every update may not be used. However, every update should be considered. Accuracy is reduced if updates are not evaluated for multiple-month periods when schedule revisions or changes in sequence occurred to the project plan.
5. Separately identify activities that will be used to track intra-network time losses and gains, such as on interim milestones.
6. Compare the update at the start of the analysis period to the update at the end of the analysis period.
7. Use both the longest path and the least float criteria to identify the controlling chain of activities.
8. Identify changes (gained or lost time) in overall Project completion date based on the critical path activity identified in 3.4.E.2, and if necessary.
9. Identify start and finish variances of critical and near-critical activities in the analysis period.
10. Indentify all changes and/or revisions to logic, durations, and/or progress that were made during analysis period.
11. Identify responsibility for delays and gains during analysis period.
12. Continue with implementation until all periods are complete.
13. Sum the net gains and losses for each period to arrive at an overall impact to the project. The sum of the net impacts must be equal to difference between the first schedule update and last schedule update used in the evaluation.

F. Enhanced Implementation Protocols

1. Daily Progress Method

(See Subsection 3.3.F.1)

G. Identification of Critical and Near-Critical Paths

- Identify and understand all related contractual language.
- Identify the negative float theory being used by the opposing analyst.
- For each analysis interval, identify the calculated critical path using the longest path and the lowest total float concept of the validated update(s) corresponding to the analysis interval.
- The near-critical activity-set in each analysis interval is the one that yields the most number of

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

activities using one of the following methods:

- lowest float value in the update PLUS the average duration of all discrete delay events contained in whole or in part inside the analysis interval, or
- lowest float value in the update PLUS duration of the analysis interval.

H. Identification and Quantification of Concurrent Delays and Pacing

- Determine whether compensable delay by contractor or owner is at issue.
- Identify and understand all related contractual language.
- For each delay event, distinguish the cause from the effect of delay.
- Determine whether literal or functional concurrency theory is to be used.
- If applicable, determine the near-critical threshold (see Subsection 4.3).
- If applicable, determine the frequency, duration, and placement of the analysis intervals.
- For each analysis interval, identify the critical path(s) and the near-critical path(s) and explain all relative delayed starts and extended duration of activities that occurred in the previous analysis interval on the same chains of activities.
- In cases where the difference in full-hindsight approach versus 'blindsight' approach results in a significance variance, use both approaches for evaluation of concurrency.
- For each suspected pacing delay event, identify the parent delay(s) and establish the order of precedence between the parent delay and the pacing delay.
- For each suspected pacing delay event, evaluate whether enough resources could have been realistically employed to perform the paced activity within its original planned duration.

I. Determination and Quantification of Excusable and Compensable Delay

(See MIP 3.3.)

J. Identification and Quantification of Mitigation / Constructive Acceleration

(See MIP 3.3.)

K. Specific Implementation Procedures and Enhancements

1. Fixed Periods

The analysis periods are of virtually identical duration and may coincide with regular schedule update periods. Note that the fixed period implementation can be further processed into Grouped or Blocked implementation as described in MIP's 3.3 and 3.4.

2. Variable Periods

The analysis periods are of varying durations and are characterized by their different natures such as the type of work being performed, the types of delaying influences, or the operative

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

contractual schedule under which the work was being performed.

3. Fixed-Periods vs. Variable-Periods

Similar to the comparison between the all-periods implementation and the grouped-periods implementation for MIP's 3.3 and 3.4, a frequent-fixed-periods implementation yields more information than the infrequent-variable-periods implementation, and is considered more precise. The infrequent-variable-periods implementation allows the analyst to skip over periods that may be unfavorable to the party for which the analysis is being performed.

L. Summary of Considerations in Using the Minimum Protocol

- Able to simulate MIP's 3.3 and/or 3.4 without the benefit of reliable contemporaneous schedule updates if update modification and/or reconstruction is reliable.
- Requires, at the least, a baseline schedule and a reliable source of as-built dates.
- Typically, the smaller the number of modifications to the contemporaneous schedule updates, the more credible the results of the analysis.
- Allows for the consideration of the dynamic nature of the critical path because it identifies shifts in the critical path between the updates even if reliable contemporaneous schedule updates do not exist.
- Allows for the use of hindsight progress updates to simulate the actual critical path.
- Delays can be assigned to specific activities.
- Data preparation process may be quicker than other methods that require compilation of a separate detailed as-built schedule.
- This method can be used to identify acceleration.

M. Caveats in Using the Minimum Protocol / Conditions Requiring Enhanced Protocols

- Where updates are recreated, it is perceived to be an after-the-fact analysis that fails to consider logic changes that would have been incorporated in view of contemporaneous project circumstances.
- Does not have the benefit of source schedules that are already familiar to the parties at dispute.
- To be credible, recreated schedule updates must be accurate both in reported progress to date and in the network's representation of contemporaneous means, and consistent with other project documentation during the update periods reflecting the real-time perspective of project conditions, the state of mind, and knowledge of the project participants.
- Progress reported for activity performance spanning more than one period must be supported by reasonable means.
- Relatively time consuming and therefore costly to implement compared to MIP's 3.3 or 3.4 because it requires substantial support to justify the modifications or the reconstruction.
- The analyst should anticipate significantly more scrutiny and challenges regarding the reliability of the data and logic.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

- The analyst may determine that the critical path responsible for project delays and gains, in hindsight, may be different from that indicated as the planned critical path shown in the contemporaneous schedule updates. Contemporaneous documentation should be provided with the analysis to support any instance of this determination.

- Except with very simple network models, it may be difficult to distinguish schedule variances caused by non-progress revisions from schedule variances caused purely by insufficient progress. The reliability of the project documentation to support distinguishing non-progress revision variances from insufficient progress variations will affect the reliability of the analysis.

3.6. Modeled / Additive / Single Base (MIP 3.6)

A. Description

MIP 3.6 is a modeled technique since it relies on a simulation of a scenario based on a CPM model. The simulation consists of the insertion or addition of activities representing delays or changes into a network analysis model representing a plan to determine the hypothetical impact of those inserted activities to the network. Hence, it is an additive model.

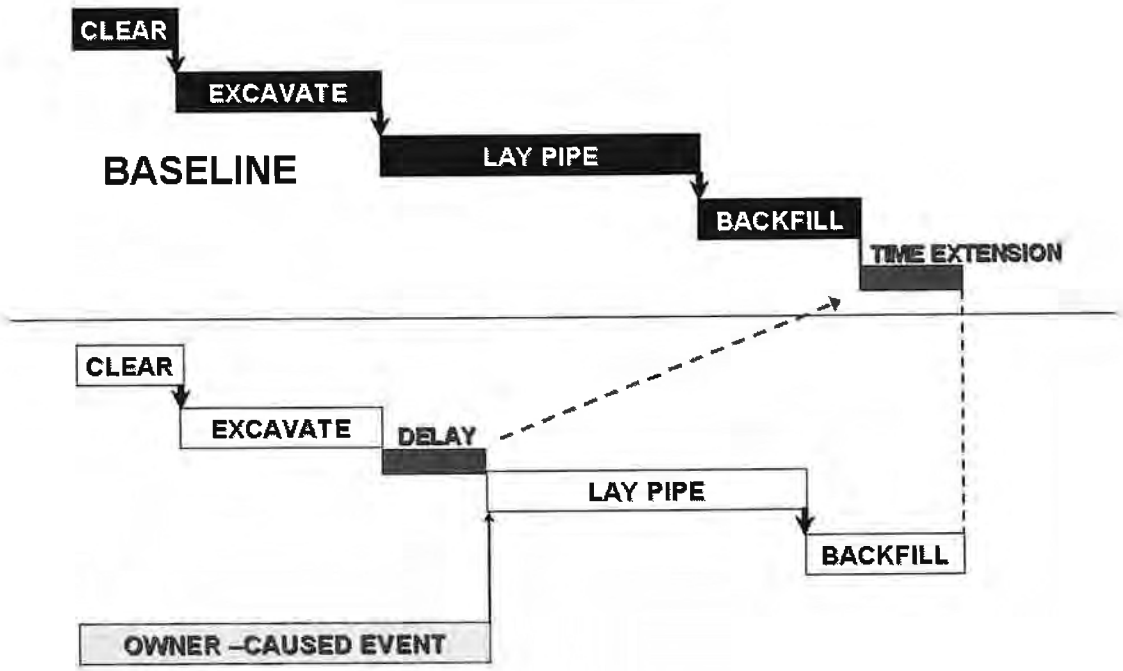


Figure 5 – Graphic Example: Modeled, Additive, Single Base

MIP 3.6 is a single base method, distinguished from MIP 3.7 as a multiple base method. The additive simulation is performed on one network analysis model representing the plan. Hence, it is a static logic method as opposed to a dynamic logic method.

MIP 3.6 can be used prospectively or retrospectively. Prospectively, it can be used to forecast future impacts; for description and implementation[7], see AACE Recommended Practice 52R-06 *Time*

[7] See AACE Recommended Practice No. 52R-06 *Time Impact Analysis – As Applied in Construction.*

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

Impact Analysis – As Applied in Construction. Retrospectively, as described here, it relies on the forward-looking calculations to the right of the data date.

B. Common Names

1. Impacted as-planned (IAP)
2. Impacted baseline (IB)
3. Plan plus delay
4. Impacted update analysis
5. Time impact analysis (TIA)
6. Time impact evaluation (TIE)
7. Fragnet insertion
8. Fragnet analysis

C. Recommended Source Validation Protocols

1. Implement SVP 2.1 (baseline validation) or,
2. Implement SVP 2.3 (update validation) and,
3. Implement SVP 2.4 (delay ID and quantification).

D. Enhanced Source Validation Protocols

1. Implement SVP 2.2 (as-built validation)

E. Minimum Recommended Implementation Protocols

1. Recognize all contract time extensions granted.
2. Identify and quantify delays that are to be evaluated, including source documents on which they are based.
3. Select the planned network to be utilized as the "un-impacted schedule". If not using the baseline, select the contemporaneous update that existed just prior to the initial delay that is to be evaluated. Unless very accurate daily project documentation data is available, there is generally no improvement in analysis accuracy with an attempt to status the update schedule to the beginning of the delay(s) over the use of the analysis update statused to the data date used for the selected period
4. Insert an activity or activities (fragnet) into the "un-impacted schedule" to represent the selected delay(s).
5. Calculate or schedule the new schedule created by the "un-impacted schedule" with the fragnet or activity inserted. In the most basic implementations (i.e. bar chart evaluation) it may be necessary to calculate the impact by hand. The resultant network is considered the "impacted schedule".

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

6. Zero out the durations of all activities in the added fragnet and verify that when calculated, there is no change to the completion date from the un-impacted schedule completion date. This verifies that there is no added logic in the fragnet that creates a delay.

7. Ensure that the resulting schedule has at least one continuous critical path, using the longest path criterion that starts at NTP or some earlier start milestone and ends at a finish milestone, which is the latest occurring schedule activity in the network, after the insertion of delay activities.

8. Compare the Project completion date of the impacted and un-impacted schedules to determine the impact of the inserted fragnet(s).

9. Tabulate and justify each change made to the baseline used to create the impacted as-planned.

10. Use both the longest path and the least float criteria to identify the controlling chain of activities.

11. Quantify net delays and gains.

F. Enhanced Implementation Protocols

1. Analysis accompanied by a listing of known significant delays that are not incorporated into the model.
2. Compare the impacted schedule to the as-built and explain the variances between the two schedules for all significant chains of activities.

G. Identification of Critical and Near-Critical Paths

- Identify and understand all related contractual language.
- Identify the negative float theory being used by the opposing analyst.
- From the baseline schedule, identify the calculated critical path of the baseline using the longest path and the lowest total float concept of the validated baseline.
- The near-critical activity-set is the one that yields the most number of activities using one of the following methods:
    - the lowest float value in the pre-insertion baseline network PLUS the maximum duration of all the inserted delays, or
    - the float value of the pre-insertion baseline longest path PLUS the maximum duration of all the inserted delays, or
    - the lowest float value in the pre-insertion baseline PLUS the average duration of the periods of schedule updates or revisions generated during the project.
- Stepped insertion should be in chronological order of the occurrence of the delay event.

H. Identification and Quantification of Concurrent Delays and Pacing

In its minimum implementation, concurrency cannot be evaluated by this method. The procedure below outlines some enhancements over the minimum implementation that would allow limited evaluation of concurrent delays using this method.

- Determine whether compensable delay by contractor or owner is at issue.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

- Identify and understand all related contractual language.
- For each delay event, distinguish the cause from the effect of delay.
- Determine whether literal or functional concurrency theory is to be used.
- If applicable, determine the near-critical threshold (see Subsection 4.3).
- If applicable, determine the frequency, duration, and placement of the analysis intervals.
- Compare the pre-insertion baseline to the as-built and discretely identify and classify by causation all delays on those chains of activities that are near-critical in the pre-insertion baseline schedule.
- Insert the delays found in the previous step into the pre-insertion baseline and compare the result with the impacted baseline that resulted from the insertion of the claimed delays.
- For each suspected pacing delay event, identify the parent delay(s) and establish the order of precedence between the parent delay and the pacing delay.
- For each suspected pacing delay event, evaluate whether enough resources could have been realistically employed to perform the paced activity within its original planned duration.

I. Determination and Quantification of Excusable and Compensable Delay

Identify and understand all contractual language related to delay apportionment and determine whether the contractual language would override any determination of excusability and compensability based on findings resulting from analyses performed under this RP.

Absent contract language or other agreements, use the following procedure to determine the net total delay apportionment:

1. Excusable and Compensable Delay (ECD)

An additive-modeled schedule by itself does not account for concurrent delays and is therefore unsuitable for determining compensability to the claimant. However, it is possible to analyze for *approximate* concurrency by comparing two additive-modeled schedules. To do this:

a. Create one additive model by inserting all owner-caused and *force majeure*-caused impact events into the baseline.

b. Create another additive model by inserting all contractor-caused impact events into the baseline.

c. Compare the two resulting schedules. To the extent that the net delay-effect beyond the baseline completion date overlaps, there is concurrency.

d. The extent to which the completion date of the additive model with the owner-impact is later than that of the other additive model with the contractor-impact, *may* be the quantity of ECD, but only to the extent that the impacted completion date does not exceed the actual completion date.

2. Non-Excusable and Non-Compensable Delay (NND)

An additive-modeled schedule by itself does not account for concurrent delays and is therefore

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

unsuitable for determining compensability to the respondent or liquidated/stipulated damages. However, it is possible to analyze for *approximate* concurrency by comparing two additive-modeled schedules. To do this:

a. Create one additive model by inserting all owner-caused and *force majeure*-caused impact events into the baseline.

b. Create another additive model by inserting all contractor-caused impact events into the baseline.

c. Compare the two resulting schedules. To the extent that the net delay-effect beyond the baseline completion date overlaps there is concurrency.

d. The extent to which the completion date of the additive model with the contractor-impact is later than that of the other additive model with the owner-impact, *may* be the quantity of NND, but only to the extent that the impacted completion date does not exceed the actual completion date.

3. Excusable and Non-Compensable Delay (END)

a. Insert all owner-caused and *force majeure*-caused impact events into the baseline and recalculate the schedule.

b. The difference between the baseline completion of the longest path and the completion of the longest path in the additive model is the END.

c. If the completion of the longest path in the additive model is later than the actual completion date, the END is the difference between the baseline completion and the actual completion dates.

J. Identification and Quantification of Mitigation / Constructive Acceleration

The comparison between the completion date of the longest path of the additive model and the actual completion date will provide a gross approximation of acceleration or delay mitigation. This is based on the theory that if non-contractor delays inserted into the baseline yield a completion date that is later than that actually achieved, it must have resulted from shortening of actual performance duration and/or the use of more aggressive logic. Note that the gross comparison does not provide the detail necessary in order to address the issue of who gets the credit for the acceleration.

K. Specific Implementation Procedures and Enhancements

1. Global Insertion

Once the Baseline Schedule is identified then all known delaying events are added to this schedule. In the global insertion method, all delay events and influences are added together and the impact is determined on the combined effect of the added delays. If the analyst is trying to document the total impact of all delay events then insertion of all events at one time may accomplish this task.

2. Stepped Insertion

The delays are added individually or in groups to the Baseline Schedule and the impact is determined after each iterative insertion. If the analyst is concerned with the impact of each delay event then the events should be inserted in chronological order of occurrence of the event in

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

order to reflect actual circumstances If the events are introduced into the delay analysis individually, the impacted completion date should be recorded after each delay is included.

For each delay event introduced into this analysis one must be able to document the duration of the delay, and the predecessor and successor activities related to the delay, in order to perform this method objectively.

L. Summary of Considerations in Using the Minimum Protocol

- Suited primarily for the use in identifying and quantifying potential delays rather than actual delays.
- This method can be used to quantify non-compensable time extensions, but cannot, by itself, quantify compensable delays because it does not account for concurrent or pacing delays.
- This method can be used to identify acceleration, although actual performance that is better than predicted by use of this method does not, in and of itself, necessarily demonstrate active implementation of acceleratory measures.
- Intuitively easy to understand and present, and can be understood especially by those that do not have a construction background.
- Does not require an as-built schedule or contemporaneous schedule updates.
- Can be implemented relatively easily and quickly compared to other MIP's, but is of limited reliable use.

M. Caveats in Using the Minimum Protocol / Conditions Requiring Enhanced Protocols

- Because it does not rely on as-built data, it is a hypothetical model, especially where the project is actually constructed differently than the baseline schedule logic.
- Susceptible to unintended or intended manipulation due to modeling if only one party's delays are considered, since the method cannot account for the impact of delays not explicitly inserted.
- Accuracy of the duration of critical path impact for any given delay event degrades in proportion to the chronological distance of the delay event from the data date of the schedule.
- Since it relies only on the initial as-planned critical path to analyze delays, it does not account for changes in logic or durations of activities
- Does not necessarily consider the chronological order of delays.
- Extremely sensitive to the order of fragnet and logic insertion.

3.7. Modeled / Additive / Multiple Base (MIP 3.7)

A. Description

MIP 3.7 is a modeled technique since it relies on a simulation of a scenario based on a CPM model. The simulation consists of the insertion or addition of activities representing delays or changes into a network analysis model representing a plan to determine the hypothetical impact of those inserted activities to the network. Hence, it is an additive model.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

MIP 3.7 is a multiple base method, distinguished from MIP 3.6 as a single base method. The additive simulation is performed on multiple network analysis models representing the plan, typically an update schedule, contemporaneous, modified contemporaneous, or recreated. Each base model creates a period of analysis that confines the quantification of delay impact.

Because the updates typically reflect non-progress revisions, it is a dynamic logic method as opposed to a static logic method.

MIP 3.7 is a retrospective analysis since the existence of the multiple periods means the analyst has the benefit of hindsight.

B. Common Names

1. Window analysis
2. Windows analysis
3. Impacted update analysis
4. Time impact analysis (TIA)
5. Time impact evaluation (TIE)
6. Fragnet insertion
7. Fragnet analysis

C. Recommended Source Validation Protocols

1. Implement SVP 2.1 (baseline validation) and,
2. Implement SVP 2.3 (update validation) and,
3. Implement SVP 2.4 (delay ID and quantification)

D. Enhanced Source Validation Protocols

1. Implement SVP 2.2 (as-built validation)

E. Minimum Recommended Implementation Protocols

1. Recognize all contract time extensions granted.
2. Identify and quantify delays that are to be evaluated, including source documents on which they are based.
3. Select the as-planned network to be utilized as the "un-impacted schedule". If not using the baseline, select the contemporaneous update that existed just prior to the initial delay that is to be evaluated.
4. Identify the schedule updates, or recreated updates, that correlate to the beginning of each analysis interval. Unless very accurate daily project documentation data is available, there is generally no improvement in analysis accuracy with an attempt to status the update schedules to the beginning of the delay(s) over the use of the analysis updates statused to the data dates used

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

for each period.

5. Insert an activity or activities (fragnet) into the "un-impacted schedule" to represent the selected delay(s). Ensure that the impact events are chronologically inserted into the proper updated schedules.

6. Calculate or schedule the new schedule created using the "un-impacted schedule" with the fragnet or activity inserted. In the most basic implementations (i.e. bar chart evaluation) it may be necessary to calculate the impact by hand. The resultant network is considered the "impacted schedule".

7. Zero out the durations of all activities in the added fragnet and verify that when calculated, there is no change to the completion date from the un-impacted schedule completion date. This verifies that there is no added logic in the fragnet that creates a delay situation.

8. Ensure that the resulting schedule has at least one continuous critical path, using the longest path criterion that starts at NTP or some earlier start milestone and ends at a finish milestone, which is the latest occurring schedule activity in the network, after the insertion of delay activities.

9. Tabulate and justify each change made to an update schedule to create the impacted schedule. Insert model fragnets in the correct updated schedule containing previous impacts, period by period.

10. Use both the longest path and the least float criteria to identify the controlling chain of activities.

11. A new analysis period needs to be established with each significant change in the critical path chain of activities, and with each available contemporaneous update schedule.

12. Correlate the impacted schedule with each available contemporaneous update, identifying and using either hindsight or blindsight for establishing remaining durations for the incomplete fragnet activities.

13. Quantify net delays and gains.

14. Prepare a tabulation that summarizes the variances quantified for each analysis period and reconcile the total to the result that would be obtained by a competent implementation of MIP 3.1.

F. Enhanced Implementation Protocols

1. Analysis is accompanied by a listing of known significant delays not incorporated into the model.

2. Compare the impacted schedule to the as-built and explain the variances between the two schedules for all significant chains of activities.

3. Use accepted baseline, updates and schedule revisions.

G. Identification of Critical and Near-Critical Paths

- Identify and understand all related contractual language.
- Identify the negative float theory being used by the opposing analyst.
- For each analysis interval, identify the calculated critical path using the longest path and the lowest total float concept of the pre-insertion validated update(s) corresponding to the analysis

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

interval.

- The near-critical activity-set in each analysis interval is the one that yields the most number of activities using one of the following methods:
  - float value of the longest path in the pre-insertion validated update PLUS the maximum duration of all discrete delay events inserted in whole or in part inside the analysis interval, or
  - lowest float value in the pre-insertion validated update PLUS the maximum duration of all discrete delay events inserted in whole or in part inside the analysis interval, or
  - lowest float value in the update PLUS duration of the analysis interval.
- Stepped insertion should be in chronological order of the occurrence of the delay event.

H. Identification and Quantification of Concurrent Delays and Pacing

- Determine whether compensable delay by contractor or owner is at issue.
- Identify and understand all related contractual language.
- For each delay event, distinguish the cause from the effect of delay.
- Determine whether literal or functional concurrency theory is to be used.
- If applicable, determine the near-critical threshold (see Subsection 4.3.)
- If applicable, determine the frequency, duration, and placement of the analysis intervals.
- For each analysis interval, compare the pre-insertion schedule update(s) corresponding to the analysis interval to the as-built, and discretely identify and classify by causation all delays on those chains of activities that are near-critical in the pre-insertion schedule update.
- Insert those discrete delay activities into the pre-insertion update and compare the result of the impacted schedule to the un-impacted schedule for that analysis interval that resulted from the insertion of the claimed delays.
- Compare the longest path of the impacted schedule for the analysis interval with the longest path of the same schedule recalculated with the progress data and the data date of the subsequent analysis interval. If the longest path and the overall completion dates are the same, the predictive model generated for the analysis period is reasonably accurate.
- If the longest path is the same but the overall completion date of the progressed version is later, the delay predicted for the longest path was, in actuality, worse, or additional delay events occurred on the longest path.
- If the longest path is the same but the overall completion date of the progressed version is earlier, there was acceleration or some other delay mitigation on the delays on the longest path.
- If the longest path and the overall completion dates are the same but an additional path is also the longest path, some activity or delay event on that additional longest path may be concurrent with the claimed delay.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

- If the longest path has changed but the overall completion date is the same, some activity or delay event on the new longest path may be partially or completely concurrent with the claimed delay on the former longest path.

- If the longest path has changed but the overall completion date is earlier, some activity or delay event on that new longest path may be partially or completely concurrent with the claimed delay on the former longest path.

- If the longest path has changed but the overall completion date is later, some activity or delay event on that new longest path may be partially or completely concurrent with the claimed delay on the former longest path.

- Compare the longest path of the progressed version of the analysis interval with the longest path of the pre-insertion baseline of the subsequent analysis interval. Any differences are the result of non-progress revisions implemented in the pre-insertion baseline of the subsequent analysis interval and should be identified and explained.

- Repeat the process for all analysis intervals.

- For each suspected pacing delay event, identify the parent delay(s) and establish the order of precedence between the parent delay and the pacing delay.

- For each suspected pacing delay event, evaluate whether enough resources could have been realistically employed to perform the paced activity within its original planned duration.

I. Determination and Quantification of Excusable and Compensable Delay

Identify and understand all contractual language related to delay apportionment and determine whether the contractual language would override any determination of excusability and compensability based on findings resulting from analyses performed under this RP. Note that this method or a variation of this is often specified as the method of choice in many construction contracts, including specific procedural steps for implementation. Therefore, the following procedure should be applied only in absence of contract language or other agreements.

1. Excusable and Compensable Delay (ECD)

An additive-modeled schedule by itself does not account for concurrent delays and is therefore unsuitable for determining compensability. However, it is possible to analyze for concurrency by comparing two additive-modeled schedules. The reliability of this quantification method is inversely proportional to the duration of the analysis periods. In other words, the shorter the period duration, the more reliable the quantification. See Subsection 4.2.D.4.

To do this, for each analysis period:

a. Create one additive model by inserting the subject owner-caused and *force majeure*-caused impact events into the update with the data date closest in time prior to the commencement of the impact event.

Create a separate additive model by inserting the contractor-caused impact events into the same update chosen for the owner-impact model.

b. Compare the two resulting schedules. To the extent that the net delay-effect beyond the baseline completion date overlaps there is concurrency.

c. The extent to which the completion date of the additive model with the owner-impact is later

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

than that of the other additive model with the contractor-impact, *may* be the quantity of ECD, but only to the extent that the impacted completion date does not exceed the actual completion date.

2. Non-Excusable and Non-Compensable Delay (NND)

An additive-modeled schedule by itself does not account for concurrent delays and is therefore unsuitable for determining compensability. However, it is possible to analyze for concurrency by comparing two additive-modeled schedules. The reliability of this quantification method is inversely proportional to the duration of the analysis periods. In other words, the shorter the period duration, the more reliable the quantification. See Subsection 4.2.D.4.

To do this, for each analysis period:

a. Create one additive model by inserting the subject contractor-caused impact events into the update with the data date closest in time prior to the commencement of the impact event.

b. Create a separate additive model by inserting the owner-caused and *force majeure*-caused impact events into the same update chosen for the owner-impact model.

c. Compare the two resulting schedules. To the extent that the net delay-effect beyond the baseline completion date overlaps there is concurrency.

d. The extent to which the completion date of the additive model with the contractor-impact is later than that of the other additive model with the owner-impact, *may* be the quantity of NND, but only to the extent that the impacted completion date does not exceed the actual completion date.

3. Excusable and Non-Compensable Delay (END)

a. Insert the owner-caused and *force majeure*-caused impact events into the update with the data date closest in time prior to the commencement of the impact event.

b. The difference between the completion of the longest path prior to the insertion and the completion of the longest path after the insertion is the END.

c. The post-insertion schedule can be further analyzed by inserting actual progress data. If the resulting completion date is shorter than that indicated in the post-insertion schedule prior to actual progressing, it may be proper to reduce the amount of END accordingly.

J. Identification and Quantification of Mitigation / Constructive Acceleration

In MIP 3.7, after inserting delays into the update closest in time preceding the delay, the identity and the movement of the critical path is monitored. Then, when the update is progressed with actual progress data and the same logic path reexamined, if the logic path is shorter than that which was calculated prior to adding actual progress, there was acceleration or schedule recovery during the period for which actual progress was entered.

K. Specific Implementation Procedures and Enhancements

1. Fixed Periods

The analysis periods are of virtually identical duration and may coincide with regular schedule update periods.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

2. Variable Periods

The analysis periods are of varying durations and are characterized by their different natures such as the type of work being performed, the types of delaying influences, significant project events, changes to the critical path, revised baseline schedules, and/or the operative contractual schedule under which the work was being performed.

3. Global Insertion

All the delay events and influences are added together and the impact is determined on the combined effect of the added delays.

4. Stepped Insertion

The delays are added individually or in groups and the impact is determined after each iterative insertion. Note that stepping is different from inserting the delays in time period groups that create a straight, vertical delineation of analysis periods; whereas, delays for each step insertion may not fit neatly into an existing analysis period.

L. Summary of Considerations in Using the Minimum Protocol

- Considers the chronological order of delays better than MIP 3.6.
- Can be performed relatively easily throughout the life of the project for project control when implemented as the AACE Recommended Practice 52R-06, Time Impact Analysis, as well as for forensic use as described in this recommended practice.
- Takes into consideration changes to the critical path as they occur on the project
- Requires routine schedule updates performed throughout project life.
- This method can be used to quantify non-compensable time extensions, but cannot, by itself, quantify compensable delays because it does not account for concurrent or pacing delays.
- This method can be used to identify and quantify acceleration, although actual performance that is better than predicted by use of this method does not, in and of itself, necessarily demonstrate active implementation of acceleratory measures.
- Does not require an as-built schedule.

M. Caveats in Using the Minimum Protocol / Conditions Requiring Enhanced Protocols

- Because it does not rely on as-built data, it is a hypothetical model, especially where the project is actually constructed differently than the baseline schedule logic. However, compared to MIP 3.6, the periodic nature of the analysis incorporates as-built data.
- Susceptible to unintended or intended manipulation due to modeling if only one party's delays are considered, since the method cannot account for the impact of delays not explicitly inserted.
- Accuracy of the duration of critical path impact for any given delay event degrades in proportion to the chronological distance of the delay event from the data date of the schedule.
- Labor intensive in comparison to MIP 3.6 when implemented properly because of the additional

Copyright 2011 AACE® International, Inc.

source schedules and technical complexity.

- Extremely sensitive to the order of fragnet and logic insertion.

3.8. Modeled / Subtractive / Single Simulation (MIP 3.8)

A. Description

3.8 is a modeled technique relying on a simulation of a scenario based on a CPM model. The simulation consists of the extraction of entire activities or a portion of the as-built durations representing delays or changes from a network analysis model representing the as-built condition of the schedule to determine the impact of those extracted activities on the network. Hence, it is a subtractive model.

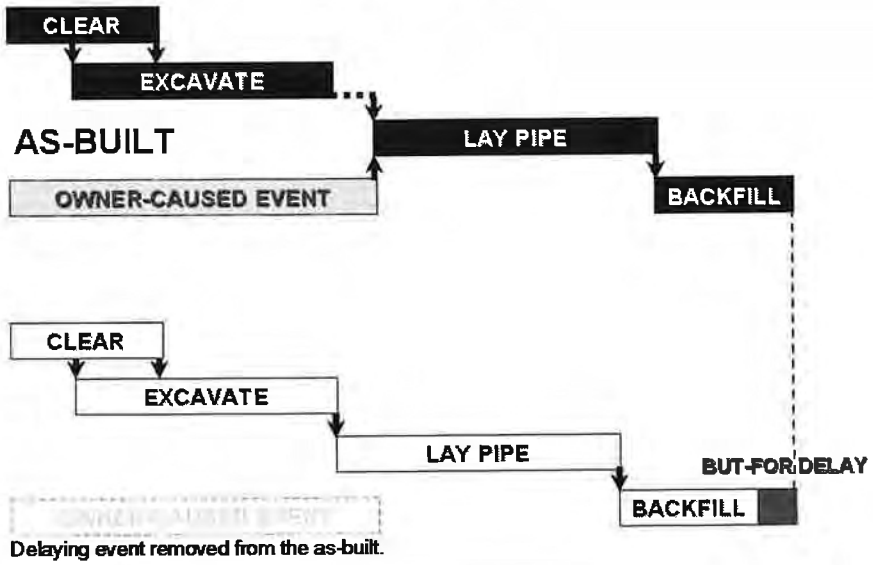


Figure 6 – Graphic Example: Modeled, Subtractive, Single Simulation

The subtractive simulation is performed on one network analysis model representing the as-built. Because it uses one network analysis model, it is technically a static logic method as opposed to a dynamic logic method. But, recall that the significance of the distinction rests in the fact that the project undergoes non-progress revisions reflecting the as-built conditions in contrast to the original baseline logic. And in view of that, a method that dynamically considers how the original logic changed is thought to be more forensically accurate than that which statically relies solely on the baseline logic. Therefore, in that context, the distinction in the case of MIP 3.8 is irrelevant since it relies on the as-built as the starting point.

MIP 3.8 is primarily used retrospectively.

B. Common Names

1. Collapsed as-built (CAB)
2. But-for analysis
3. As-built less delay

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

4. Modified as-built

C. Recommended Source Validation Protocols

1. Implement SVP 2.2 (as-built validation) and,
2. Implement SVP 2.4 (delay ID and quantification)

D. Enhanced Source Validation Protocols

1. Implement SVP 2.1 (baseline validation)
2. Implement SVP 2.3 (update validation)

E. Minimum Recommended Implementation Protocols

1. The as-built schedule model from which the delays are extracted is CPM logic-driven as opposed to a graphic as-built schedule. Therefore the calculated early start and early finish dates in the as-built schedule model match the actual start and actual finish dates; and, the collapsed schedule after delay extraction should also be CPM logic-driven.
2. Each change made to the as-built schedule model to create the collapsed schedule is tabulated and justified.
3. Reconcile all contract time extensions granted.
4. The as-built schedule model should contain:
   a. As-built critical path activities found in implementing Subsection 4.3 including near-critical and near-longest paths.
   b. Baseline critical path and longest path.
   c. All contractual milestones and their predecessor chains.
   d. All chains of activities alleged by the respondent to have constituted critical claimant-caused delays or concurrent delays due to specific fault of the claimant.
   e. All delays for which contract time extensions were granted.
5. The collapsing process should not involve any adjustment to logic, including lag values, or removal of constraints unless each instance of such adjustment is specifically tabulated and the basis of such adjustment explained.
6. Perform a constructability analysis of the resulting collapsed as-built schedule.

F. Enhanced Implementation Protocols

1. Reconcile the as-built and the collapsed as-built to the as-planned schedule.
2. Use all schedule activities found in the baseline schedule.
3. To account for periods during which work could not have progressed under the collapsed

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

scenario, use a calendar simulating actual weather conditions.

G. Identification of Critical and Near-Critical Paths

Prior to the extraction of delays, pure computation of the criticality of a schedule activity under the collapsed as-built method is neither practical nor necessary. To fully verify the quantum of compensable delays and to fully account for non-compensable concurrencies, the analyst must consider and extract the delays *and then* assess the criticality of the delay. The critical path identified after the extraction process is called the analogous critical path. See Subsection 3.8.K.3

Identification of the near-controlling path at this stage is not necessary if the significant set of as-built activities were properly selected when the as-built model was prepared.

The checklist for the identification of critical and near-critical paths is as follows:

- Identify and understand all related contractual language.
- Identify the negative float theory used by the opposing party.
- If necessary, identify the as-built controlling path(s) using Subsection 4.3.C.
- After extraction of delays, identify the analogous critical path (see Subsection 3.8.K.3).

H. Identification and Quantification of Concurrent Delays and Pacing

Even in its minimum implementation, concurrency analysis is built into this method. Since the as-built, by definition, contains all delays that occurred on the activity paths modeled to the extent that a subset of those delays are extracted, the post-extraction schedule still contains the impact of those delays that were left in the model, thereby accounting for the concurrent impact of those delays. Because of this, often the evaluation of pacing delays is a part of the extraction process. To what extent concurrent delays are evaluated is directly related to the significant set of activities that was integrated into the as-built model.

The checklist for the identification of critical and near-critical paths is as follows:

- Determine whether compensable delay by contractor or owner is at issue.
- Identify and understand all related contractual language.
- For each delay event, distinguish the cause from the effect of delay.
- Determine whether literal or functional concurrency theory is to be used (see Subsection 4.2.).
- In a stepped extraction implementation, begin extraction with the delay event that is latest in time.
- Reconcile the total net variance between the as-built and the collapsed schedule by identifying the analogous critical path (see Subsection 3.8.K.3).
- For each suspected pacing delay event, identify the parent delay(s) and establish the order of precedence between the parent delay and the pacing delay.
- For each suspected pacing delay event, evaluate whether enough resources could have been realistically employed to perform the paced activity within its original planned duration.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

I. Determination and Quantification of Excusable and Compensable Delay

Identify and understand all contractual language related to delay apportionment and determine whether the contractual language would override any determination of excusability and compensability based on findings resulting from analyses performed under this RP.

Absent such overriding language, use the following procedure.

1. Excusable and Compensable Delay (ECD)

The difference between the as-built completion date and the collapsed as-built completion date resulting from the extraction of all owner-caused delays is the total ECD. If the owner has paid the contractor specifically to accelerate, then any negative delay durations (delay mitigation) resulting from the owner-paid acceleration should be credited to the owner against the total ECD to avoid double payment to the contractor for acceleration. Where the quantification of the duration of the specific paid mitigation is not reasonably feasible, the credit adjustment may be accomplished by crediting the monetary value of the acceleration payment against the monetary value of the ECD.

2. Non-Excusable and Non-Compensable Delay (NND)

The difference between the as-built completion date and the collapsed as-built completion date resulting from the extraction of all contractor-caused delays is the total NND. If the contractor accelerated or implemented other mitigating measures and the owner did not reimburse the contractor for the cost of mitigation, the net critical mitigation duration should be subtracted from the total NND.

3. Excusable and Non-Compensable Delay (END)

Because entitlement to END does not require that concurrency periods be eliminated, this method is too rigorous for quantifying END since it automatically accounts for concurrency. However, it can be said that the difference between the as-built completion date and the collapsed as-built completion date resulting from the extraction of all owner-caused delays is *at least* the total END.

J. Identification and Quantification of Mitigation / Constructive Acceleration

The subtractive modeling methods are not the best tools for identifying and quantifying specific instances of acceleration and delay mitigation, since the methods start with the as-built schedule that already incorporates all acceleration measures to the extent that they were actually implemented. When the delays are subtracted the resulting schedule still retains all acceleration measures that were built into the as-built. Therefore, the resulting comparison is that of one accelerated schedule to another, albeit one without delays.

However, the subtractive modeling methods are one of the only tools to identify and quantify the overall extent to which the contractor's actual performance would have resulted in a project duration shorter than the baseline schedule, but for the delays. If the completion date of the collapsed schedule is earlier than that of the original baseline schedule it can be claimed by the contractor that if allowed to proceed unhindered by delays, it was possible to finish earlier than originally planned. Whether the contractor would have decided to actually incur the necessary expenses to implement the acceleratory measures absent delays must be proven independently of the schedule analysis.

K. Specific Implementation Procedures and Enhancements

1. Choice of Extraction Modes

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

a. Global Extraction

All the delay events and influences are extracted together and the impact is determined on the combined effect of the extracted delays.

b. Stepped Extraction

The delays are extracted individually or in groups, and the impact is determined after each iterative extraction. Stepped extraction should be in reverse chronological order of the occurrence of the delay event. This is the reverse of the order recommended for the additive MIP's 3.6 and 3.7. In the additive methods, the base schedule contains no delays, so it makes sense to start the additive process chronologically. In 3.8 the base schedule already contains all the delays. If extraction is performed chronologically, the iterative results would make no sense. For example, extracting the earliest delay first would create a schedule that still contains all the delays that occurred after the first delay.

2. Creating a Collapsible As-Built CPM Schedule

a. The first step in modeling the as-built CPM is to determine the actual duration of each schedule activity. In assigning actual durations and actual lead-lag values, use a 7-day week calendar which allows all duration units to be in calendar days rather than working days, the main reason being that often project documentation will reveal that work was performed on some days that were planned to be non-working days. The spillover advantage of using a 7-day calendar is that it significantly simplifies the reconciliation of the calculated results. This system may sometimes produce anomalous results. For example, if work started on Friday and completed on the next Monday, the duration assignment will be four days although only two were actually worked. Then in the collapse, if the same activity happens to start on the first day of a four-day holiday weekend, it will show to continue through the holiday weekend and complete on the last day of the holiday. However, the system tends to balance itself out because it is equally likely that an activity which started on a Friday and finished on the following Monday (a 2 workday activity taking 4 calendar days) would show up as occupying four workdays from a Monday through Thursday in the collapsed as-built. The counterbalancing rule is applicable to both work activities and no-work durations. Hence, the 7-day calendar is often used initially for assigning actual durations to both types of activities. Conversion to a 7-day calendar, however, may not always be appropriate. For example, when calendars include long non-work periods, such as winter breaks, it may be more appropriate to retain the original project calendars to ensure that the collapsed as-built schedule does not result in work being performed during non-work periods.

b. The as-built schedule, containing actualized data, forms the basis for creating the collapsible As-Built CPM schedule. This bar chart is modified to convert it to a CPM schedule by incorporating actual and underlying unimpacted logic relationships. The purpose of this is to allow the CPM schedule to simulate the actual activity durations and sequences solely by CPM computation using the logic ties and actual durations. The four-series diagram in Figure 7 illustrates this concept.

c. Be aware that in many cases an activity should have more than one predecessor. For example, suppose that the start of wire pulling in building B was controlled by the completion of wire pulling in building A. In such a case, there would be a finish-to-start (FS) relationship with a zero lag value from "pull wire building A" to "pull wire building B". But the installation of conduit in building B will need to be tied as a logical predecessor to wire pulling, even if that activity may not have been the controlling factor. This non-controlling relationship may become the controlling relationship if the wire pulling for building A collapses to an earlier

Copyright 2011 AACE® International, Inc.

date than conduit installation for building B.

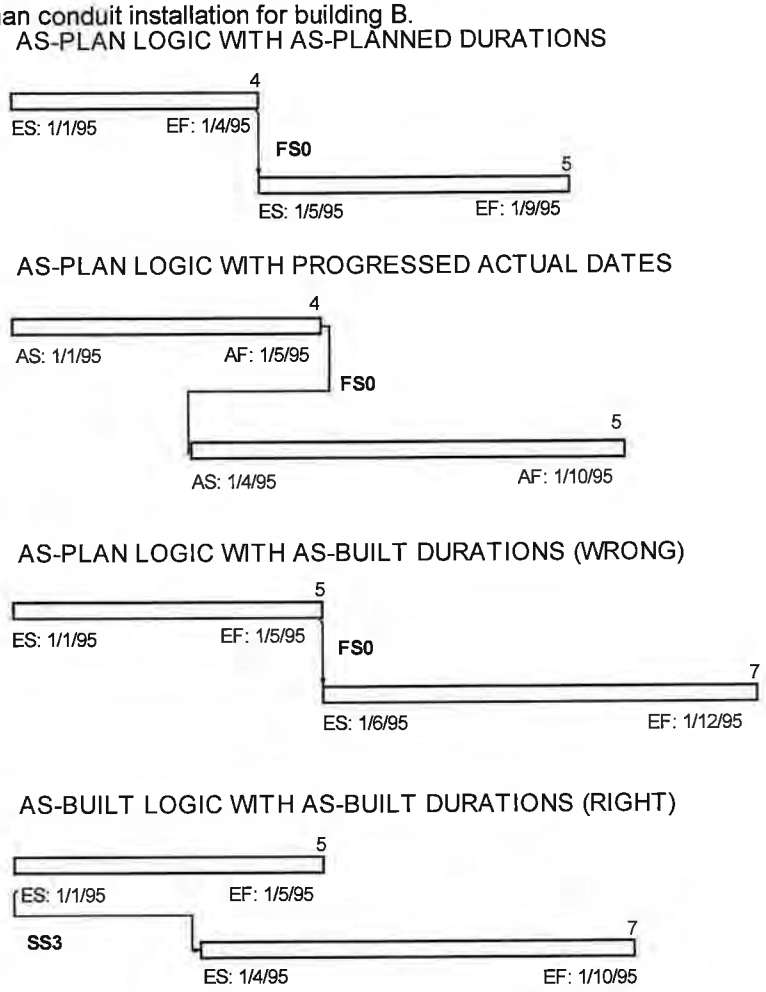
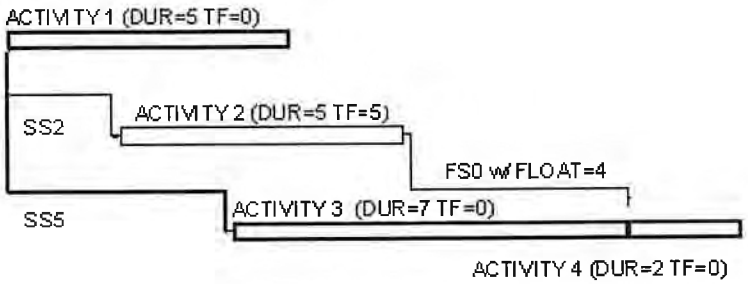


Figure 7 – Conversion of As-Planned Logic to As-Built Logic

d. Depending on the level to which the as-built logic has been developed, the activity float value in and of itself, may not be the true computed delineation of the as-built controlling path. This is illustrated in Figure 8 below.

e. The focus is on activity #2. This first model shows a FS0 logic tie from activity #2 to activity #4 allowing activity #2 to carry a float value of 5. The diagram below shows that a change to the successor logic of activity #2 to a FF5 to activity #3 will not change the dates but makes activity #2 critical.



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

Figure 8 – As-Built Logic Showing Activity 2 Not Critical

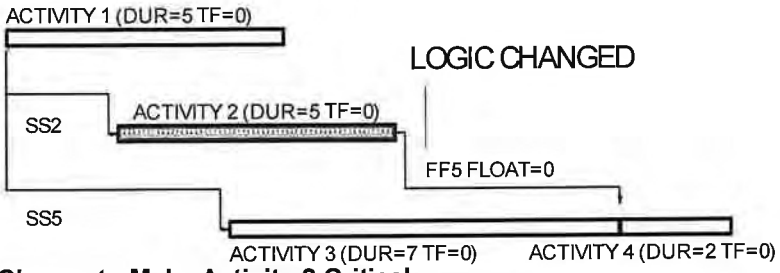


Figure 9 – Logic Change to Make Activity 2 Critical

f. Another way of looking at this FF5 logic is to model the 5 days of lag as an explicit schedule activity, and tie that to activity #4 with an FS0. While adopting a policy to replace all non-zero lag values with explicit activities and restrict all relationship ties to FS0 may simplify the logic and debugging process, it will greatly increase the number of activities to be processed.

g. If the logic change is more reflective of what actually took place, the second model is superior to the first model and is further along in the modeling process. This does not make the first model wrong because the validity of the as-built dates is intact, just the logic and the calculated float have changed. But, to rely solely on the float value of a less developed as-built model may invite error in the determination of the controlling path.

h. In most cases, simulating the actual performance of work using CPM logic requires the use of logic ties other than standard, simple, consecutive finish-to-start ties (FS0). The following is a set of guidelines to be used in assigning CPM logic ties to simulate as-built performance:

   i. Replace any FS logic with lag values 50% or longer than the duration of its predecessor or its successor, with a schedule activity.

   ii. Replace any SS Logic with lag values 50% or longer than the duration of the predecessor with a schedule activity.

   iii. Replace any FF Logic with lag values 50% or longer than the duration of the successor with a schedule activity.

   iv. Replace FS logic with negative lag values whose absolute value is larger than one unit of duration, with another type of logic with a zero or a positive lag that does not violate the rules stated above. Some practitioners, however, may elect to allow negative lags if the lag value is small relative to the predecessor activity duration.

   v. Replace SS or FF logic with negative lag values whose absolute value is larger than one unit of duration, with another type of logic with a zero or a positive lag that does not violate the rules stated above.

   vi. Where more than one type of logic tie is applicable, use the type that would use the smallest absolute lag value as the controlling logic tie.

i. This highlights the importance of this logic process, but do not expect to perfect the logic at this stage. This is due to the fact that the collapsed as-built method is most efficiently implemented as a multi-iterative process involving rapid modeling and a subsequent trial collapse which reveals faulty or incomplete as-built logic. This is repeated until the model is

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

debugged. However, this does not excuse the analyst from using a judicious combination of expert judgment, common sense, and extensive input from project personnel with first-hand knowledge of the day-to-day events during this step of the process.

3. Identification of the Analogous Critical Path (ACP)

The analogous critical path, or ACP, is determined by transferring the calculated critical path of the collapsed as-built onto the logic path of the as-built schedule. After the delays are extracted from the as-built schedule, the remaining critical path is transferred onto the logic path of the as-built schedule. This critical path is called the analogous critical path, or ACP. The analogous critical path allows the analyst to reconcile the total delta between the collapsed state and the as-built state with the sum of those delays, whole or in part, lying on the analogous path.

Because the collapsed as-built schedule is the residual schedule after the extraction of delay activities at issue, a comparison of the critical path of the collapsed as-built with the same logic path on the as-built will yield the list of delays whose discrete durations add up to the net difference in overall duration between the two schedules.

The ACP may or may not be identical to the controlling path. The paths are identical if the sum of the delays along the controlling path is equal to the duration difference between the as-built and the collapse. A rule that can be derived from this is that the sum of delays along the ACP is equal to or less than those on the controlling path, but never more. The converse of this rule is that if a delay that does not lie on the ACP but is on the controlling path and was not extracted out of the as-built, a full collapse may not be achieved to the extent the duration of the particular delay exceeds the arithmetic difference between the sum of the delays on the ACP and the sum of all delays on the subject controlling path.

L. Summary of Considerations in Using the Minimum Protocol

- Concept is intuitively easy to understand and present.
- Can isolate owner and/or contractor-caused delays if there is sufficient detail in the as-built schedule.
- Relies upon history of actual events.
- Can be implemented without any baseline schedule or contemporaneous schedule updates.
- Relatively few practitioners with significant, hands-on experience in properly performing this method.

M. Caveats in Using the Minimum Protocol / Conditions Requiring Enhanced Protocols

- Perceived to be purely an after-the-fact reconstruction of events that does not refer to schedule updates used during the project.
- Summarized as-built variation of the minimum protocol creates the potential for missing scope of work or the skewing of results of the analysis.
- Reconstructing the as-built schedule is very fact and labor intensive.
- Assignment of logic to mimic as-built conditions requires subjective decisions that sometimes do not match the contemporaneously planned logic relationships between activities.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

- Indicated as-built critical path throughout project does not necessarily reflect changes in the prospective critical path indicated in contemporaneous schedule updates.
- Susceptible to unintended or intended manipulation during as-built logic assignments.
- May ignore prospective critical paths projected in the contemporaneous schedule updates along with the project management decisions that were based upon those critical paths.
- Not suited for identification or quantification of acceleration because the source as-built schedule already incorporates acceleration.

3.9. Modeled / Subtractive / Multiple Base (MIP 3.9)

A. Description

Like MIP 3.8,MIP 3.9 is a modeled technique relying on a simulation of a CPM model scenario. The simulation consists of the extraction of entire activities or a portion of the as-built durations representing delays or changes from a network analysis model representing the as-built condition of the schedule to determine the impact of those extracted activities to each network model. Hence, MIP 3.9 is also a subtractive model.

MIP 3.9 is a multiple base method, distinguished from MIP 3.8 which is a single base method. The subtractive simulation is performed on multiple network analysis models representing the as-built schedule, typically updated schedules, which may include contemporaneous, modified contemporaneous, or recreated schedules. As the project undergoes non-progress revisions in reaction to the as-built conditions, in contrast to the original baseline logic, MIP 3.9 considers those logic changes and, therefore, is thought to be more attuned to the perceived critical path, in addition to the actual critical path that existed during the project than methods which rely solely on the initial baseline or the final as-built. Because the updates typically include non-progress revisions, MIP 3.9 is a dynamic logic method as opposed to a static logic method.

The subtractive simulation is performed on periodic network analysis models representing intervals of the as-built schedule. Each model creates a time period of analysis that confines the quantification of delay impact. Forecasted delays beyond an analysis period, however, may also need to be extracted at the time that the forecasted delays are introduced into the schedule. For example, a schedule update may include a change order impact inserted into the update to forecast delay events which is expected to occur several months after the schedule update period. This may distort the delay calculations when compared with the previous schedule being used as the baseline for the analysis. Thus, these forecasted impacts may need to be removed from the analysis period under consideration in order to properly quantify current impacts.

MIP 3.9 shares an important technical consideration with MIP 3.5 (Observational / Dynamic / Modified or Recreated), namely the choice in using hindsight or blindsight in recreating, and in the case of MIP 3.9, modeling activities that were partially complete on a given data date.

MIP 3.9 is primarily used retrospectively.

B. Common Names

1. Collapsed As-Built (CAB)
2. Windows Collapsed As-Built

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

3. But-For Analysis
4. Windows As-Built But-For
5. As-Built Less Delay
6. Modified As-Built
7. Look-Back Window

C. Recommended Source Validation Protocols

1. Implement SVP 2.2 (as-built validation),
2. Implement SVP 2.3 (update validation) and,
3. Implement SVP 2.4 (delay ID and quantification)

D. Enhanced Source Validation Protocols

1. Implement SVP 2.1 (baseline validation)

E. Minimum Recommended Implementation Protocols

1. The as-built schedule models from which the delays are extracted are CPM logic-driven as opposed to graphic as-built schedules. Therefore the calculated early start and early finish dates in the as-built schedule models match the actual start and actual finish dates and the collapsed schedules after delay extraction should also be CPM logic-driven.
2. Each change made to the as-built portion of the schedule for each time period to create the collapsed schedule is tabulated and justified.
3. There should be **at least** two base models, consisting of one based on a partially progressed schedule update and a second one based on a fully progressed schedule update or an as-built schedule.
4. The as-built schedule models should contain:
    a. As-built critical path activities found in implementing Subsection 4.3 including near-critical and near-longest paths.
    b. Baseline critical path and longest path.
    c. All contractual milestones and their predecessor chains.
    d. All chains of activities alleged by the respondent to have constituted critical claimant-caused delays or concurrent delays due to specific fault of the claimant.
    e. All delays for which contract time extensions were granted.
5. The collapsing process should not involve any adjustment to logic, including lag values, or removal of constraints unless each instance of such adjustment is specifically tabulated and the basis of such adjustment explained.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

6. Perform a constructability analysis of the resulting collapsed as-built schedules.

7. Reconcile all contract time extensions granted.

F. Enhanced Implementation Protocols

1. Reconcile the as-built and the collapsed as-built to the as-planned schedule.

2. Use all schedule activities found in the baseline schedule.

3. To account for periods during which work could not have progressed under the collapsed scenario, use a calendar simulating actual weather conditions.

4. Perform the analysis by modeling all schedule updates.

5. For each time period, create two models, one using hindsight progress rules, and the other using blindsight progress rules in modeling activities that were partially complete on the data date.

G. Identification of Critical and Near-Critical Paths for Each Periodic Update

Prior to the extraction of delays, pure computation of the criticality of a schedule activity under the collapsed as-built method is neither practical nor necessary. To fully verify the quantum of compensable delays, and to fully account for non-compensable concurrencies, the analyst must consider and extract the delays *and then* assess the criticality of the delay. This analogous critical path is used to identify the controlling activities of the collapsed as-built. See Subsection 3.9.K.5

Identification of the near-controlling path at this stage is not necessary if the significant set of as-built activities were properly selected when the as-built model was prepared.

The checklist for the identification of critical and near-critical paths is as follows:

- Identify and understand all related contractual language.
- Identify the negative float theory used by the opposing party.
- Identify and understand the implications of the choice of method, hindsight or blindsight, when modeling remaining durations of partially complete activities. (See Subsection 4.2.D.6)
- If necessary, identify the as-built controlling path(s) using Subsection 4.3.C.
- After extraction of delays, identify the analogous critical path (ACP). (See Subsection 3.9.K.5)

H. Identification and Quantification of Concurrent Delays and Pacing

As with MIP 3.8, even in its minimum implementation, concurrency analysis is built into MIP 3.9. Since the as-built, by definition, contains all delays that occurred on the activity paths modeled, to the extent that a subset of those delays are extracted, the post-extraction schedule still contains the impact of those delays that were left in the model, thereby accounting for the concurrent impact of those delays. Because of this, often the evaluation of pacing delays is a part of the extraction process. To what extent concurrent delays are evaluated is directly related to the significant set of activities that were integrated into the as-built model. However, the analyst must be aware that unlike MIP 3.8, this method contains a retrospective and a prospective portion within the logic-driven portion of each model. (See Figure 10).

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

The checklist for the identification of critical and near-critical paths is as follows:

- Determine whether compensable delay by contractor or owner is at issue.
- Identify and understand all related contractual language.
- For each delay event, distinguish the cause from the effect of delay.
- Determine whether literal or functional concurrency theory is to be used (see Subsection 4.2.).
- In a stepped extraction implementation, begin extraction with the delay event that is latest in time in the period being analyzed.
- Reconcile the total net variance between the as-built and the collapsed schedule by identifying the analogous critical path. (See Subsection 3.9.K.5)
- For each suspected pacing delay event, identify the parent delay(s) and establish the order of precedence between the parent delay and the pacing delay.
- For each suspected pacing delay event, evaluate whether enough resources could have been realistically employed to perform the paced activity within its original planned duration.

I. Determination and Quantification of Excusable and Compensable Delay

Identify and understand all contractual language related to delay apportionment and determine whether the contractual language would override any determination of excusability and compensability based on findings resulting from analyses performed under this RP.

Absent such overriding language, use the following procedure.

1. Excusable and Compensable Delay (ECD)

The difference between the as-built completion date and the collapsed as-built completion date resulting from the extraction of all owner-caused delays is the total ECD for each modeled time period. If the owner has paid the contractor specifically to accelerate, then any negative delay durations (delay mitigation) resulting from the owner-paid acceleration should be credited to the owner against the total ECD to avoid double payment to the contractor for acceleration. Where the quantification of the duration of the specific paid mitigation is not reasonably feasible, the credit adjustment may be accomplished by crediting the monetary value of the acceleration payment against the monetary value of the ECD.

2. Non-Excusable and Non-Compensable Delay (NND)

The difference between the as-built completion date and the collapsed as-built completion date resulting from the extraction of all contractor-caused delays is the total NND for each modeled time period. If the contractor accelerated or implemented other mitigating measures and the owner did not reimburse the contractor for the cost of mitigation, the net critical mitigation duration should be subtracted from the total NND.

3. Excusable and Non-Compensable Delay (END)

Because entitlement to END does not require that concurrency periods be eliminated, this method is too rigorous for quantifying END since it automatically accounts for concurrency. However, it can be said that the difference between the as-built completion date and the

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

collapsed as-built completion date resulting from the extraction of all owner-caused delays is *at least* the total END for each modeled time period.

J. Identification and Quantification of Mitigation / Constructive Acceleration

The subtractive modeling methods are not the best tools for identifying and quantifying specific instances of acceleration and delay mitigation, since the methods start with the as-built schedule that already incorporates all acceleration measures to the extent that they were actually implemented. When the delays are subtracted, the resulting schedule still retains all acceleration measures that were built into the as-built. Therefore, the resulting comparison is that of one accelerated schedule to another, albeit one without delays.

However, the subtractive modeling methods are one of the only tools to identify and quantify the overall extent to which the contractor's actual performance would have resulted in a project duration shorter than the baseline schedule, but for the delays. If the completion date of the collapsed update is earlier than that of the schedule update of the previous period, it can be claimed by the contractor that if allowed to proceed unhindered by delays, it was possible to finish earlier than originally planned. Whether the contractor would have decided to actually incur the necessary expenses to implement the acceleration measures absent delays must be proven independently of the schedule analysis.

K. Specific Implementation Procedures and Enhancements

1. Choice of Analysis Periods

a. Fixed Periods

The analysis periods are of virtually identical duration and may coincide with regular schedule update periods.

b. Variable Periods

The analysis periods are of varying duration and are characterized by their different natures such as the type of work being performed, the types of delaying influences, or the operative contractual schedule under which the work was being performed.

c. Fixed Periods vs. Variable Periods

Similar to the comparison between the all-periods implementation and the grouped-periods implementation for MIP 3.3, 3.4, and 3.5, a frequent-fixed-periods implementation yields more information than the infrequent-variable-periods implementation and is considered more precise.

2. Order of Analysis Periods

a. The extraction process may be started by the sequence of time periods, working from the first period to the last, or from the last period to the first. Neither approach is necessarily better than the other since each period is reconciled with the contemporaneous schedule updates. However, when an activity and any delay to that activity occurs over more than one period of time, and the analyst does not know exactly during which period the delay occurred, and the delay could have occurred in either or both periods, the overall delay result for the project may vary based on the approach to choosing the period. The analyst should develop a consistent convention, such as choosing the first period in which the delay could have occurred to extract the delay.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

3. Choice of Modeling Increments

a. Periodic Modeling

In periodic modeling, the logic-driven as-built schedule occupies the period starting with the day after the data date of the previous update and ending with the data date of the current update from which the as-built model is generated. The data date of the previous update remains the data date for the model. This data date will be referred to as the hard data date of the model in order to distinguish it from the soft data date which is the data date of the current update from which the model was generated. The soft data date is so named because the calculation discontinuity of the data date of the source update is blurred or softened in the continuous CPM logic spanning the source update data date, as shown in the diagram below.

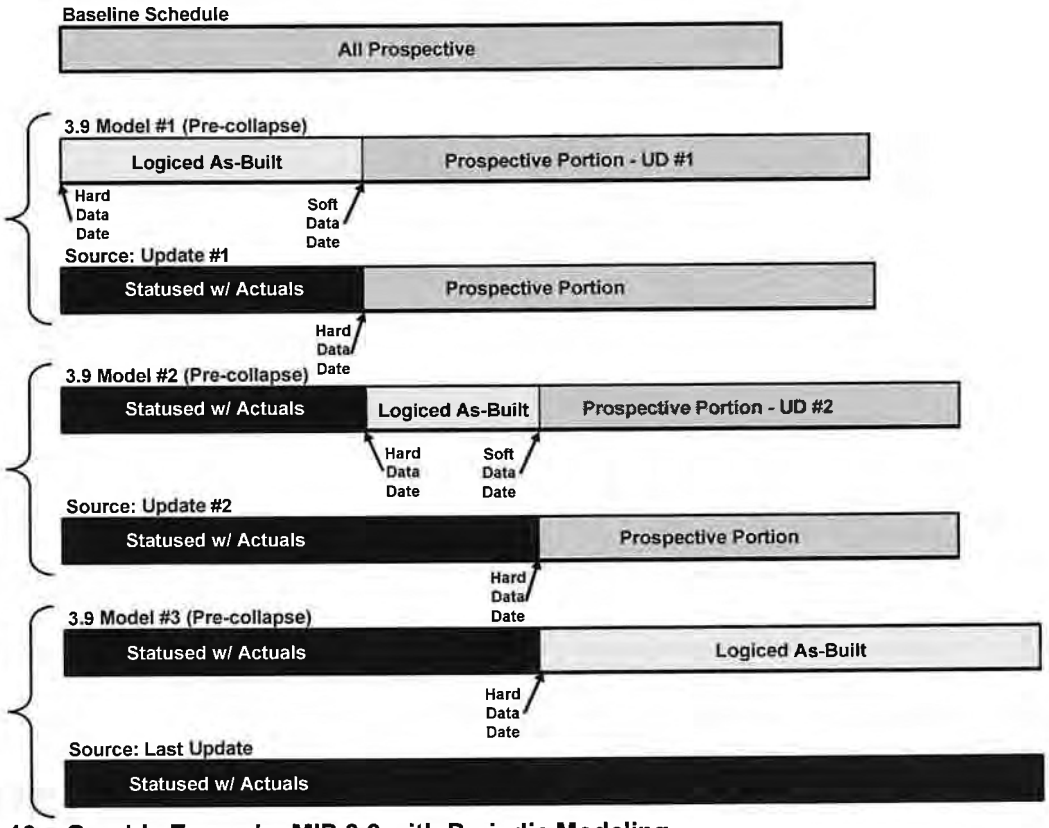


Figure 10 – Graphic Example: MIP 3.9 with Periodic Modeling

Hindsight progress rules are used to model the as-built at the hard data date of the model, since this point in time is already fully progressed in the source update. The analyst has a choice of rules, hindsight or blindsight, in modeling the as-built at the soft data date since on one hand, this point in time is the hard data date of the source update, but on the other hand, if the analysis is being performed after project completion, full as-built information is available. The difference in progress rules used for modeling may make a difference in the calculation of the critical path(s), near-critical paths, longest path(s), and the near-longest paths.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

b. Cumulative Modeling

In a cumulatively modeled set of MIP 3.9 as-builts, the hard data date is set for the first model, and all subsequent models use the same hard data date. In many cases the initial hard data date is the same as that of the baseline schedule. The soft data date of the models moves with the data date of the source updates. If the final source update is a fully progressed update, the final as-built model will be identical to a MIP 3.8 model based on a fully progressed update, as shown in the diagram below.

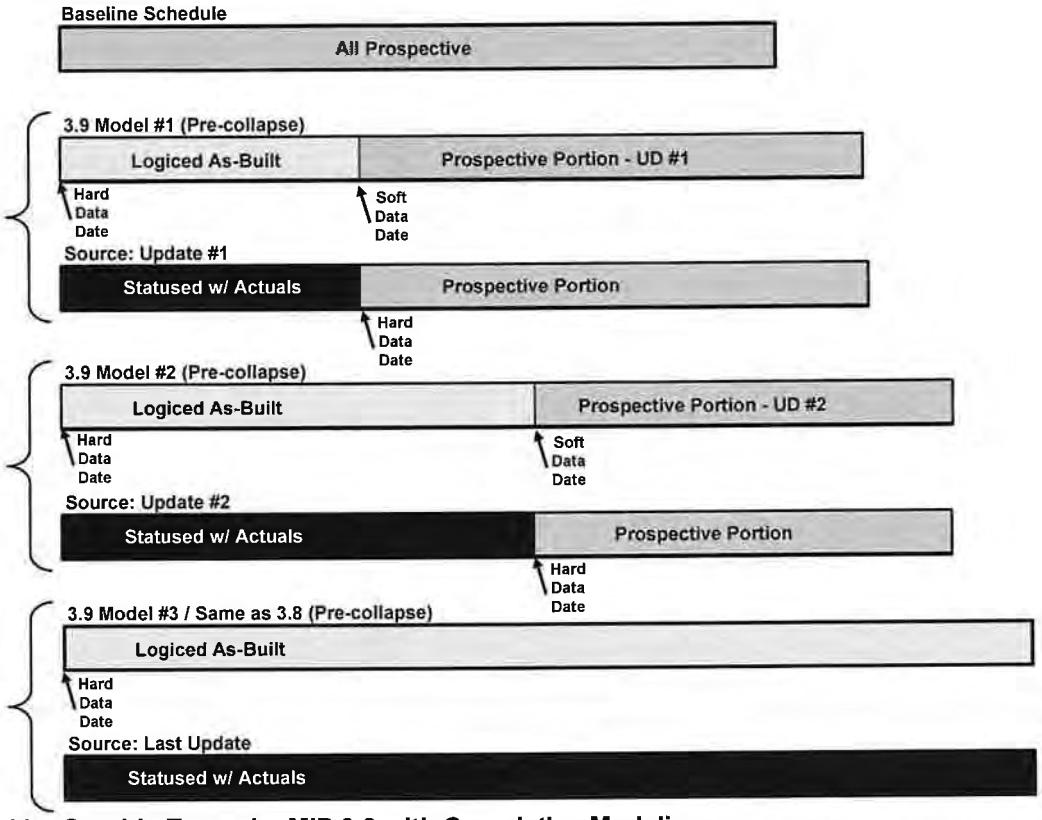


Figure 11 – Graphic Example: MIP 3.9 with Cumulative Modeling

As with the periodic modeled set of as-builts, the analyst has a choice of rules, hindsight or blindsight, in modeling the as-built at the soft data date since on one hand, this point in time is the hard data date of the source update, but on the other hand, if the analysis is being performed after project completion, full as-built information is available. The difference in progress rules used for modeling may make a difference in the calculation of the critical path(s), near-critical paths, longest path(s), and the near-longest paths.

4. Choice of Extraction Modes

a. Global Extraction

All the delay events and influences in each model are extracted together and the impact is determined on the combined effect of the extracted delays.

Copyright 2011 AACE® International, Inc.

b. Stepped Extraction

The delays are extracted individually or in groups, and the impact is determined after each iterative extraction. Stepped extraction should be in reverse chronological order of the occurrence of the delay event. This is the opposite of the order recommended for the additive MIP's, 3.6 and 3.7. In the additive methods, the base schedule contains no delays, so it makes sense to start the additive process chronologically. In MIP 3.9, the base schedules already contain all the delays. If extraction is performed chronologically, the iterative results would make no sense. For example, extracting the earliest delay first would create a schedule that still contains all the delays that occurred after the first delay.

5. Creating a Collapsible As-Built CPM Schedule

The procedure for creating a collapsible as-built schedule for each period analysis is the same as presented in Subsection 3.8.K.2, except that the process must be repeated for the relevant analysis period for each as-built schedule update.

6. Identification of the Analogous Critical Path (ACP)

The procedure for identifying the Analogous Critical Path for each period analysis is the same as presented in Subsection 3.8.K.3, except that the process must be repeated for the relevant analysis period for each as-built schedule update.

L. Summary of Considerations in Using the Minimum Protocol

- Accounts for changes in the prospective critical path for each schedule update utilized.
- Concept is intuitively easy to understand and present.
- Can isolate owner and/or contractor-caused delays if there is sufficient detail in the as-built schedule.
- Relies upon history of actual events.
- This method requires a baseline schedule and subsequent schedule updates in addition to the as-built schedule.
- Relatively few practitioners with significant, hands-on experience in properly performing this method.

M. Caveats in Using the Minimum Protocol / Conditions Requiring Enhanced Protocols

- Summarized as-built variation of the minimum protocol creates the potential for missing scope of work or the skewing of results of the analysis.
- Reconstructing the as-built schedule is very fact and labor intensive.
- Assignment of logic to mimic as-built conditions requires subjective decisions that sometimes do not match the contemporaneously planned logic relationships between activities.
- Susceptible to unintended or intended manipulation during as-built logic assignments.
- Not suited for identification or quantification of acceleration because the source as-built schedule already incorporates acceleration.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

- More time-consuming and hence more expensive to implement than other MIP's.

4. ANALYSIS EVALUATION

4.1 Excusability and Compensability of Delay
4.2 Identification and Quantification of Concurrency of Delay
4.3 Critical Path and Float
4.4 Delay Mitigation & Constructive Acceleration

The ultimate conclusion sought in forensic schedule analysis involving delay disputes is the determination and quantification of excusable delays along with the compensability of such delays. The analysis methods outlined in Section 3 are the tools used in reaching this ultimate conclusion[8]. This section describes the procedures for interpreting the results obtained from the use of the methods described in Section 3.

The process of segregating non-excusable, excusable, and compensable delays is referred to herein as *apportionment* of the responsibility for delay. Many jurisdictions in the United States and other countries prefer the use of critical path method (CPM) techniques for the purpose of apportionment of delay. This is in distinction to the use of other techniques such as bar-charts without network logic or by gross allocation of fault by percentage, often called the pie-chart method.

Subsection 4.1 was placed first so that the reader can gain an overview before delving into the underlying technical concepts. The analyst must be familiar with the concepts of concurrency of delay (Subsection 4.2), and criticality and float (Subsection 4.3) in order to fully understand the concepts in the first Subsection, 4.1. Therefore, for issues involving delay, the actual order of performance of the analysis interpretation protocol would be Subsection 4.3 first, then 4.2 followed by 4.1.

Constructive acceleration, along with recovery schedules, disruption, and delay mitigation are addressed in Subsection 4.4. Even if the project did not result in actual slippage of the completion date, these issues still generate disputes. Because the issues are intertwined with excusability of delay, they are discussed here in Section 4.

Be advised that differences in analysis methods combined with differences in concurrency and float theories may result in conflicting ultimate conclusions. The primary purpose of this section is to describe and explain the different theories in order to aid in the reconciliation of the conflicting conclusions.

4.1. Excusability and Compensability of Delay

A. General Rules[9]

Excusability exists where there is contractual or equitable justification in a claimant's request for a contract time extension for relief from potential claims for liquidated/stipulated or actual delay damages. The showing of excusability does not necessarily mean that the claimant is also entitled to compensation for the delay. Conversely, delay is *non-excusable* when such justification does not exist.

Compensability or *compensable delay* exists where the claimant is entitled to recover not only a time

[8] As a practical matter, delay analysis is just an intermediate step towards the ultimate question of financial liability. Thus, if agreement can be reached directly on the question of the specific amount of financial liability, the forensic schedule analysis leading to an apportionment of delay liability is moot.
[9] The contracting parties are free to depart from the general rule by mutual agreement as long as such agreement does not violate public policy.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

extension but compensation for expenses associated with the extension of completion date or the prolongation of the duration of work. Excusability is a prerequisite to compensability. Therefore, where compensability can be established, excusability is assumed.

B. Accounting for Concurrent Delay

In the absence of any contractual language or other agreements, the conventional rule governing compensability is that the claimant must first account for concurrent delays (see Subsection 4.2) in quantifying the delay duration to which compensation applies. That is, the contractor is barred from recovering delay damages to the extent that concurrent contractor-caused delays offset owner-caused delays, and the owner is barred from recovery liquidated/stipulated or actual delay damages to the extent that concurrent owner-caused delays offset contractor-caused delays.

The evaluation proceeds in two distinct steps. First, the liability for each delay event is individually analyzed[10]. The classification is made primarily according to the responsibility for the cause of the delay but may also consider the contractual risk allocation of the delay event regardless of the party who caused such delay. The second step consists of evaluating whether each delay event is concurrent with other types of delays to arrive at the final conclusion of excusability, compensability, or non-excusability.

As evident from the list of existing definitions, the current, common usage of the terms compensable, excusable, and non-excusable is confusing because analysts often use those terms to characterize the assignment of liability performed in the first step. For the purpose of this RP, the delays identified in the first step will be classified as: contractor delay, owner delay, or *force majeure* delay.

A *contractor delay* is any delay event caused by the contractor or the risk of which has been assigned solely to the contractor[11]. If the contractor delay is on the critical path, in the absence of other types of concurrent delays, the contractor is granted neither an extension of contract time nor additional compensation for delay related damages. Such a delay may expose the contractor to a claim for damages from the owner.

An *owner delay* is any delay event caused by the owner, or the risk of which has been assigned solely to the owner[12]. If the owner delay is on the critical path, in the absence of other types of concurrent delays, the contractor is granted both an extension of contract time and additional compensation for delay related damages.

A *force majeure delay* is any delay event caused by something or someone other than the owner (including its agents), or the contractor (or its agents), or the risk of which has not been assigned solely to the owner or the contractor. If the *force majeure* delay is on the critical path, the contractor is granted an extension of contract time but does not receive additional compensation for delay related damages even if there is a concurrent delay.

After liability is determined in the first step, the second step requires a determination of concurrency in accordance with Subsection 4.2. The various permutations of concurrency scenarios are summarized below in Figure 12 – *Net Effect Matrix*.

[10] Note that the forensic scheduling analyst may not possess the skill, knowledge, or experience to independently determine the legal liability for an event. In such a case, the first step consists of making a reasoned assumption of liability subject to verification by those with the requisite expertise.
[11] The SCL Delay & Disruption Protocol calls this a contractor risk event which is defined as an event or cause of delay which under the contract is at the risk and responsibility of the contractor. SCL also calls it a non-compensable event.[1]
[12] The SCL Delay & Disruption Protocol calls this an employer risk event which is defined as an event or cause of delay which under the contract is at the risk and responsibility of the employer (owner). SCL also calls it a compensable event.[1]

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

Delay Event	Concurrent with	Net Effect
Owner Delay	Another Owner Delay or Nothing	Compensable to Contractor, Non-Excusable to Owner
Owner Delay	Contractor Delay	Excusable but Not Compensable to both Parties
Owner Delay	Force Majeure Delay	Excusable but Not Compensable to both Parties
Contractor Delay	Another Contractor Delay or Nothing	Non-Excusable to Contractor, Compensable to Owner
Contractor Delay	Force Majeure Delay	Excusable but Not Compensable to both Parties
Force Majeure Delay	Another Force Majeure Delay or Nothing	Excusable but Not Compensable to Contractor

Figure 12 – Net Affect Matrix – Concurrent Delay

There are two alternatives if there are more than two parties among which the delay must be apportioned depending on whether the additional parties are distinct signatories to the subject contract or whether the parties are agents and therefore subsumed under the two primary parties.

Under the first alternative there would be another factor added to the above matrix. But, the principle used to derive the net effect would be the same. Namely, in order to be entitled to compensation the party must not have caused or otherwise be held accountable for any concurrent delay and concurrent *force majeure* delays.

Under the second alternative involving agents to the two primary parties such as subcontractors, suppliers, architects, and construction management firms, the net effect equation should be solved first between the two primary parties. This is followed by a subsidiary analysis apportioning the quantified delay allocation established by the first analysis.

C. Equitable Symmetry of the Concept

Note that the terms compensable, excusable, and non-excusable in current industry usage are from the viewpoint of the contractor. That is, a delay that is deemed compensable is compensable to the contractor but non-excusable to the owner. Conversely, a non-excusable delay is a compensable delay to the owner since it results in the collection of liquidated/stipulated damages.

A neutral perspective on the usage of the terms often aids understanding of the parity and symmetry of the concepts[13]. Thus entitlement to compensability, whether it applies to the contractor or the owner, requires that the party seeking compensation shows a lack of concurrency if concurrency is alleged by the other party. But for entitlement to excusability without compensation, whether it applies to the contractor or the owner, it only requires that the party seeking excusability show that a delay by the other party impacted the critical path.

Based on this symmetry, contractor entitlement to a time extension does not automatically entitle the contractor to delay compensation. The contractor would first have to show that an owner delay impacted the critical path, and then if the owner defends alleging concurrent delay, the contractor would have to show the absence of concurrent delays caused by a contractor delay or a *force majeure* delay in order to be entitled to compensation.

[13] Especially in the absence of contractual provisions to the contrary. For example, depending on the contract language and applicable law, the applicable tests for the recovery of actual delay damages may be different from that applicable to the owner's right to liquidated/stipulated damages.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

A contractor delay concurrent with many owner delays would negate the contractor's entitlement to delay compensation. Similarly, one owner delay concurrent with many contractor delays would negate the owner's entitlement to delay compensation, including liquidated/stipulated damages. While in such extreme cases the rule seems draconian, it is a symmetrical rule that applies to both the owner and the contractor and hence ultimately equitable.

4.2. Identification and Quantification of Concurrent Delay

A. Relevance and Application

Projects are frequently delayed by multiple impacts and by multiple parties. The concept of concurrent delay is based upon the premise that when multiple parties independently contribute to an impact to the critical path, the party or parties causing the event should be responsible for their share of that project critical path impact. There can be concurrent delays between separate delay events both caused by the same party. However, in such case there is effectively no need for a concurrency analysis. Throughout this Recommended Practice, it has been assumed that concurrency exists only when it is caused by at least two separate parties or between at least one party and a force majeure event. While the allocation and distribution of concurrent delay impacts should always be based upon the terms and conditions of the contract, most contracts are silent on the subject of concurrent delay. This section is intended to identify and facilitate the calculation and apportionment of concurrent delay impacts.

Typically, Owners assess liquidated/stipulated damages for non-excusable delay and Contractors claim entitlement to extended overhead reimbursement for compensable delay. In each case, the damages are typically calculated on the basis of a daily unit rate. Under most concurrent delay applications however, the Owner and Contractor time-related damages are not offset against each other when concurrent delay can be demonstrated. Typically, when both Contractor and Owner are concurrently responsible for an extended period of performance, the Contractor is granted an extension of contract time without compensation and the Owner forgoes the collection of liquidated/stipulated damages. No time-related compensation flows from either party to the other. Generally, therefore, substantial incentive exists for:

1. The Contractor to demonstrate concurrent excusable delay during a period likely to be considered non-excusable delay; and
2. The Owner to demonstrate concurrent non-excusable delay during a period likely to be considered excusable delay.

Accordingly, both Owners and Contractors frequently contend that concurrent delays offset each other as a defense to excuse their potential liability to compensate the other party for time related costs.

The identification and quantification of concurrent delay is arguably the most contentious technical subject in forensic schedule analysis. Accordingly, it is important that all sides, if possible, agree on either the Literal or Functional theory (See Subsection 4.2.D.1.) employed in the identification and quantification of concurrent delay. Failing that, the analyst should be aware of the theory adopted by the opposing party.

B. Various Definitions of Concurrency

AACE Recommended Practice No. 10S-90 *Cost Engineering Terminology,* lists five different but similar definitions for concurrent delay.[4] As discussed more fully in the sections that follow, the five definitions reflect some of the differing opinions and applications associated with concurrent delay. The apparent contradictions underscore why this has become one of the most contentious areas of

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

forensic schedule delay analysis.

(1) Two or more delays that take place or overlap during the same period, either of which occurring alone would have affected the ultimate completion date. In practice, it can be difficult to apportion damages when the concurrent delays are due to the owner and contractor respectively.

(2) Concurrent delays occur when there are two or more independent causes of delay during the same time period. The "same" time period from which concurrency is measured, however, is not always literally within the exact period of time. For delays to be considered concurrent, most courts do not require that the period of concurrent delay precisely match. The period of "concurrency" of the delays can be related by circumstances, even though the circumstances may not have occurred during exactly the same time period.

(3) True concurrent delay is the occurrence of two or more delay events at the same time, one an employer risk event, the other a contractor risk event and the effects of which are felt at the same time. The term 'concurrent delay' is often used to describe the situation where two or more delay events arise at different times, but the effects of them are felt (in whole or in part) at the same time. To avoid confusion, this is more correctly termed the 'concurrent effect' of sequential delay events.

(4) Concurrent delay occurs when both the owner and contractor delay the project or when either party delays the project during an excusable but non-compensable delay (e.g., abnormal weather). The delays need not occur simultaneously but can be on two parallel critical path chains.

(5) The condition where another delay-activity independent of the subject delay is affecting the ultimate completion of the chain of activities.

The existence of a contractual definition is a major factor on the determination of concurrency. As stated in the previous subsections, contracting parties are free to mutually agree on any method or procedure as long as those agreements are legally enforceable. Therefore, the general rules, exceptions, and considerations in this RP are applicable to the extent that they do not directly contradict contractual definitions and specifications.

C. Pre-Requisite Findings Concerning the Delays Being Evaluated for Concurrency

Before evaluation of concurrency, there must be:

- Two or more delays that are unrelated, independent, and would have delayed the project even if the other delay did not exist;
- Two or more delays that are the contractual responsibility of different parties, but one may be a force majeure event.;
- The delay must be involuntary; and,
- The delayed work must be substantial and not easily curable.

1. Two or More Delays that are Unrelated and Independent

Concurrent delays occur when two or more unrelated and independent events delay the project. When two or more parties contribute to a single delay to the project and the causation is linked or related, the event is not considered to have two concurrent causes. The distinction between concurrent delay and mutually-caused delay is a subtle, yet a vitally important distinction that each analyst must observe and reconcile.

There must be at least two independent delay events. The first event, for example, could be the Owner's failure to timely approve the purchase of a piece of Owner-furnished equipment. The second and potentially concurrent event could be the Contractor's failure to advance steel erection sufficiently

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

to support the installation of that equipment. These two independent events are often separate, co-critical network paths, but they need not be in order to be candidates for a concurrent delay. The delay events could affect the same activity, but must be independent.

Care must be taken to ensure the events are truly independent. In the example above, the facts *might* show that the steel was not erected timely because the Contractor knew the equipment was going to be late. In such a case, the "two" delay events are actually one – they are both caused by the Owner's failure to timely approve the purchase of a piece of equipment.

2. Two or More Delays that are the Contractual Responsibility of Different Parties

The application of concurrent delay theory is only relevant when the delays are the responsibility of different parties or one of the delays is a force majeure event. Since the concept of concurrency has both a legal and a technical component, the concurrent events must contractually be the responsibility of separate parties. The parties are typically the Owner and the Contractor. Some contracts contain language assigning responsibility or contractual risk for certain types of events such as differing site conditions and force majeure events. Such risk assignment may impact the liability of events causing concurrent delay.

If one of the delay events is contractually assigned to neither or both parties, such as a force majeure event, the effective result is the same as concurrency; it is excusable and non-compensable to either party. Generally, whenever a force majeure event occurs, it *trumps* any other concurrent delay that might have occurred. This serves two purposes: first, it can eliminate or reduce significant proof problems that might arise in establishing responsibility, and second, it promotes equity, since one of the delays is beyond the control and responsibility of the either of the parties.

3. The Delay Must Be Involuntary

A delay that otherwise meets the requirements of concurrency, but is performed voluntarily is generally considered pacing. If the delay could have been easily cured, but was not, the delay would be considered voluntary. See Subsections 4.2 E and F below.

4. The Delay Must Be Substantial and Not Easily Curable

This requirement comports with common sense. If one of the delays is associated with a minor element of work that could easily be performed, that work should not create a concurrent delay. This element is closely allied with the involuntary nature of truly concurrent delays cited above.

D. Functional Requirements Establishing Concurrency and the Factors that Influence Findings

Having satisfied the four requirements on the nature of the subject delay events being evaluated for concurrency, there are two major functional requirements relating to the relationship of the delays.

- The delays must occur during or impact the same time analysis period.
- The delays, each of which, absent the other, must independently delay the critical path.

The first functional requirement that the delays must occur during or impact the same analysis time period is intuitively obvious, but difficult to absolutely satisfy. This is due to the fact that absolute, literal concurrency is an unachievable goal since time is infinitely divisible. It is more a function of the planning unit used by the schedule or the verification unit used in the review of the as-built data. For example, upon further examination, a pair of events that were determined to have occurred concurrently on a given day may not be literally concurrent because one occurred in the morning and the other in the afternoon. This condition seldom occurs since most construction schedules use the

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

day as the smallest measurement of time.

The second functional requirement is that each concurrent delay event must, absent the other, delay the timely completion of a completion milestone. Such independent events must also be on the critical path or near critical path, depending on the time analysis period and the concurrency theory being used. For example, assume that a forensic analysis confirms that the late installation of drywall caused a critical path delay to the completion of the project. This work was critical to the commencement of final painting and interior trim work. Further assume that the delay in the drywall was the result of two factors: first, the general contractor failed to procure its drywall subcontractor in a timely manner and second, there was a severe shortage of drywall to the region. These events are unrelated, but either one of them would have delayed the overall completion of the drywall. This test is sometimes called the "but-for" test. But-For the failure to procure the drywall subcontractor, the work would still have been late because of the shortage of materials.

Findings of concurrency analysis to determine compliance with these functional requirements are highly dependent on several factors, all of which are dictated by discretionary choices made by the analyst in the course of analysis – these choices should be well documented as part of the analysis. There are at least six factors, each discussed in detail below, that influence the determination of these two conditions:

- Whether concurrency is determined literally or functionally
- Whether criticality is determined on least-value float or less-than-one float value
- Whether concurrency is determined on the cause or the effect of delay
- The frequency, duration and placement of the analysis interval
- The order of delay insertion or extraction in a stepped implementation
- Whether the analysis is done using full hindsight or blindsight (knowledge-at-the-time).

There is no consensus on the many factors that affect the identification and quantification of concurrency. The one thing that seems to be universally accepted is that reliable identification and quantification of concurrency must be based on CPM concepts, particularly distinguishing critical from non-critical delays. Gross concurrency, or the method of counting concurrent delay events based purely on contemporaneous occurrence without regard to CPM principles, is typically not a sufficient basis for concluding that a delay is not compensable.

1. Literal Concurrency vs. Functional Concurrency

There are two different theories regarding the exact timing of the two or more delays that are candidates for concurrency. Under the Literal Theory, the delays have to be literally concurrent in time, as in "happening at the same time." In contrast, under the Functional Theory, the delays need to be occurring within the same analysis period.

Of the two, the functional theory is more liberal in identifying and quantifying concurrency since the delays need only occur within the same measurement period, while in the literal theory, only delays require same-time occurrence. The assumption made by the functional theory practitioner is that most delays have the potential of becoming critical, once float on the path on which they resides has been consumed.

An advocate of *functional concurrency* believes that if the two delays occur within the same measurement period [usually a month] they can be concurrent. For example, analyses that are based upon monthly update submissions will manifest delay only at the end of the month. It is quite possible therefore, that an Owner-caused delay occurring in the first week of the update period may appear concurrent with a Contractor-caused delay occurring in the last week of the update period. These delay events could nonetheless be concurrent so long as the other tests are met. Accordingly, the functional application of concurrent delay theory does not necessarily require the delay events to

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

occur on the same days.

This type of functional concurrency is closely attuned to delay methodologies that use modeled CPM schedules as their basis and utilize some form of time period analysis. Since these analyses measure delay at the end of time periods [typically the status updates] it makes sense to measure concurrency under this methodology at the same points, rather than trying to develop a separate concurrency analysis. Accordingly, the functional application of concurrent delay theory does not necessarily require the delay events to occur at the same time. In addition, the functional theory allows that CPM schedules, even if properly maintained, are not perfect, and near critical delays may in fact be concurrent.

The literal theory will result in the identification of fewer concurrent delays, since delays are dropped from the list of suspects if they do not share real-time concurrency. Since the literal theory is based on the general notion that concurrent delays must be on the critical path and occur at the same time (usually measured at a day interval), findings of concurrency are exceedingly rare.

An advocate of *literal concurrency* prefers to view concurrency in the context of day-to-day performance. Under this theory, if the first delay started on day one, and the second delay started on day two, they would not be concurrent – the delay associated with the first event would create float in the entire project so the second delay could not also be on the co-critical path. In the case where two independent delay events act on the same activity, the same rational applies: the first delay event causes the delay, while the second does not. *Literal* concurrency generally identifies fewer concurrent delays than *functional* concurrency. Since *literal* concurrency requires the delay events to occur at the same time and *functional* concurrency only requires that the events occur within the same measurement period, it is very likely that more concurrency will be recognized under the *functional* theory. The *literal* theory requires the forensic analyst to look inside a monthly update. In one sense, this approach vitiates the analysis of monthly progress because the status depicted at the end of the month is insufficient.

The difference in outcome between the literal and functional theory is significant. Given the same network model, the literal theory practitioner will find less concurrency -- many more compensable delays for both parties. The functional theory practitioner will find many of those delays to be concurrent and hence excusable but, depending on the terms of the contract, non-compensable for both parties. It is also possible that the ultimate outcome may be similar when, under the literal theory, the compensation due one party is cancelled by the compensation due the other party. The only significant difference, despite the fact that the canceling effect (functional) operates under both theories, is the timing of the canceling effect and its impact on the damage calculation (literal).

Under the literal theory, an owner delay and a contractor delay of equal duration, occurring at different times are calculated as a period of compensable delay for the owner and a separate period of compensable delay of equal length for the contractor. The two periods will neither cancel each other out in time, nor money, since the contractor is likely to get a time extension for the owners delay and it is unlikely the owner's liquidated/stipulated damages rate will not be equal to the contractor's extended project rate. So, despite the apparent canceling effect, there is still potential of award of compensability to one side or the other. In contrast, under the functional theory, the canceling effect is realized *before* calculation of damages; hence there will be no offsetting calculation for damages.

The functional theory also recognizes the real-world limitations of exactly measuring delays and limitations of scheduling accuracy. While CPM schedules measure activities and events to the day, it is often difficult to retrospectively identify, with the exactitude of a day, the events on a project. By measuring possible concurrent delays with a measurement period larger than a day, the functional theory accommodates this real-world limitation. At the same time as the measurement period expands, it is likely that more delays will get treated like concurrent delays.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

When evaluating the relevance of the time period, it is important to consider whether the concurrency analysis is being performed contemporaneously or forensically. Concurrent Delay analysis is frequently applied on projects that are still under construction because the full scope of the impact may not yet be known. Both parties to a construction contract often recognize that a full and final settlement of delay on a contemporaneous basis is not only compliant with the terms of the contract, but it provides a means to effectively balance risk on delays that are not yet complete. Contemporaneous analyses therefore, are often more *functional* than they are *literal.* When delay analyses are performed forensically, however, the standard-of-care increases because the settlement is likely to be based on technical proof rather than mid-project business decisions. Accordingly, forensic concurrency analyses are more likely to be *literal* in nature.

2. Least Float vs. Negative Float

The use of Negative Float or Longest Path Theory (Subsection 4.3.A.2.) for identification of critical activities can have a profound effect on the calculation of concurrent delay. The disparity stems from divergent approaches to criticality. Virtually all forensic delay methodologies provide for extensions of contract time on the critical path only. Therefore, the definition of the critical path is of utmost importance.

The Negative Float Theory assumes criticality on any activity that has negative total float relative to a contractual milestone. There is a certain practicality to this approach since most parties working from a CPM schedule will generally move to advance any activities that have negative total float because they are all essential to the maintenance or recovery of project delay.
The Longest Path Theory provides for criticality on the longest path only, even if other secondary paths are late with regard to a contractual milestone. Under the Longest Path Theory, all paths shorter than the longest path (even those with negative total float) have positive total float with respect to the longest path and are therefore not critical. In contrast, under the Negative Float Theory, any delays, occasioned by negative total float, occurring during the same measurement period are potential candidates for concurrency.

Concurrency analyses should always be consistent with the contract's definition of criticality. While it is beyond the scope of this document to catalogue the variations in contractual specifications, one relatively common definition is worth mentioning. Namely, some contracts include in the definition of concurrent delay that it cause a critical path delay. The requirement that the concurrent delay be critical, in effect, excludes other delay events with float values greater than the critical path from being evaluated for offsets against compensable delays. This view comports with the Literal Theory. It can be argued that absent such contract definition, non-critical delays can be used to offset compensable delay on a day-for-day basis after the expenditure of relative float against the critical path. This view comports with the Functional Theory.

3. Cause of Delay vs. Effect of Delay

Another philosophical dichotomy that complicates the evaluation of concurrency is the difference between the proximate (immediate) cause of the delay and effect of the delay.

For example, assume a schedule activity with a planned duration of five days experiences work suspensions on the second day and the fifth day, thereby extending the duration by two days. The delaying events are on the second and the fifth day, but the delay-effect is on the sixth and the seventh day. The differences become much larger on activities with longer planned durations that experience extended delays. A good example would be delayed approval of a submittal that stretches for weeks and months.

The philosophical difference rests on the observation by the delay-effect adherents that there is no 'delay' until the planned duration has been exhausted. In contrast, the delay-cause adherents

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

maintain that the identification of delay should be independent of planned or allowed duration, and instead should be driven by the nature of the event. The disadvantage of the delay-cause theory is that if there are no discrete events that cause a schedule activity to exceed its planned duration, it would have to fall back to the delay-effect method of identifying the delay. Conversely, in cases where the delay was a result of a series of discrete events, the delay-effect method of chronological placement of delay would often be at odds with contemporaneous documentation of such discrete events.

The difference in outcome is pronounced under the literal theory, since it affects whether or not a delay is identified as concurrent. Under the functional theory the significance to the outcome depends on whether the analyst is using a static method (MIP 3.1, 3.6 or 3.8) or a dynamic method (MIP 3.2, 3.3, 3.4, 3.5, 3.7 or 3.9). Using a static method, the cause-effect dichotomy makes no difference because the entire project is one networked continuum. But using a dynamic method, it does make a difference because the chronological difference between the cause and effect may determine the analysis interval in which the delay is analyzed.

There are two solutions to reconcile this potential dichotomy between the static and dynamic methods. One solution is to use the cause theory where discrete delay events are identifiable and to use the effect theory where there are no identifiable discrete events that led to the delay. But note that in many cases the identification of discrete causes is a function of diligence in factual research, which is in turn dictated by time and budget allowed for the analysis. The second solution is to review the delay on an activity basis and not to review the events on a daily basis within the event. This solution comports with the reality that delays that occur at the outset of an activity may be made up during the performance of that activity.

4. Frequency, Duration, and Placement of Analysis Intervals

Analysis interval refers to the individual time periods used in analyzing the schedule under the various dynamic methods (MIP 3.2, 3.3, 3.4, 3.5, 3.7 and 3.9). The frequency, duration and the placement of the analysis intervals are significant technical factors that influence the determination of concurrency. The significance of the analysis interval concept is also underscored by the fact that it creates the distinction in the taxonomy between the static versus the dynamic methods. The static method (MIP 3.1, 3.6, or 3.8) has just one analysis interval, namely the entire project, whereas the dynamic model segments the project into multiple analysis intervals.

a. Frequency and Duration

Concurrency is evaluated discretely for each analysis interval. That is, at the end of each period, accounting of concurrency is closed, and a new one opened for the next period. This is especially significant when analysis proceeds under the functional theory of concurrency in cases where two functionally concurrent delay events, one owner delay and the other a contractor delay, are separated into separate periods. If those delay events were contained in one period, they would be accounted together and offset each other. When they are separated, they would each become compensable to the owner and the contractor respectively. The analyst is recommended to analyze multiple-period events in both separate periods and combined periods to achieve the most accurate results.

However, the distinction between the functional and the literal theories does not disappear automatically with the use of multiple analysis intervals. Two delay events separated by time within one analysis interval will still be treated differently depending on which theory is used. The distinction becomes virtually irrelevant only when the duration of the analysis interval is reduced to a single day.

When multiple analysis intervals are used an additional dimension is added to the canceling

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

effect that was discussed in the comparison of the literal theory to the functional theory. As stated above, the separation of two potential concurrent delay events into different analysis intervals causes the functional theory to behave like the literal theory. Because the change from one period to another closes analysis for that period and mandates the identification and quantification of excusable, compensable and non-excusable delays for that period, it is only after all the analysis intervals, covering the entire duration of the project, are evaluated that reliable results can be obtained by performing a 'grand total' calculation. In other words, the ultimate conclusion cannot be reached by selective evaluation of some, but not all, analysis intervals.

b. Chronological Placement

The general rule that all the intervals be evaluated will ensure the reliability of the net result. But the analyst can still influence the characterization of the delays by determining the chronological placement of the boundaries of the intervals, or the cut-off dates.

There are two main ways that the analysis intervals are placed. The first method is to adopt the update periods used during the project by using the data dates of the updates, which are usually monthly or some other regular periods dictated by reporting or payment requirements. The other is the event-based method in which the cut-off dates are determined by key project events such as the attainment of a project milestone, occurrence of a major delay event, change in the project critical path based on progress (or lack thereof), or a major revision of the schedule. Event-based cut-off dates may not necessarily coincide with any update period.

The most distinguishing feature of the event-based placement of cut-off dates is that there is significant independent judgment exercised by the forensic analyst in choosing that time period. Because the cut-off date is equivalent to the data date used for CPM calculation, it heavily influences the determination of criticality and float, and hence the identification and quantification of concurrent delays. Also, as stated above, the placement of cut-off date plays a major role in how the canceling effect operates.

5. Order of Insertion or Extraction in Stepped Implementation

In a stepped insertion (MIP 3.6, and 3.7) or extraction (MIP 3.8, and 3.9) implementation, the order of the insertion or extraction of the delay may affect the identity of potentially concurrent delays and their quantification.

As a general rule, for additive modeling methods where results are obtained by the forward pass calculation, the order of insertion should be from the earliest in time to the latest in time. For subtractive modeling methods the order is reversed so that the stepped extraction starts with the latest delay event and proceeds in reverse chronological order.

There are other systems, such as inserting delays in the order that the change orders were processed, or extracting delays grouped by subcontractors responsible for the delays. In all these seemingly logical schemes if chronological order of the delay events is ignored, the resulting float calculation for each step may not yield the data necessary for reliable determination of concurrent delays.

6. Hindsight vs. Blindsight

The difference between the prospective and the retrospective modes was addressed in Section 1. In this section however, we are reviewing two ways to view historic events in retrospective analysis. The first is "hindsight," where the analysis uses all the facts, regardless of the contemporaneous knowledge, in determining what occurred in the past. The second is "blindsight" where the analysis evaluates events as-if standing at the contemporaneous point in time, with no knowledge of

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

subsequent events. This RP deals primarily with the retrospective mode of analysis. The determination of concurrency made prospectively during the project is usually done using the functional theory so as to resolve potential concurrencies as they occur –essentially blindsight. However, such determinations may be discovered to be incorrect in hindsight using retrospective information. Thus, in the context of forensic schedule analysis, the analyst must be aware of the difference when reconciling the results of the retrospective analysis utilizing full hindsight with findings made during the project when the future was unknown.

The one place where this difference becomes technically relevant in the practice of forensic schedule analysis is in rectifying and reconstructing schedule updates (MIP 3.5 and 3.9). Specifically, the assignment of remaining duration to each partially progressed activity is highly dependent on whether the approach is hindsight or blindsight. Because CPM calculation of schedule updates depends, in part, on the value of remaining duration of activities at the data date, the difference in approach may affect the identification and quantification of concurrent delays.

In the Figure below, Activity A has an original duration of 21 work days, starts several days after the first Monthly Status Update, and has been in progress 20 work days at the time of the second Monthly Status Update.

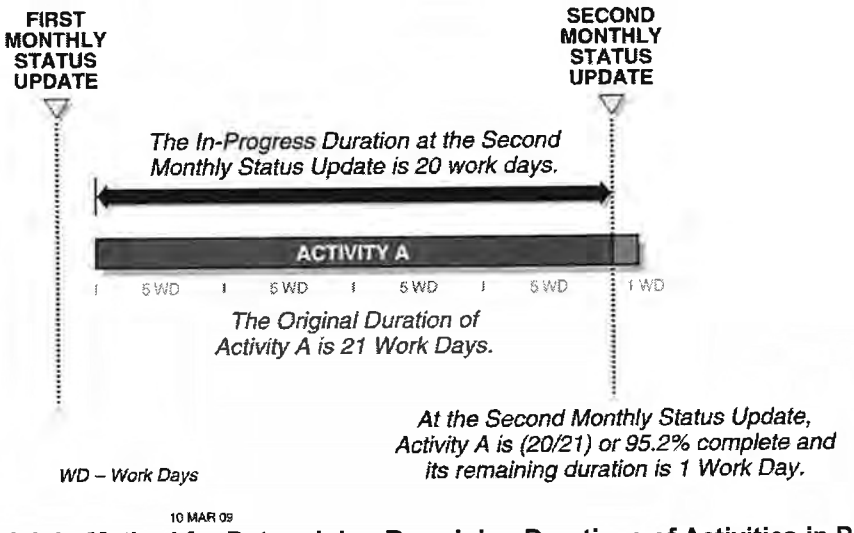


Figure 13 - Blindsight Method for Determining Remaining Durations of Activities in Progress

Using the Blindsight method, and not knowing that any delay had occurred during the first 20 work days of progress, the remaining duration could be said to be only one work day at the time of the second Monthly Status Update. It would not be known until the activity was complete after the second Monthly Status Update that it's as-built duration was 25 work days.

The next figure below illustrates the remaining duration of an activity using the hindsight method:

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

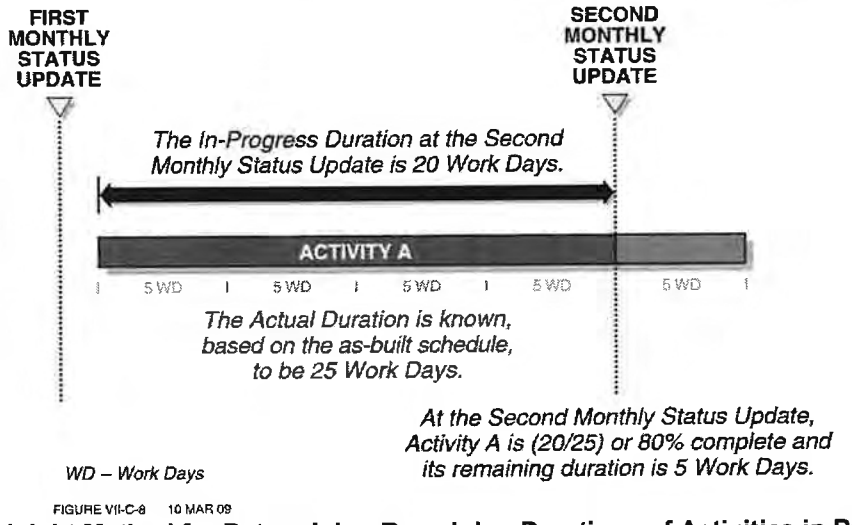


Figure 14 - Hindsight Method for Determining Remaining Durations of Activities in Progress

In this example, the same Activity A, which had an original duration of 21 work days, starts several days after the first Monthly Status Update, and based on the as-built data, finishes with an actual duration of 25 work days. The second Monthly Status Update occurs after 20 work days of progress on Activity A have occurred. Therefore, the analyst would conclude that the Activity A is 80 percent complete at the second Monthly Status Update, and would have a Remaining Duration of 5 work days at that time.

There is no prevailing practice, let alone agreement, on which practice ought to be used in the reconstruction of schedule updates. On one hand, the hindsight supporters maintain that it serves no purpose to ignore best available evidence and recreate updates, pretending that the as-built information does not exist. On the other hand, the blindsight supporters argue that the very purpose of reconstructing schedule updates is to replicate the state of mind of the project participants at the time of the update, because project decisions were made based on best available information at the time.

It is recommended that both approaches be evaluated in cases where difference in approach results in a significance variance.

E. Defining the Net Effect of Concurrent Combinations of Delay

If the contract documents are silent with regard to delay event definition, they are also likely to be silent on the net effect of concurrent combinations of delay. Under the foregoing delay definitions, there are just three potential combinations of discrete delay events. The following figure assumes the more common contractual situation where Force Majeure events are excusable but non-compensable events.

In the absence of specific contract language to the contrary, this Recommended Practice suggests the following protocol:

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

Delay Event 1		Delay Event 2	Net Effect
Force Majeure Delay [Time / No Compensation for Extended Overhead / No Liquidated/stipulated Damage Assessment]	concurrent with	**Contractor Caused Delay** [No Time / No Compensation for Extended Overhead / Liquidated/stipulated Damage Assessment]	**Excusable** [Time / No Compensation for Extended Overhead / No Liquidated/stipulated Damage Assessment]
Force Majeure Delay [Time / No Compensation for Extended Overhead / No Liquidated/stipulated Damage Assessment]	concurrent with	**Owner Caused Delay** [Time / Compensation for Extended Overhead]	**Excusable** [Time / No Compensation for Extended Overhead / No Liquidated/stipulated Damage Assessment]
Contractor Caused Delay [No Time / No Compensation for Extended Overhead / Liquidated/stipulated Damage Assessment]	concurrent with	**Owner Caused Delay** [Time / Compensation for Extended Overhead]	**Excusable** [Time / No Compensation for Extended Overhead / No Liquidated/stipulated Damage Assessment]

Figure No. 15 - Net Effect of Potential Concurrent Delay Combinations

Each of the foregoing conditions may result in an excusable, non-compensable delay (depending on the terms of the contract), which in turn typically results in at least four findings and remedies:

- Neither party benefits monetarily from the delay.
- The sole remedy for the delay is an extension of time.
- The right to compensation for either party is deemed offset by the compensation to the other party.
- The delay is treated as excusable and not within the control of either party.

F. Pacing

Pacing occurs when one of the independent delays is the result of a conscious, voluntary and contemporaneous decision to pace progress against the other delay. The quality that distinguishes pacing from concurrent delay is the fact that pacing is a conscious choice by the performing party to proceed at a slower rate of work with the knowledge of the other contemporaneous delay, while concurrent delays occur independently of each other without a conscious decision to slow the work.

By pacing the work, the performing party is exercising its option to reallocate its resources in a more cost effective manner in response to the changes in the schedule caused by the other parent (non-pacing) delay and thereby mitigating or avoiding the cost associated with the resource demands. There may be no need to maintain the original schedule in the face of a known delay caused by the other party – no need to 'hurry up and wait'. In other words, it is the consumption of float created[14] in the pacing activity by the occurrence of the parent delay. Pacing delay is a real-life manifestation of the principle that work durations expand to fill the time available to perform them. It can take many forms. Work can be slowed down, resulting in extended work durations, or temporarily suspended, or performed on an intermittent basis. Whatever form it takes, the key is that it results from the performing party's reasoned decision to keep pace with another activity, which is called the parent delay, which is experiencing a delay.

[14] The term 'creation' should not be interpreted to mean that total float is increased. In fact, the opposite is true. The parent delay adversely impacts the overall critical path of the project, thereby decreasing total float. What it creates (increases) is relative total float on the path of the paced activity relative to the total float on the path carrying the parent delay.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

There are two distinct circumstances to which the term, pacing delay, is often applied. The first circumstance, often referred to as direct pacing, occurs where the duration of a schedule activity is extended due to a delay in a predecessor activity on which the progress of the subject activity is directly dependent. An example would be the pacing of electrical conduit rough-in when the duration of metal stud installation is extended by delays. In such a case, because there is not enough work to sustain the continuous utilization of a full crew, the electrical subcontractor may order a crew size reduction, by temporarily reassigning some workers to other areas, slowing the progress. In either case it extends the overall duration of electrical rough-in. Although this is definitely pacing, it is not considered a pacing delay because the two activities are sequential and not concurrent.

The second type of pacing delay is where the paced activity has no direct dependency on the parent delay activity, sometimes called indirect pacing. The fact that it shares the same time frame is a function of schedule timing as opposed to construction logic. An example of this type of pacing would be the landscaping subcontractor who demobilizes its crew and returns at a later time because critical path work in the building has been delayed.

In this type of pacing, the sole relationship of the paced activity to the parent delay is the fact that the parent delay creates additional relative total float available for consumption by the paced activity. The deceleration is achieved typically by reassignment or reduction of resources or entirely foregoing the procurement of resources that would have been otherwise necessary.

It should be clear that where the pacing defense is raised in answer to the identification of a potential concurrent delay, the pacing delay is not a distinct delay event but an alternate characterization or 'label' to describe and explain the concurrent delay event. Therefore, the pacing issue is relevant only to the extent that concurrency of delays is an issue. If there have been no potential concurrent delays identified, then pacing is irrelevant.

The term *pacing defense* is a misnomer, because paced performance, when properly undertaken, is a proactive rather than a reactive response to another party's parent delay. The use of the term *defense* implies that pacing is a forensic excuse rather than a contemporaneous option.

Pacing almost never occurs in the context of a literal method of concurrency analysis. Under the literal theory, the initial delay event would create float within the other near critical simultaneous activities. Since those activities had float relative to the new critical path, there would be no need to consider pacing.

Provided that pacing is not precluded by contract or local law, the contractor's right to pace its work in reaction to a critical path delay is a generally accepted concept. Thus, the contractor will not be penalized for pacing its work. This is consistent with the majority view that float, a shared commodity, is available for consumption on a 'first come first served' basis. Contracts that reserve float ownership to one party or the other may effectively preclude pacing as a management tool.

Pacing is irrelevant without the initial assertion of concurrent delay, and since concurrent delay is irrelevant where compensability is not at issue, the general acceptance of pacing strongly suggests that the contractor's right to pace would remove the owner's defense of concurrent delay and thereby make an otherwise non-compensable parent delay a compensable one. Alternatively, the owner can also pace performance. The owner's legitimate pacing would remove the contractor's defense of concurrent delay and thereby make an otherwise excusable contractor delay, non-excusable.

G. Demonstrating Pacing

In the absence of clear law or prevailing contractual language, the following criteria provide common sense guidelines for determining the legitimacy of pacing delays:

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

1. Existence of the Parent Delay

By definition, pacing delay cannot exist by itself. It exists only in reaction to another delay which is equally or more critical or is believed to be more critical than the paced activity. This calls for the calculation of relative total float between the parent delay and the pacing delay. Also, in cases where many different activities are being performed at the same time, it is unclear who is pacing whom. But one thing is clear: the parent delay must always precede the pacing delay. The existence of a parent delay is a mandatory requirement in legitimizing a pacing delay.

Quantitatively, the near-critical threshold can serve as a benchmark for the need to analyze for pacing delays, just like it serves to identify concurrent delays.

2. Showing of Contemporaneous Ability to Resume Normal Pace

Pacing is not realistic unless the party claiming it was pacing can show that it had the ability to resume progress at a normal, un-paced rate. Implicit in that party's ability to show that it could have completed the schedule activity on time if necessary is the fact that the party was able to reasonably determine or reliably approximate when the parent delay would end.

3. Evidence of Contemporaneous Intent

The case can be further strengthened by showing that the pacing was a conscious and deliberate decision that was made at the time of pacing. Without a notice signifying contemporaneous intent to pace, the claimant can use pacing as a hindsight excuse for concurrent delay by offering after-the-fact testimony. Typically, contemporaneous pacing notices are rare in any form, let alone specific written notices. Therefore this should not be a strict requirement of proof.

Paced performance is inherently risky because it is counter intuitive for any party to intentionally delay its performance on a project where time is of the essence. In order to mitigate such risk, it is always recommended that the party claiming the privilege provide the party responsible for the parent delay with notice of its intent to pace its performance. Unfortunately, such notices are exceedingly rare.

4.3. Critical Path and Float

A. Identifying the Critical Path

1. Critical Path: Longest Path School vs. Total Float Value School

In the early days of the development of the CPM, the longest path was the path with the lowest float. Using simple network logic (finish-to-start) only, the critical path of an un-progressed CPM network calculated using the longest path criterion or the lowest float value criterion is the same.

It is only when some advanced scheduling techniques are applied to the network model that the paths identified using these different criteria diverge (see Subsection 4.3.D.).

Most practitioners would agree that the longest path is the true critical path. Even with the use of advanced techniques, if basic network rules (see Subsection 2.1) are observed the total float value is a reasonably accurate way of identifying the critical path. But, note that float values are displayed using workday units defined by the underlying calendar assigned to the schedule activity instead of in 7-day calendar units. Therefore, activities on a chain with uniform network tension may display different float values.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

2. Negative Float: Zero Float School vs. Lowest Float Value School

When a project is behind schedule, the network model may display negative values for float. Technically, this results from the fact that the earliest possible dates of performance for the activities are later than the latest dates by which they must be performed in order for the overall network to complete by a constrained finish date. Thus, the negative value is a direct indication of how many work days the schedule activity is behind schedule.

As discussed in Subsection 4.2.D.2.there are two schools of thought in interpreting the criticality of activity paths carrying negative float values. One school, which will be called the zero float school, maintains that all activities with negative float are, by definition, critical, assuming the definition of critical path is anything less than total float of one unit. The other school, which will be called the lowest value school, insists that only the activity paths that carry the lowest value are critical.

In the context of the two critical path schools, longest path versus total float value, the total float value adherents tend to align with the zero float thinking while the longest path adherents tend to think along the lines of the lowest float value school. However, neither one of these philosophical alignments is guaranteed, nor are they logically inconsistent.

Which one is correct depends on which principles are considered. If only CPM principles are used to evaluate the theories, the lowest value school is correct. The zero float school may have an arguable point if contractual considerations are brought into play, since all paths showing negative float are impacting (albeit not equally) the contractual completion date.

For the purpose of this RP, the procedures and methods use the lowest value theory as the valid criterion for criticality where negative float is shown. Thus, the true float value of a schedule activity carrying negative float will be calculated as the relative total float against the lowest float value in the network. For example, if the lowest float value in the network is minus 100, and another schedule activity shows a value of negative 20, the true float for that schedule activity, based on relative total float, is 80, assuming both activities are defined by the same calendar (see Subsection 4.3.D.2). The potential also exists for fragnets of activities to have lower total float than the project's longest or critical path. This occurs when activities are tied to intermediate project milestones (and not to overall project completion). If such a scenario is observed, the analysis should also consider the contractual relationship or requirement for the intermediate milestones.

B. Quantifying 'Near-Critical'

The purpose of quantifying the near-critical path is to reduce the effort of identifying and analyzing potential concurrent delays. A rational system of identifying all activities and delays that are near-critical is the first step in objectively streamlining the process of evaluating the schedule for concurrent delays. Thus, if the analyst chooses to analyze all delays and activities on a network, the quantification of near-critical is unnecessary. But in most cases, analyzing all activities, especially on large complex schedules, is excessively time consuming and unnecessary.

Near-critical delays have the greatest potential of becoming concurrent delays. This is because a near-critical delay, upon consumption of relative float against the critical path delay, will become critical. Therefore the near-critical delays are the most likely suspects of concurrency, and must be analyzed for partial concurrency to the extent that the net effect of that delay may exceed such relative float.

The determination of what a 'near critical' activity is depends on the following factors:

Copyright 2011 AACE® International, Inc.

1. Duration of Discrete Delay Events

The insertion or extraction of delays affects the CPM calculations of a network model. Specifically, the duration of delays modeled in the analysis is directly proportional to the impact such delays have on the underlying network.
Because the effect results from insertion or extraction of delay, this is of obvious relevance to the modeled methods (MIP 3.6, 3.7, 3.8, and 3.9). But, it is also relevant to the dynamic observation methods where the underlying schedule updates were prepared during the project by inserting delay events.

The maximum duration of the set of all delay events would measure the greatest potential effect resulting from insertion or extraction. Averaging the duration of the set of all delay events would provide a less rigorous average measure. The maximum or the average measure is added to the value of the float value of the critical path to yield the near-critical threshold. Any schedule activity or path carrying a float value between that threshold and the value of the critical path is considered near-critical.

The practical effect is that the greater the duration of the delay events used in the model the greater the number of activities that must be considered near-critical and subjected to concurrency evaluation. Under this criterion, the most obvious way of minimizing the number of near-critical activities is to minimize the duration of the delay events. That is, a delay event of relatively long duration can be segmented into smaller sub-events for analysis and documentation.

While ensuring a finer granularity of delay events gives rise to added work in modeling and documenting those delay events, the trade-off is a lesser number of activities to analyze for concurrency.

2. Duration of Each Analysis Interval

The duration of the analysis interval is the length of time from the start of the segment of analysis to the end of that segment. In the dynamic methods (MIP 3.2, 3.3, 3.4, 3.5, 3.7, and 3.9) where the analysis is segmented into multiple analysis intervals, the measure would be the duration of each time period. In the static methods (MIP 3.1, 3.2, 3.6, and 3.8) [15] the duration of the analysis interval is the duration of the entire project or whatever segment of the project is represented by the schedule used for the analysis. Although this would mean that the static methods would have to perform a concurrency analysis on the entire network, it is both impractical and unnecessary to do so. Thus for methods that use the as-built as a component (MIP 3.1, 3.2, and 3.8), determination of near criticality can be made pursuant to the procedure established in Subsection 4.3.C below regarding the as-built critical path.

The concept underlying this criterion is the fact that the potential change in the critical path due to slippage, lack of progress or gain caused by progress during the analysis interval is equal to the duration of that interval. Thus, if the interval is one month, the maximum slippage that can occur, excluding non-progress revisions and delay insertions, is one month. Hence, near-criticality threshold would be set by adding 30 calendar days to the float value of the critical path.

This criterion is most relevant with the dynamic methods (MIP 3.2, 3.3, 3.4, 3.5, 3.7, and 3.9) that use the concept of analysis intervals. An implementation that uses large time periods would have to consider more activities near-critical than one that uses many small time periods. An extreme example of the latter is an as-planned versus as-built analysis that analyzes progress on a daily basis (MIP 3.2). This would have a near-critical threshold value of one day over the critical path.

[15] MIP 3.2 appears in both classifications because under some (but not all) implementations of MIP 3.2, the segmentation is merely a graphical tool for presenting a conclusion derived from a non-periodic analysis. Please refer to MIP 3.2 for details.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

The practical tradeoff is that by increasing the number of analysis intervals one can reduce the work load of concurrency analysis, and vice-versa.

3. Historical Rate of Float Consumption

To augment the previous analysis interval criterion, the rate at which float is being consumed on a given activity-chain over time is worthy of consideration. The rate of consumption should be no more than the duration of the analysis interval per interval. Thus, where the interval is one month, if an activity chain is outside the near-critical threshold but is consuming more than 30 calendar days of float per month in the past updates[16], the trend indicates that it would become near-critical in the next period. Therefore, it should be considered near-critical even though it carries more relative float than the duration of the interval.

4. Amount of Time or Work Remaining on the Project

As the project approaches completion, CPM may not be the best tool to assess criticality. This is true especially in a problem project where many activities are being performed out-of-sequence in an attempt to meet an aggressive deadline. Even on a normal project, as the work transitions from final finishes to punch list work, CPM updates may be abandoned in favor of a list or matrix format of work scheduling. It is often said that near the end 'everything is critical'.

Reduced to an equation, the percentage of activities remaining on the network that should be considered near-critical is proportional to the degree of completion of the schedule.

Therefore, after 90 to 95 percent of the base scope and change order work are complete, the analyst may want to consider all activities on the schedule as near-critical regardless of float.

C. Identifying the As-Built Critical Path

It is impossible to accurately determine the as-built critical path by using only conventional float calculation on the past portion (left) of the data date. Because of this technical reason, the critical set of as-built activities is often called the controlling activities as opposed to critical activities.

One method to show the as-built critical path is to create a collapsible as-built CPM schedule (Subsection 3.8.K.2) where the as-built schedule actual dates are converted into actual activity durations and actual driving lag durations. The total float values of the collapsible as-built schedule can be used to show the as-built critical path if the as-built logic was determined using the enhanced logic rules that not only uses the early-start and early-finish dates to simulate the as-built dates but also determine the proper late start and late finish dates. While there is acknowledgement that this is technically feasible, currently there is no agreement among practitioners on a common set of these enhanced logic rules.

The closest the analyst can come to determining the as-built critical path is to cumulatively collect from successive schedule updates the activities that reside on the critical path between the data date and the data date of the subsequent update. The same technique can be used to determine the as-built near-critical activities. If the updates are available, the following is the recommended protocol.

a. Use all the critical and near-critical activities in the baseline schedule. If modifications were made to the baseline for analysis purposes, use both sets of critical activities, before and after the modification.

[16] Obviously this would be caused by reasons beyond just pure slippage. An example would be insertion of activities or a change to more restrictive logic.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

b. For each schedule update, use the critical and near-critical chains of activities starting immediately to the right of the data date.

c. Also use the predecessor activities to the left of the data date that precede the chains found in (b) above.

d. Use the longest path and near-longest path criteria in addition to the lowest float path criterion in identifying the activities.

e. If weather or other calendar factors are at issue, also use a baseline recalculated with an alternate calendar reflecting actual weather or other factors to gather critical and near-critical activities.

An enhanced protocol would add the following sets to the recommended protocol.

f. If appropriate, perform (b) through (d) above using different calculation modes[17] if they are available.

g. Where significant non-progress revisions were made during the updating process, repeat (b) through (d) using the progress-only, bifurcated schedules (see Subsection 2.3.D)

h. If appropriate, examine the resource-leveled critical path as opposed to hard-tied sequences, sometimes called preferential logic, based solely on resources.

i. Conversely, if resource constraint is at issue and the schedule logic does not reflect the constraint, insert resource-based logic to obtain a critical path that considers all significant constraints.

From the above steps the lowest float path will generally be the as-built critical path. However, the expert must use his/her expert opinion based on all the facts, to identify the as-built critical path from among the identified candidates. Factors to be considered include:

- Was the work critical on any update?.
- Was the work perceived to be critical by project personnel contemporaneously as documented in letters, meeting minutes, etc.?
- Was the work qualitatively significant toward overall outcome based on cost as well as the analyst's judgment and experience?
- Are their resource restraints not evident in the logic?
- Is the work being performed consistently or piecemeal?
- Does the work drive other subsequent apparently critical work?

Objective identification of the controlling activities is difficult, if not impossible, without the benefit of any schedule updates or at least a baseline CPM schedule with logic. Therefore, in the absence of competent schedule updates, the analyst must err on the side of over-inclusion in selecting the controlling set of as-built activities. The determination must be a composite process based on multiple sources of project data including the subjective opinion of the percipient witnesses. All sources used to identify the as-built controlling path should be tabulated and evaluated for reliability. Contemporaneous perception of criticality by the project participants is just as important as the actual fact of criticality because important project execution decisions are often made based on perceptions. Perceived or subjective as-built critical paths can be based on:

- Interview of the hands-on field personnel.

[17] For example, in *Primavera Project Planner*: retained logic and progress override modes.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

- Interview of the project scheduler.
- Contemporaneous non-CPM documentation such as:
  - monthly update reports.
  - meeting minutes.
  - daily reports.

D. Common Critical Path Alteration Techniques

There are various ways of creating, erasing, decreasing, inflating, or hiding float and manipulating the critical path of a CPM network.

These manipulation techniques can be used prospectively during the preparation of the baseline and the project updates as well as in the process of preparing the forensic models (MIP 3.6, 3.7, 3.8, and 3.9). This does not mean that the observational methods (MIP 3.1, 3.2, 3.3, 3.4, and 3.5) are immune from manipulation. Since they rely on the baseline and the updates, the source schedules must be checked for manipulation prior to use in the forensic process. Also, during the forensic process, the dynamic methods are subject to manipulation through the frequency, duration, and placement of analysis intervals (Subsection 4.3.B.2) and through subjective assignment of progress data in reconstructing updates (MIP 3.5).

The use of these techniques per se is not evidence of intentional manipulation. It must be stressed that there are legitimate uses and good reasons, albeit limited, for these features. Even in the absence of 'good reason', the feature could have resulted from laziness or even misguided attempts to improve the schedule. At any rate, schedules used for forensic schedule analysis must minimize the use of these techniques (see Subsection 2.1).

The policy of this RP is to be 'software neutral'. This means that procedures and recommendations are made without regard to the brand or version of software used for analysis. However, the examples of techniques used to manipulate results, listed below, contain descriptions of the features found in some software manufacturer's manuals

1. Resource Leveling and Smoothing

This technique uses available float to balance the resources necessary for executing the schedule. Some analysts maintain that resource leveling is the technical embodiment of pacing (see Subsection 4.2.F).

Resource leveling is the process of determining and minimizing the effect of resource availability on the schedule. Resource leveling can be used to resolve resource conflicts by rescheduling activities to times when sufficient resources are available. When resources are not available, activities can be split; activity durations can be stretched to reduce their resource per time period requirements; or, activity durations can be compressed to take advantage of ample resource supplies. During forward leveling, activities may be shifted to a later date (the leveled date). In backward leveling, activities may be moved earlier in time.

Resource smoothing is an optional resource leveling method that resolves resource conflicts by delaying activities that have positive float. Resource smoothing uses the available positive float and incrementally increases the availability limits.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

2. Multiple Calendars

Float values are displayed using workday units defined in the underlying work-day calendar assigned to the activity instead of in calendar-day units. Therefore, activities in a logic sequence but with different calendars may display different float values.

All things being equal, activities using a more restrictive work-day calendar, such as one that excludes the winter months for work, carry less float than activities with less restrictive work-day calendar. Thus, by adding or removing a few holidays in the calendar, float can be manipulated.

The only way to avoid gaps, discontinuities, and work-day conversions is to use only one calendar consisting of a seven-day week.

3. Precedence Logic / Lead and Lag

Simple logic is finish-to-start with a lag value of zero, denoted as FS0. Other known types of logic relationships are start-to-start (SS), finish-to-finish (FF), and start-to-finish (SF). Most software allows the use of these logic types along with the use of lead and lag values other than zero, including negative values. The use of lag values greater than zero with FS-type of logic absorbs otherwise available float. It is possible to assign lag values that are less than zero, called negative lags. Negative lags associated with the FS-type of logic have the effect of overlapping the associated schedule activities, thereby increasing float.

- ***Lag***: An offset or delay from an activity to its successor. Lag can be positive or negative; it is measured in the planning unit for the project and based on the calendar of the predecessor activity.
- ***Lead Time***: An overlap between tasks that have a dependency. For example, if a task can start when its predecessor is half finished, the analyst can specify a finish-to-start dependency with a lead time of 50 percent for the successor task. The analyst enters lead time as a negative lag value or as a percent complete lag value in some software packages.
- ***Lag Time***: A delay between tasks that have a dependency. For example, if the analyst needs a two-day delay between the finish of one task and the start of another, the analyst can establish a finish-to-start dependency and specify a two-day lag time. The analyst can enter lag time as a positive value.

4. Start and Finish Constraints

Setting a start constraint to a date that is later than what would be allowed by a controlling predecessor would decrease the float on the schedule activity. Similarly, setting a finish constraint to a date that is earlier than what would be allowed by a controlling predecessor would also decrease float on the schedule activity. Both techniques can be used to force activity paths to carry negative float.

There are also features that force the schedule activity to carry no total float or no free float. Also certain types of constraints force the assignment of zero float value by fixing dates on which the activity will be performed, overriding associated precedence logic.

5. Various Calculation Modes

Fundamental schedule and float calculation methods can usually be selected by the analyst, further complicating the effort to identify the critical path and quantify float. Below are examples

Copyright 2011 AACE® International, Inc.

related to various methods of schedule calculation, duration calculation, and float calculation.

a. Schedule Calculation

- ***Retained Logic:*** If the analyst selects retained logic, remaining activities are scheduled with out-of-sequence progress according to the network logic. When used, scheduling software schedules the remaining duration of an out-of-sequence activity according to current network logic - after its predecessors.

- ***Progress Override:*** Progress override ignores logic and affects the schedule only if out-of-sequence progress occurs. If the analyst selects progress override, remaining activities are scheduled with out-of-sequence progress as though they have no constraints from incomplete predecessors with start-to-start relationships and can progress without delay. Not only does the successor activity act as if it has only limited predecessor constraints, the float of the predecessor activity also reflects the loss of that successor relationship. Progress override treats an activity with out-of-sequence progress as though it has no predecessor constraints; its remaining duration is scheduled to start immediately, rather than wait for the activities predecessors to complete. However, neither the longest path nor most-negative float techniques can guarantee an accurate depiction of the critical path when using actual dates if out of sequence status is involved.

b. Duration Calculation

- ***Contiguous Activity Duration:*** Contiguous activity duration requires that work on an activity occur without interruption. For early dates, this type of logic affects the start dates for an activity when the finish dates are delayed by a finish relationship from a preceding activity or by a finish constraint. If the finish dates of an activity are delayed, the start dates are delayed also.

- ***Interruptible Activity Duration:*** For early dates, interruptible scheduling affects how start dates of an activity are treated when the finish dates are delayed by a finish relationship from a preceding activity or by a finish constraint. If the finish dates of an activity are delayed, the start dates are not delayed. – The duration of the activity is stretched, allowing the work to be interrupted along the way.

6. Use of Data Date

- Reliable calculation of schedule updates requires the use of the concept of data date or status date is generally the starting point for schedule calculations. Generally, the data date is changed to the current date when the analyst records progress.

7. Judgment Calls During the Forensic Process

Any of the above techniques can be abused to effect discretionary decisions by the forensic analyst to influence the analysis in favor of the client. There are two instances in the forensic process that are especially sensitive to such influence because they directly affect the schedule variables at the data line. They are:

- Frequency, duration, and placement of analysis intervals (see Subsection 4.2.A.3).

- Hindsight vs. blindsight update reconstruction (see Subsection 4.2.A.5).

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

E. Ownership of Float

In the absence of contrary contractual language, network float is a shared commodity between the owner and the contractor. Conventional interpretation of the principle of shared float allows the use of float on a first-come-first-serve basis, thereby allowing the owner to delay activities on that path up to the point where float is consumed. Therefore, as a corollary, if pacing is defined as the consumption of float, it follows that both owners and contractors are allowed to pace non-critical work.

Project float is the time between the last schedule activity on the baseline schedule and the contractual completion date where the contractual completion date is later than the scheduled completion date. In this case, in the absence of contrary contractual language, project float is owned solely by the contractor.

4.4. Delay Mitigation and Constructive Acceleration

A. Definitions

Acceleration: All or a portion of the contracted scope of work must be completed by the contractor earlier than currently scheduled. The accelerated work may be required as a result of: (a) direction of the owner or its agents (directed acceleration); (b) conduct of the owner or its agents without explicit direction (constructive acceleration); or (c) events within the responsibility of the contractor resulting in possible delay that the contractor decides to recover or mitigate. Acceleration typically has a cost associated with this performance.

Directed Acceleration: Formal instruction by the owner directing the contractor to: (1) complete all or a portion of the work earlier than currently scheduled; (2) undertake additional work; or, (3) perform other actions to complete all, or a portion, of the contract scope of work in the previously scheduled timeframe that otherwise would have been delayed. This could include mitigation efforts that usually have no costs associated with them.

Constructive Acceleration: (1) A contractor's acceleration efforts to maintain scheduled completion date(s) undertaken as a result of an owner's action or inaction and failure to make a specific direction to accelerate; **[4]** (2) Constructive acceleration generally occurs when five criteria are met: (a) the contractor is entitled to an excusable delay; (b) the contractor requests and establishes entitlement to a time extension; (c) the owner fails to grant a timely time extension; (d) the owner or its agent specifically orders or clearly implies completion within a shorter time period than is associated with the requested time extension; and, (e) the contractor provides notice to the owner or its agent that the contractor considers this action an acceleration order. **[4]** (3) Acceleration is said to have been constructive when the contractor claims a time extension but the owner denies the request and affirmatively requires completion within the original contract duration, and it is later determined that the contractor was entitled to the extension. The time extension can be for either additional work or delayed original work. **[5]** (4) Constructive acceleration occurs when the owner forces the contractor to complete all or a portion of its work ahead of a properly adjusted progress schedule. This may mean the contractor suffers an excusable delay, but is not granted a time extension for the delay. If ordered to complete performance within the originally specified completion period, the contractor is forced to complete the work in a shorter period either than required or to which it is entitled. Thus, the contractor is forced to accelerate the work. **[6]** (5) Acceleration following failure by the employer to recognize that the contractor has encountered employer delay for which it is entitled to an EOT (extension of time) and which failure required the contractor to accelerate its progress in order to complete the works by the prevailing contract completion date may be brought about by the employer's denial of a valid request for an EOT or by the employer's late granting of an EOT. This is not (currently) a recognized concept under English law. **[1]** (6) Constructive acceleration is caused by an owner failing to promptly grant a time extension for excusable delay and the contractor

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

accelerating to avoid liquidated/stipulated damages. **[7]**

Disruption: (1) An interference (action or event) to the orderly progress of a project or activity(ies). Disruption has been described as the effect of change on unchanged work which manifests itself primarily as adverse labor productivity impacts. **[4]** (2) *Schedule disruption* is any unfavorable change to the schedule that may, but does not necessarily, involve delays to the critical path or delayed project completion. Disruption may include, but is not limited to, duration compression, out-of-sequence work, concurrent operations, stacking of trades, and other acceleration measures. **[8]**

Out-of-Sequence Progress: Significant work performed on an activity before it is scheduled to occur. In a conventional relationship, an activity that starts before its predecessor completes shows out-of-sequence progress. **[2]**

Delay Mitigation: A contractor's or owner's efforts to reduce the effect of delays already incurred or anticipated to occur to activities or groups of activities. Mitigation often includes revising the project's scope, budget, schedule, or quality, preferably without material impact on the project's objectives, in order to reduce possible delay. Mitigation usually has no or very minimal associated costs. **[4]**

Recovery Schedule: A special schedule showing special efforts planned to recover time lost for delays already incurred or anticipated to occur when compared to a previous schedule. Often a recovery schedule is a contract requirement when the projected finish date no longer indicates timely completion. **[4]** Recovery schedules are usually proposals that must be accepted by the owner prior to implementation.

B. General Considerations

1. Differences between Directed Acceleration, Constructive Acceleration, and Delay Mitigation

In practice, there are subtle distinctions between directed acceleration, constructive acceleration, and delay mitigation. For example, directed acceleration cost implies additional expenditure or money for recovery of either incurred or projected delay, as well as efforts to complete early – all at the direction of the owner. The term constructive acceleration applies to expenditure of money for efforts to recover either incurred or projected delay caused by the owner and without specific direction to do so. Delay mitigation generally refers to no-cost recovery efforts for incurred or projected delay.

In the case of acceleration, constructive acceleration, and delay mitigation, affected activities are usually on the projected critical path; thus, the objective of most acceleration or mitigation is to recover from anticipated delay to project completion. However, acceleration, constructive acceleration, and mitigation can occur with regard to activities that are not on the critical path. For example, an owner might insist that a certain portion of the work be made available prior to the scheduled date for completion of that activity. The contractor may mitigate non-critical delay by resequencing a series of non-critical activities to increase the available float.

There are circumstances in which acceleration measures are used in an attempt to complete the project earlier than planned. Those circumstances are usually classified as: (a) directed acceleration where the owner directs such acceleration and usually pays for the associated additional cost; or (b) voluntary acceleration in which the contractor implements the plan on its own initiative in the hope of earning an early completion bonus. Contractor efforts undertaken during the course of the project to recover from its own delays to activities are generally not considered acceleration, even if the contractor incurs cost as a result.

The causative link between a delay event and cost associated with constructive acceleration is

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

diagramed below. The root cause of the impact results in a construction delay or projects a construction delay. This, in turn, results in the contractor identifying that it needs a time extension and requesting a time extension. The owner denies the time extension request but the need for recovery from the delay remains. The contractor then undertakes acceleration measures that could include increased labor. Increased labor, without a time extension, can result in loss of productivity.

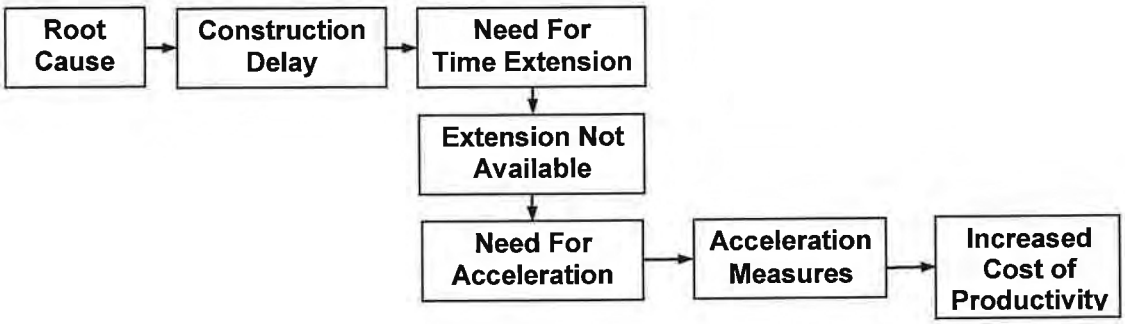


Figure 16 – Constructive Acceleration Flow Chart

A contractor's cost for acceleration, whether directed or constructive, is generally associated with the effort to engage more resources to perform the work during a unit of time than planned. These increased resources fall into the following major categories: (1) increased management resources; (2) increased equipment usage; (3) increased material supply; and (4) increased labor. The greatest cost associated with acceleration is usually increased labor. Since the amount of actual work remains unchanged in most acceleration efforts (assuming the planned scope of work has not increased), the increase in labor cost is a result of a decrease in labor productivity or the increase in the amount of overtime labor. Decreased labor productivity is caused by disruption to the planned sequence and pace of the labor. The greater the disruption to the work, the greater the inefficiency. Disruption can be the result of having more people working in the planned area during a specific time, or loss of productivity associated with individual workers working more hours than planned.

2. Acceleration and Compensability

Directed acceleration is always compensable to the contractor, although the parties may disagree on quantum. This is true regardless of whether the contractor is accelerating to overcome an owner-caused delay, or to recover from a *force majeure* event. Constructive acceleration follows this same pattern. If entitlement to constructive acceleration is established, the contractor may recover for a delay caused by the owner that the owner has refused to acknowledge and also for a *force majeure* event. This is different than the normal rule concerning damages associated with *force majeure* events. Typically, *force majeure* events entitle the contractor to time but no money. However, if an owner refuses to acknowledge a time extension for a force majeure event a contractor has no choice but to constructively accelerate so as to avoid the delay and possible liquidated/stipulated damages. As a result, the contactor is entitled to recover its cost associated with that constructive acceleration.

3. Delay Mitigation and Compensability

Delay mitigation is generally achieved through non-compensable efforts. These efforts are usually associated with changes in preferential logic so as to perform the work in a shorter timeframe. Mitigation applies to either incurred or predicted delays. There is no mitigation associated with efforts to complete early. Delay mitigation often has a small cost which is associated with the contractor's management of the schedule and the overall project. It is generally considered

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

minimal and therefore ignored.

C. Elements of Constructive Acceleration

1. Contractor Entitlement to an Excusable Delay

The contractor must establish entitlement to an excusable delay. The delay can be caused by an action or inaction on the part of the owner that results in delay or it can be a *force majeure* event. In theory, a contractor can recover for constructive acceleration for work yet to be done. In this situation the owner takes some action that will result in the contractor expending acceleration costs to recover from the delay. The contractor could assert its entitlement even though the actual acceleration has yet to occur and the actual acceleration costs have yet to occur. In practice, since constructive acceleration occurs after the owner has denied a time extension, it is almost always resolved after the acceleration is complete and the contactor usually is arguing that it was actually accelerated.

2. Contractor Requests and Establishes Entitlement to a Time Extension

The contractor must ask for a time extension associated with the owner's action or the *force majeure* event. In that request, or associated with that request, the contractor must establish entitlement to a time extension. The owner must have the opportunity to review the contractor's request and act upon it. If the contractor fails to submit proof of entitlement to a time extension, the owner is able to argue that the opportunity was never given to properly decide between granting a time extension and ordering acceleration. The level of proof required to be submitted must in the end be sufficient to convince the eventual trier of fact that the contractor "established" entitlement.

In certain situations, it is possible that actions of the owner may negate the requirement for the contractor to request a time extension or to establish entitlement. In this situation, the theory is that the owner has made clear that a time extension will absolutely not be granted. Such cases are difficult to establish.

3. Owner Failure to Grant a Timely Time Extension

The owner must unreasonably fail to grant a time extension. This is closely related to the requirement that the contractor establish entitlement to a time extension. If the owner reasonably denies a request for time, as eventually decided by the trier of fact, then by definition the contractor has failed to prove entitlement. Therefore, the owner's decision not to grant a time extension where the contractor has shown entitlement must be unreasonable.

4. Implied Order by the Owner to Complete More Quickly

The owner must also, by implication or direction, require the contractor to accelerate. There are several different factual alternatives possible. First, a simple denial of a legitimate time extension, by implication, requires timely completion and thus acceleration. If this denial is timely given, the contractor can proceed. However, the best proof for the contractor is a statement or action by the owner that specifically orders the contactor meet a date that requires acceleration. Second, the owner could deny the time extension request and remind the contractor that it needs to complete on time. This is better than the first alternative above, but not as strong as the next alternative. Third, the owner could deny the time extension request and advise the contractor that any acceleration is the contractor's responsibility. This is probably the best proof for this aspect of constructive acceleration. All three of these options meet the test for an owner having constructively ordered acceleration. Examples of owner actions that meet this requirement include: (1) a letter from the owner informing the contractor that it must meet a completion date

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

that is accelerated; (2) an owner demand for a schedule that recovers the delay; or (3) the owner threatening to access liquidated/stipulated damages unless the completion date is maintained. The fourth alternative arises when the owner is presented with a request for a time extension but fails to respond. The contractor is faced with either assuming that the time extension will be granted, or accelerating. Under this alternative, the owner's failure to timely decide, functions as a denial.

5. Contractor Notice of Acceleration

The contractor must provide notice of acceleration. As with any contract claim for damages, the owner must be provided notice of the claim. Even though the contractor has requested and supported the application for a time extension, the contractor must still notify the owner of its intent to accelerate or be actually experiencing ongoing acceleration. This is so that the owner can decide if it actually desired acceleration to occur, or, instead, the owner may decide to grant a time extension.

6. Proof of Damages

The contractor must establish its damages. For loss of productivity claims, the contractor is faced with developing convincing proof of decreased productivity. Actual acceleration is not required. A valid contractor effort to accelerate, supported by contemporaneous records, is sufficient to establish constructive acceleration. It is quite common that contractors accelerate to overcome delays but continue to be impacted and delayed by additional events and impacts that actually result in further delay to the project.

5. CHOOSING A METHOD

This RP discusses the choice of a forensic schedule analysis methodology. Because individuals generally work for one party to a dispute, there is often skepticism about the impartiality of the particular methodology chosen. Therefore, it is vitally important that all practitioners understand clearly what it takes to overcome this skepticism when choosing and using a particular delay evaluation method.

First, each claim is unique in that each deals with a different project, different contract documents, different legal jurisdictions, different dispute resolution mechanisms, and different fact patterns among other project execution factors. Likewise, each method discussed in this RP is different and each has certain technical factors to consider, including advantages and disadvantages. Because of the uniqueness and the need to consider multiple variables it is impossible to recommend one method that is the "best" method, or to rank the methods in order of preference.

Second, the selection of the analytical method should be based primarily on technical considerations related to the purpose, the timing, availability of data, and the nature and complexity of the delay and scheduling information.

Having selected the technically appropriate analysis method based on these criteria, the analyst must now consider the legal criteria, which varies from one jurisdiction to another. It is not possible nor is it the intent to list the selection guidelines of all the legal jurisdictions in this RP. The analyst is cautioned to seek the advice of legal professionals with specialized knowledge of the laws of the jurisdiction and forensic schedule analysis methods. This is true especially if the selection based on technical criteria must be reconciled with a different selection based on legal criteria.

Thirdly, there are a number of qualitative reasons, beyond technical schedule analysis reasons, that should be included in determining which forensic schedule analysis method is to be used for a particular claim. As in any commercial undertaking, while practical considerations are appropriate, these

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

considerations must be secondary to the technical and legal considerations and should be used only when all appropriate technical and legal criteria have been met. Furthermore, the selection decision should be that of the analyst and not that of the client.

There is no requirement that the analyst select only one method to analyze a project. Some cases would necessitate the use of different methods for different phases of the project based on factors, including but not limited to, such as the nature of the claim (compensability versus excusability) and source data availability.
This part of the RP discusses eleven factors that should be considered by the forensic schedule analyst when making a recommendation to the client and its legal counsel concerning this decision. Factors two, three and five cover technical considerations. Factors one, nine and ten cover legal considerations. And factors four, six, seven, eight and eleven are practical considerations.

The forensic schedule analyst should consider each of these factors, reach a conclusion, and offer a recommendation with supporting rationale to the client and legal counsel in order to obtain agreement prior to proceeding with the work. Advance understanding of the analyst's scope of work as well as the time, cost and resources required to perform the work should prevent surprise or disagreements during the drafting of the expert report or worse, at deposition.

5.1 Factor 1: Contractual Requirements

When a project is executed under a contract that specifies or mandates a specific schedule delay analysis method, then the choice of method is largely taken out of the hands of the forensic schedule analyst, and contract compliance is the prevailing factor. Some contracts, for example, now require that all requests for time extension (either during the life of the project or at the end of the job) be substantiated through the use of a prospective TIA (similar to MIP 3.7). As noted in this RP, several methods of forensic schedule analysis fall under this generic terminology. Most likely, the forensic schedule analyst will be required to use one of the additive modeling methods, either single base or multiple base, unless there are persuasive reasons why a different method would yield a more credible result. Care should be taken to ascertain whether the contract actually mandates the use of this analytical method in forensic situations (retrospective delay analysis) or whether it is intended solely for use in prospective delay analysis to aid in negotiation of time impacts due to changes or other delays. If the latter is the situation, then the choice of methodology could be made based upon factors other than contractual language.

On the other hand, if the contract documents are silent on which schedule delay analysis method is to be used when attempting to prove entitlement to a time extension or time related compensation, then the forensic schedule analyst is free to use any of the methods identified in this RP to support such requests. However, even when the contract is silent on methodology, contract language may still constrain the forensic schedule analyst's choice of methods. For example, some contracts contain language requiring that all time extension requests document that the event "...impacted the critical path of the project schedule" or "...caused or will cause the end date of the project schedule to be later than the current contract completion date." Thus, while this language does not dictate a schedule delay analysis method, it probably compels the forensic schedule analyst to use one of the observational dynamic, additive modeling, or subtractive modeling techniques. Also, it precludes the use of any method that does not identify or analyze a critical path such as a listing of delay events or a bar-chart analysis.

Thus, the first factor to be considered is the existence of an unambiguous contract requirement describing the documentation or method to be used to support requests for time extensions or time related compensation. Forensic schedule analysts should adhere to the requirements of the contract and to the applicable codes and laws under which the contract is governed. However, it is not uncommon that requirements set forth in contracts are unclear or ambiguous (such as a contractual reference to a "but-for TIA") or patently erroneous references such as contract language requiring the use of an "impacted as-

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

built analysis". It is hoped that adoption and use of the terminology contained in this RP may help prevent such situations in the future. The forensic schedule analyst may want to use this RP as a mechanism to discuss the issue of differing forensic analysis methodologies with the client, legal counsel, and the other parties and help all focus on an appropriate method to be used.

5.2 Factor 2: Purpose of Analysis

Generally, the purpose of forensic schedule analysis is to quantify delay, determine causation, and assess responsibility and financial consequences for delay. Forensic schedule analysis studies how specific events impact a project schedule. Thus, the forensic schedule analyst uses contemporaneous project documentation to determine which events may have caused delay (including event identification, start and completion dates, activities impacted by the event, etc.). The forensic schedule analyst then applies or relates these events in some orderly manner to the schedules employed on the project. Once the events are added to, removed from, or otherwise identified in the schedule, a determination can be made concerning whether any or all of the events caused the project to complete later than planned. From this determination, assessment of causation and liability can be made based on the terms and conditions of the contract and the applicable law.

With respect to a particular project, the purpose of forensic schedule analysis is to determine if a party is entitled to time extensions or delay compensation as a result of certain events. Once the forensic schedule analyst has assessed the events that occurred on the project, then consideration should be given to issues such as concurrent delay, pacing delay, delay mitigation, etc. If the forensic schedule analyst, for example, needs to investigate whether concurrent delay is a major factor in the analysis of project delay, then the choice of method will be limited to those methods that specifically provide for concurrent delay identification and analysis.

Forensic Use of Analysis	METHOD								
	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9
Non-Compensable Time Extension	OK	OK	OK	OK	OK	OK	OK	OK	OK
Compensable Delay	OK	OK	OK	OK	OK			OK	OK
Right to Finish Early Compensable Delay								OK	OK
Entitlement to Early Completion Bonus	OK	OK	OK	OK	OK	OK	OK	OK	OK
Disruption Without Project Delay	OK	OK	OK	OK	OK	OK	OK		
Constructive Acceleration				OK		OK	OK		

Figure 17 – Some Methods are Better Suited for Certain Purposes Than Others

In such a situation, the forensic schedule analyst may be more likely to recommend one of the observational dynamic or modeled methods. If the purpose of the forensic schedule analysis is to demonstrate only excusable, non-compensable delay, numerous methods are available since the forensic schedule analyst will probably not need to deal with concurrent delay. If the purpose is to demonstrate

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

compensable delay, other methods may be more appropriate. If the purpose of the analysis is to investigate the contractor's ability to complete work early in conjunction with a delayed early completion claim or how the timeframe available for the contractor to perform was compressed, again some schedule delay analysis methods may be better than others. Figure 17 above, generally summarizes the suitability of the nine MIP's for some typical forensic uses of CPM schedules.

5.3 Factor 3: Source Data Availability and Reliability

As discussed in this RP and emphasized heavily in the source validation protocols, the choice of a particular forensic scheduling methodology is substantially influenced by the availability of source data that can be validated and determined reliable for the purpose of the analysis. If, for example, the project records show that there exists only a baseline schedule but no schedule updates for the duration of the project, then the observational MIP's 3.3 and 3.4 cannot be utilized.

As a result, it is incumbent on the forensic schedule analyst to determine the amount of contemporaneous project documentation available and assess its quality. Then the forensic scheduler needs to review a sampling of the project documentation to determine if the data is reliable for the purpose of the delay analysis. Once these reviews have been completed, the forensic scheduler can formulate a plan for the forensic schedule analysis effort and make a recommendation concerning which forensic schedule analysis method can and should be employed on the claim. Figure 18 below shows the source schedules that are required to implement the minimum basic protocol for each MIP. Enhanced protocols would typically require additional schedule sources.

Source Schedules or Data	METHOD								
	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9
Baseline Schedule	Min.	Min.				Min.	Min.		
Schedule Updates			Min.	Min.			Min.		Min.
As-Built Record	Min.	Min.			Min.			Min.	Min.

Figure 18 – Source Data Validation Needed for Various Methods

5.4 Factor 4: Size of the Dispute

One of the primary factors the forensic scheduler should keep in mind is the size of the dispute or the amount in controversy. In most situations, the choice of the forensic schedule analyst is constrained by how much a client has to spend to increase the probability of successful resolution of the dispute. This is most often determined by how much money is at stake. For example, if the delay damages being sought by the client are approximately US$100,000, then the forensic schedule analyst should recommend a relatively inexpensive forensic scheduling method that is still effective for its intended purpose. On the other hand, if the delay damages sought are US$50,000,000 then the range of methods to be considered is substantially expanded because of the greater scope and costs associated with analyzing a substantially larger claim. The forensic schedule analyst needs to recommend a forensic schedule analysis method that is both cost effective and suitable for the size of the dispute.

5.5 Factor 5: Complexity of the Dispute

When considering a forensic schedule analysis method, the forensic schedule analyst should do so with some knowledge of the complexity of the dispute in question and the number of events to be included in the forensic scheduling effort. For example, if the project in question is a linear project of relatively short

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

duration, and only three specific delay events need to be considered, then a simple comparison of the baseline with the as-built schedule may be appropriate. On the other hand, if the project was a complex process facility, with a 5,000+ activity network, and a hundred or so discrete events occurring over a five year period, the forensic schedule analyst may need to recommend one of the observational or modeled methods that divides the project duration into smaller analysis periods to isolate and explain controlling delays. In this context, the forensic schedule analyst should also distinguish between the complexity of the dispute and the complexity of the forensic analysis. Some complex disputes can still be analyzed with a less complex analytical technique. And, some of the methods contained in this RP may not require analysis of every activity on the schedule but can be focused on the critical path and sub-critical paths or on key events and activities only, to reduce both the cost and the complexity of the analysis.

5.6 Factor 6: Budget for Forensic Schedule Analysis

Hand in glove with the size and the complexity of the dispute is the client's budget for the forensic schedule analysis. That is, what can the client afford to spend on forensic schedule analysis? The forensic schedule analyst needs to determine whether there are any budget constraints prior to making a recommendation on forensic schedule analysis methodology. The forensic schedule analyst should also keep in mind the overall cost of the various forensic scheduling methods when making a recommendation. For example, if the delay analysis method requires the testimony of ten or fifteen percipient witnesses in order to properly lay the groundwork for the analysis in arbitration or litigation, this cost too, should be taken into account.

If the law of the contract has a prevailing legal fees provision, then clients and their counsel may be willing to spend more on forensic schedule analysis than if the contract is under conditions commonly called the "American Rule" where each party pays their own cost, regardless of outcome. If the client is prepared to spend only a small amount for a forensic schedule analysis effort, then the forensic schedule analyst should consider using less expensive forensic scheduling methods or cost saving alternatives – such as using the client's in-house staff for certain tasks rather than outside consultant staff. Or, the forensic schedule analyst may find a method contained in this RP which is appropriate for the situation, but which does not require that all of the validation protocols be performed. If the forensic schedule analyst is required to take short cuts or rely upon the work of others to stay within a very tight budget, the forensic schedule analyst should advise the client and client's legal counsel of the potential risks of proceeding in this manner. The forensic analysis should keep in mind that if insufficient funding is available for the analysis that would be required to investigate and analyze the case, it may be proper and prudent for the analyst to refuse to undertake the assignment rather than knowingly use a methodology that is not appropriate.

5.7 Factor 7: Time Allowed for Forensic Schedule Analysis

There also may be occasions when the amount of time available to perform and produce a complete forensic schedule analysis is limited. Consideration should be given to the time required for research, data validation, and claim team coordination which may be extensive, as well as production of the report. If the contract contains a fast track arbitration clause which requires that hearings begin within ninety days of the filing of the arbitration demand, and all material to be used in the arbitration is to be exchanged with the other side no less than two weeks prior to the first hearing date, the forensic schedule analyst may be limited to a sixty day timeframe in which to perform the scope of work. In many situations, the need for forensic schedule analysis is not made early enough to allow complete flexibility in the choice of an analytical method or is made at the last minute due to time limitations designating testifying experts. In either situation, the forensic schedule analyst may have a very limited timeframe in which to complete its work. Should this be the case, then the forensic schedule analyst may be constrained to recommend short cuts or a method which can be completed in far less time than other forensic scheduling methods in order to meet the time available to perform the work. Again, the forensic schedule analyst should point

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

out the risks of proceeding in this manner.

5.8 Factor 8: Expertise of the Forensic Schedule Analyst and Resources Available

If the forensic schedule analyst is experienced with only two or three of the methods identified in this RP and will be subject to challenge from the other side during *voir dire,* the forensic schedule analyst may be compelled to recommend use only of methods with which the analyst has experience. If the analyst determines that another method in which the analyst has little or no experience is more appropriate to the particular case then the analyst should be prepared to disclose that fact to the client. Additionally, if the forensic schedule analyst is to perform all analytical work individually with no assistance, the analyst may be constrained to recommend simpler methods which can be performed individually and will not require a staff of additional people processing data, making computer runs, etc.

5.9 Factor 9: Forum for Resolution and Audience

During initial discussions concerning the potential engagement, the forensic schedule analyst should seek advice from the client and its legal counsel on the most likely dispute resolution forum. What the forensic schedule analyst should seek is an opinion from those involved in the project, and their legal counsel, on whether the claim is likely to settle in negotiation, mediation, arbitration (and if so, under what rules), or litigation (and if so, in which court). If there is good reason to believe that all issues are likely to be settled at the bargaining table, or in mediation, then the range of options for forensic scheduling methods is wide open as the audience is only the people on the other side and they may be motivated, persuaded or willing to make decisions based upon a forensic schedule analysis method different than that specified in the contract. Almost any option which is objective, accurately executed and is persuasive is legitimately open for consideration. On the other hand, if legal counsel believes that the issue will end up in court or a government agency board, then the range of options available may be considerably narrowed because many courts and boards have adopted their own rules concerning forensic scheduling.

5.10 Factor 10: Legal or Procedural Requirements

Depending upon the forum for the dispute and the jurisdiction, the forensic schedule analyst must be aware of or ask about any contractual, legal, or procedural requirements that may impact the forensic analysis.

There may be other contractual, legal, or procedural rules impacting forensic scheduling that the forensic scheduling analyst should consider when making a recommendation concerning which forensic scheduling methodology to use on a particular claim. Consultation with the client's legal counsel on these issues is essential.

5.11 Factor 11: Custom and Usage of Methods on the Project or the Case

The final factor to be considered is past history and methods. Typically, a forensic schedule analyst is not engaged until after preliminary negotiations have failed. Thus, the forensic schedule analyst needs to consider what delay analysis method was employed by the client and their staff earlier during the project, which was not acceptable to the other side in prior negotiations. Knowing this, the forensic schedule analyst generally should not recommend use of this technique, as it has already proven unsuccessful, unless the scheduler can determine that the client staff performed the method erroneously in their early efforts or that the basis of the previous ejection of the method was clearly erroneous. Additionally, the forensic scheduler should take into consideration the method that had been previously employed unsuccessfully, if known.

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

Not all of the above factors will be applicable to all delay claims, obviously. Nevertheless, a prudent forensic schedule analyst should consider each of the above factors, as well as any other relevant factors that emerge, to determine which apply to the claim at hand. Once these are identified, including their potential synergistic effect upon each other, the forensic schedule analyst should discuss each applicable factor with the client and their legal counsel prior to making a recommendation as to which method should be employed for the delay analysis. Failure to consider these factors could lead to substantial difficulties later on in claim settlement negotiations, arbitration, or litigation.

REFERENCES

1. *SCL Delay and Disruption Protocol*, Society of Construction Law, Oxon, United Kingdom, 2002
2. Primavera Project Planner – on-line software glossary
3. Microsoft Project – on-line software glossary
4. *AACE International Recommended Practice No 10S-90 "Cost Engineering Terminology"*, AACE International, Morgantown, WV, 2004
5. *Construction Delay Claims*, Third Edition, Barry B. Bramble, Esq., Michael T. Callahan, Esq., Aspen Publishers, New York, NY, 2006
6. *Construction Scheduling: Preparation, Liability & Claims, Third Edition, Jon M. Wickwire, Esq., Thomas J. Driscoll, Stephen B. Hurlbut, Esq., Mark J. Groff, Esq., Aspen Publishers, New York, NY, 2010*
7. *How to Get Paid for Construction Changes: Preparation and Resolution Tools and Techniques*, Steven S. Pinnell, McGraw-Hill, New York, NY, 1998
8. *Proposed Specification Language Regarding Pacing*, Kenji P. Hoshino, AACE International Annual Meeting, 2006
9. *The American Heritage® Dictionary of the English Language, Fourth Edition*, Houghton Mifflin Company, Boston, MA, 2006

CONTRIBUTORS

(April 25, 2011 Revision)

Kenji P. Hoshino, CFCC PSP (Author)
John C. Livengood, CFCC PSP (Author)
Christopher W. Carson, PSP (Author)
Andrew Avalon, PE PSP
Michael S. Dennis, CCC
Rob Hartley, PSP
Richard J. Long, PE
J. Scott Lowe, PE
Robert B. McCullough, PE CCE CFCC
Donald F. McDonald, Jr., PE CCE PSP
Mark F. Nagata, PSP
Jeffery L. Ottesen, PE CFCC PSP
Thomas F. Peters, PE CFCC
Dr. Fredric L. Plotnick, PE
Dr. Anamaria I. Popescu, PE PSP
Mark C. Sanders, PE CCE PSP
L. Lee Schumacher, PE PSP
Michael D. Tarullo
Jeffrey M. Wentz
Ronald M. Winter, PSP
J. Kimon Yiasemides, PSP

Copyright 2011 AACE® International, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

James G. Zack, Jr., CFCC

(June 23, 2009 Revision)

Kenji P. Hoshino, CFCC PSP (Author)
Andrew Avalon, PE PSP
Christopher W. Carson, PSP
Michael S. Dennis, CCC
Sidney J. Hymes, CFCC
John C. Livengood, CFCC PSP
Richard J. Long
Mark F. Nagata, PSP
Jeffery L. Ottesen, PE CFCC PSP
Thomas F. Peters, PE CFCC
Dr. Anamaria I. Popescu, PE
Jose F. Ramirez, CCE
Mark C. Sanders, PE CCE PSP
L. Lee Schumacher, PSP
Stephen P. Warhoe, PE CCE CFCC
Ronald M. Winter, PSP
James G. Zack, Jr. CFCC

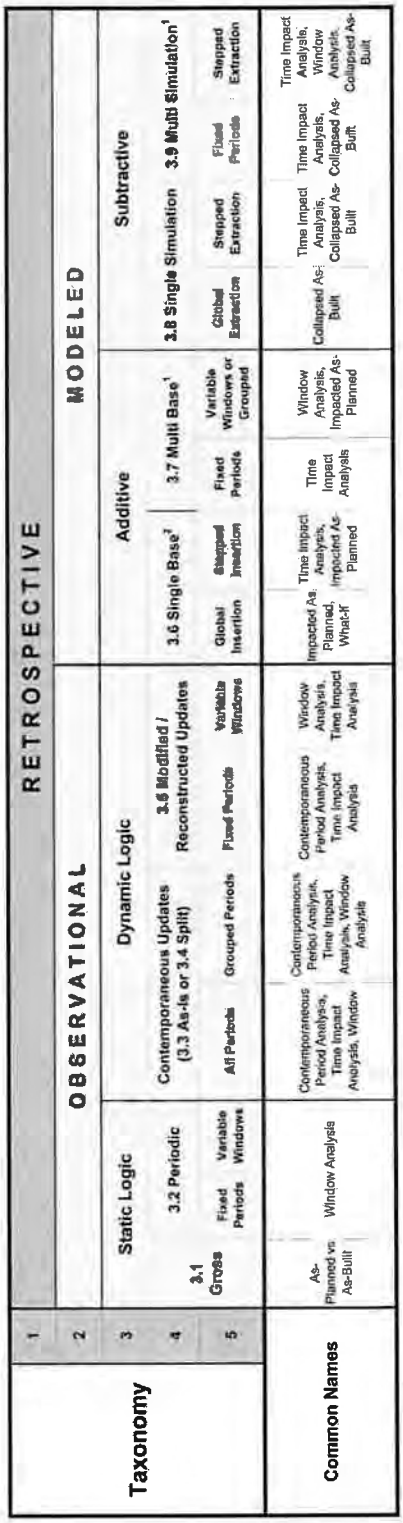
(June 25, 2007 Revision)

Kenji P. Hoshino, CFCC PSP (Author)
Robert B. Brown, PE
John J. Ciccarelli, PE CCE PSP
Gordon R. Costa. CFCC PSP
Michael S. Dennis, CCC
Edward E. Douglas, III CCC PSP
Philip J. Farrocco, PE
Dr. Sidney J. Hymes, CFCC
John C. Livengood, CFCC PSP
Mark F. Nagata, PSP
Jeffery L. Ottesen, PE CFCC PSP
Thomas F. Peters, PE CFCC
Keith Pickavance
Dr. Anamaria I. Popescu, PE
Jose F. Ramirez, CCE
Mark C. Sanders, PE CCE PSP
Takuzo Sato
L. Lee Schumacher, PSP
Robert Seals, PSP
Ronald M. Winter, PSP
James G. Zack, Jr. CFCC

Copyright 2011 AACE® International, Inc.

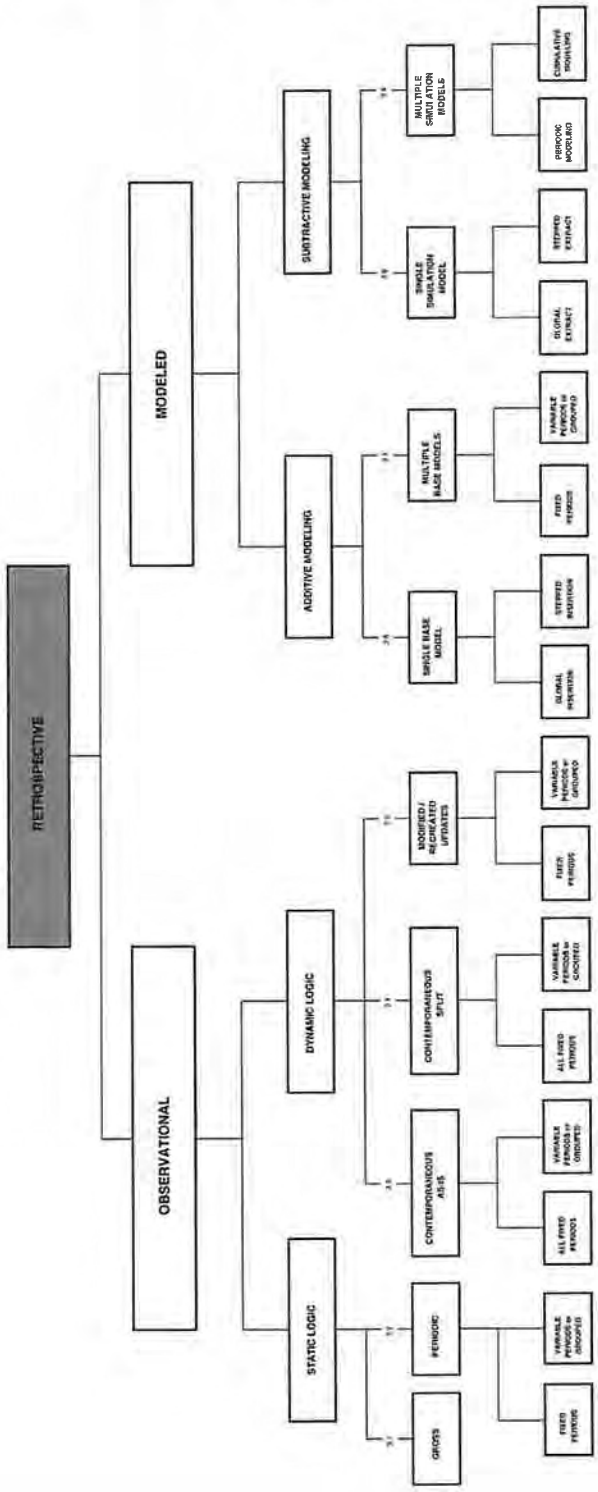
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

APPENDIX A: FIGURE 1 - NOMENCLATURE CORREPONDENCE FIGURE



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

APPENDIX B: FIGURE 2 - TAXONOMY OF FORENSIC SCHEDULE ANALYSIS



Copyright 2011 AACE® International, Inc.

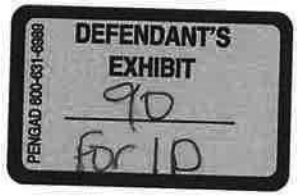
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

DEFENDANT LIBRARY ASSOCIATES, LLC'S

TRIAL EXHIBIT #90

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108



ASCE STANDARD

ANSI/ASCE/CI

67-17

Schedule Delay Analysis

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

CI ASCE CONSTRUCTION INSTITUTE

Approved American National Standard
ANSI

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ASCE STANDARD

ANSI/ASCE/CI

67-17

Schedule Delay Analysis

PUBLISHED BY THE AMERICAN SOCIETY OF CIVIL ENGINEERS

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

Library of Congress Cataloging-in-Publication Data

Names: American Society of Civil Engineers, author.
Title: Schedule delay analysis.
Description: Reston, Virginia : American Society of Civil Engineers, [2017] | "ASCE STANDARD ANSI/ASCE/CI 67-17." | Includes bibliographical references and index.
Identifiers: LCCN 2017023374 | ISBN 9780784414361 (soft cover : alk. paper) | ISBN 9780784480861 (PDF)
Subjects: LCSH: Building–Superintendence–Standards. | Production scheduling–Standards.
Classification: LCC TH438.4.A44 2017 | DDC 692–dc23 LC record available at https://lccn.loc.gov/2017023374

Published by American Society of Civil Engineers
1801 Alexander Bell Drive
Reston, Virginia, 20191-4382
www.asce.org/bookstore | ascelibrary.org

This standard was developed by a consensus standards development process that has been accredited by the American National Standards Institute (ANSI). Accreditation by ANSI, a voluntary accreditation body representing public and private sector standards development organizations in the United States and abroad, signifies that the standards development process used by ASCE has met the ANSI requirements for openness, balance, consensus, and due process.

While ASCE's process is designed to promote standards that reflect a fair and reasoned consensus among all interested participants, while preserving the public health, safety, and welfare that is paramount to its mission, it has not made an independent assessment of and does not warrant the accuracy, completeness, suitability, or utility of any information, apparatus, product, or process discussed herein. ASCE does not intend, nor should anyone interpret, ASCE's standards to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this standard.

ASCE has no authority to enforce compliance with its standards and does not undertake to certify products for compliance or to render any professional services to any person or entity.

ASCE disclaims any and all liability for any personal injury, property damage, financial loss, or other damages of any nature whatsoever, including without limitation any direct, indirect, special, exemplary, or consequential damages, resulting from any person's use of, or reliance on, this standard. Any individual who relies on this standard assumes full responsibility for such use.

ASCE and American Society of Civil Engineers—Registered in U.S. Patent and Trademark Office.

Photocopies and permissions. Permission to photocopy or reproduce material from ASCE publications can be requested by sending an e-mail to permissions@asce.org or by locating a title in ASCE's Civil Engineering Database (http://cedb.asce.org) or ASCE Library (http://ascelibrary.org) and using the "Permissions" link.

Errata: Errata, if any, can be found at https://doi.org/10.1061/9780784414361.

Copyright © 2017 by the American Society of Civil Engineers.
All Rights Reserved.
ISBN 978-0-7844-1436-1 (soft cover)
ISBN 978-0-7844-8086-1 (PDF)
Manufactured in the United States of America.

24 23 22 21 20 19 18 17 1 2 3 4 5

ASCE STANDARDS

In 2014, the Board of Direction approved revisions to the ASCE Rules for Standards Committees to govern the writing and maintenance of standards developed by ASCE. All such standards are developed by a consensus standards process managed by the ASCE Codes and Standards Committee (CSC). The consensus process includes balloting by a balanced standards committee and reviewing during a public comment period. All standards are updated or reaffirmed by the same process every five to ten years. Requests for formal interpretations shall be processed in accordance with Section 7 of ASCE Rules for Standards Committees, which are available at www.asce.org. Errata, addenda, supplements, and interpretations, if any, for this standard can also be found at www.asce.org.

The form of this Standard reflects the goals of the Schedule Delay Analysis Standards Committee of the Construction Institute of ASCE. The provisions of this document are written in permissive language and, as such, offer to the user a series of options or instructions but do not prescribe a specific course of action. Significant judgment is left to the user of this document.

This standard has been prepared in accordance with recognized engineering principles and should not be used without the user's competent knowledge for a given application. The publication of this standard by ASCE is not intended to warrant that the information contained therein is suitable for any general or specific use, and ASCE takes no position respecting the validity of patent rights. The user is advised that the determination of patent rights or risk of infringement is entirely their own responsibility.

A complete list of currently available standards is available in the ASCE Library (http://ascelibrary.org/page/books/s-standards).

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

CONTENTS

ACKNOWLEDGMENTS vii

1 INTRODUCTION 1

2 SCOPE 3

3 DEFINITIONS 5

4 CRITICAL PATH 7
- 4.1 Because the Critical Path Is Dynamic, Delays Should Be Evaluated Based on the Critical Path During Each Delay 7
- 4.2 Contemporaneous Schedules Should Be Maintained to Reflect Actual Performance, the Plan to Complete the Work, and Delay, Should It Occur 7
- 4.3 Delay Must Be Critical to the Current Adjusted Completion Date for Consideration of a Time Extension 7
- 4.4 Delay Should Generally Be Measured by the Change to the Scheduled Completion Date Caused by the Delay 7
- 4.5 Excusable Delays Are Typically Events Outside the Contractor's Control and Entitle the Contractor to a Time Extension 8
- 4.6 In Situations Where the Completion Date Is Adjusted Properly for Change Orders and the Contractor Is Behind Schedule, Owner Delays that Occur Thereafter on a Separate Path May Have a Mitigating Effect on Assessment of Damages 8
- 4.7 For a Delay to Be Compensable, It Should Be the Sole Cause of Delay 8

5 FLOAT 9
- 5.1 Activities with Float Are Not Critical 9
- 5.2 Float Is Owned by the Project 9
- 5.3 Excessive Constraints on Activities that Interfere with a Logic-Driven Critical Path May Complicate Evaluation of Critical Delays and Should Be Considered in a Delay Analysis 9
- 5.4 If Multiple Milestones Have Delay Damages Associated with Them, a Separate Delay Analysis Should Be Performed for Each Milestone 9

6 EARLY COMPLETION 11
- 6.1 A Plan to Finish Early Should Be Reasonable 11
- 6.2 Generally, the Contractor May Be Allowed to Collect Delay Damages to an Early Completion Schedule but May Not Collect an Excusable Time Extension Until the Scheduled Completion Date Exceeds the Contract Completion Date 11

7 CHRONOLOGY OF DELAY 13
- 7.1 Delays Should Be Evaluated as They Occur in Chronological Sequence 13
- 7.2 A Schedule Delay Analysis Should Reflect an Analysis of Prior Entitlement so as to Reflect a Current Adjusted Completion Date Prior to Evaluating Delay 13
- 7.3 Consideration Should Be Included as to How Delays Were Evaluated by the Participants During the Project 13
- 7.4 Evaluation of Delay Chronology Should Be Documented and Supported with Contemporaneous Records 13

8 CONCURRENT DELAY 15
- 8.1 Concurrent Delay Can Be Described as a Situation Where Two or More Critical Delays Are Occurring at the Same Time During All or a Portion of the Delay Time Frame in Which the Delays Are Occurring 15
- 8.2 Concurrent Delay Typically Is Excusable but Noncompensable, Meaning a Time Extension Is Given but No Costs Are Recovered by Either Party 15
- 8.3 Concurrent Delay Should Be Apportioned Where Possible 15

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

R - 16752

9 RESPONSIBILITY FOR DELAY 17
9.1 A Schedule Expert Typically Can Identify the Party Responsible for a Delay from the Contemporaneous Records, Interviewing Project Personnel, and Reading Deposition Testimony, and May Rely on Technical Experts or Fact Witnesses in Opining on Liability 17
9.2 During a Project, the Contractor Should Provide the Owner with a Notice of Delay for Excusable Delays, Followed by a Request for a Change in Accordance with the Contract 17
9.3 Responsibility Analysis Should Be Supported by a Factual Chronology Based on the Contemporaneous Project Performance Records and Referencing the Remedy-Granting Clause of the Contract. 17
9.4 The Schedule Expert Should Attempt to Discuss the Issue with the Individual Directly Involved and Who Has Factual Knowledge of the Delay Issue, Where Feasible 17
9.5 Schedule Experts Should Not Opine Beyond Their Expertise. If Necessary, a Technical Expert Should Be Engaged on Whose Opinion the Schedule Expert Can Rely 18
9.6 Once a Technical Expert's Finding as to Which Party Was Liable for the Delay Event Is Formed, a Legal Review May Be Made with Counsel Consistent with Legal Precedent in the Project Jurisdiction 18

10 CHANGING SCHEDULES AFTER THE FACT. 19
10.1 The Schedules Should Be Presumed Correct as They Were Used During the Project, Unless Otherwise Shown to Be Inaccurate 19
10.2 After-the-Fact Changes to Schedules Used During the Project Should Be Minimized and Only Made Where Necessary 19
10.3 Any Changes Made to the Contemporaneous Record of Project Schedules Should Be Carefully Identified and Documented 19
10.4 When Possible, the Preference for Dealing with Inaccurate Schedules After the Fact Is to Make Corrections, Rather than Abandon the Schedules, Subject to the Nature and Scope of the Corrections 20
10.5 Changes to Schedules Generally May Be Made to Correct Necessary Physical or Contractual Constraints but Typically Not the Contractor's Preferential Sequencing 20

11 ACCELERATION 21
11.1 Parties Have the Right to Voluntarily Accelerate, Subject to Contract Terms and Conditions 21
11.2 For Owner-Directed Acceleration, the Parties Should Agree on the Acceleration Plan Prior to Implementation. The Right to Direct Acceleration Unilaterally Should Be Addressed by Contract 21
11.3 Constructive Acceleration Can Be Proved 21
11.4 When Implementing an Acceleration Plan, Acceleration of Multiple Paths in the Schedule May Be Required 21

12 REFERENCES 23

INDEX 25

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

R - 16753

ACKNOWLEDGMENTS

The American Society of Civil Engineers (ASCE) acknowledges the contributions of the Schedule Delay Analysis Standard Committee of the Construction Institute in assisting with development of this ASCE industry standard.

Robert M. D'Onofrio, P.E., *Chair*
John C. Anderson, P.E.
David Arditi, Ph.D.
Jesus M. de la Garza, Ph.D.
Thomas J. Driscoll
Brian J. Furniss, P.E., PSP, CFCC
David W. Halligan, P.E.
John P. Lamutt, P.E.
Frank J. Regnery, P.E.
Mark Sanders, P.E.
Ted M. Scott, III, P.E.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

R - 16754

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

CHAPTER 1
INTRODUCTION

Critical path method (CPM) schedules, properly prepared and maintained, make it possible to demonstrate, with reasonable certainty, the impact that can occur as a result of delays on a project. Delays can be reasonably identified, isolated, and quantified, and concurrent delays segregated. CPM networking techniques can be of evidential value to demonstrate causation and liability and also to apportion delays when concurrent delays occur.

It is important for project participants to understand not only the techniques of scheduling but also that a project schedule can serve as a basis for delineating the respective rights, obligations, and warranties flowing from the schedule. A number of key issues are associated with a project schedule that have legal implications.

Also, it is important to keep the project schedule properly updated and the contract completion date timely adjusted for excusable delays. It is equally important for all parties to settle any delays and cost issues associated with changes contemporaneously. The project schedule should be revised to reflect actual performance, major changes, and delays as they occur. The contract completion date also should be adjusted for contemporaneous time extensions.

A number of schedule delay analysis methods are used in the industry. Any method used should follow the industry guidelines identified in this standard.

The 35 guidelines included in this standard generally reflect best engineering principles associated with schedule delay analysis and reflect standard of practice in the United States construction industry. However, individual cases may not follow the general standard. Parties should check the construction contract carefully for notice provisions, exculpatory clauses, and requirements for proof of delays. Less preferred risk-averse contracts attempt to shift the risk of delays and time extensions to one party, which can lead to disputes in contrast to the equitable and fair risk allocation.

This standard should be used in accordance with the schedule practitioner's professional experience and knowledge, along with facts specific to the reference project. Any legal cases referenced in this standard are for additional information only, and their relevance or application to a specific project or jurisdiction requires consultation of a duly licensed legal professional.

R - 16755

CHAPTER 2
SCOPE

The 35 guidelines in this standard allow for segmentation of responsibility for delay to intermediary milestones and to the project completion date. They also enable delay damages or liquidated damages to be calculated by utilizing critical path method schedule techniques and preparing a schedule delay analysis. The guidelines in this standard are based on principles of schedule delay analysis in the following categories:

- Critical path,
- Float,
- Early completion,
- Chronology of delay,
- Concurrent delay,
- Responsibility for delay,
- Changing schedules after the fact, and
- Acceleration.

The application of such principles should be based on the terms of the contract, contract administration, consistency in application, and legal precedent.

These standard guidelines provide commentary, support for, and explanations of this ASCE standard committee's list of guidelines. The definitions of terms is included for reference as used within the context of this standard.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

CHAPTER 3
DEFINITIONS

Acceleration—The process of expending additional resources and/or costs to expedite contract performance. Typical examples of acceleration include adding crews, adding equipment, increasing work hours, increasing work days, increasing resources, and expediting material delivery times.

Apportionment—The act of dividing and assigning a share or responsibility for controlling delay or cost.

Concurrent—Happening at the same time; existing side by side; operating at the same time.[1]

Concurrent delay—Delay to the project critical path caused concurrently by multiple events not exclusively within the control of one party.[2]

Contract completion date—The date required by contract for substantial completion of the contract (or, in some cases final completion). The contract may attach liquidated damages to failure to meet the contract completion date. In a schedule, the scheduled completion date typically is constrained to the contract completion date.

Contract milestone—A contractually required date for partial completion of the work, which is also referred to as an intermediary milestone. The contract may attach liquidated damages to failure to meet intermediary contract milestones.

Critical delay—A delay that causes an impact to the project completion date.

Critical path—The series of logically connected tasks that define the minimum overall duration for completion of the project, also known as the longest path. There can be more than one critical path in the schedule.

Critical activities—Activities with zero or negative float in a schedule reflecting a current adjusted completion date, some of which may not be on the critical path.

Current adjusted completion date—A contractually required completion date adjusted to reflect prior excusable delay.

Delay—To impede the process or progress (work).[3]

Float—The time contingency that exists on a path of activities. Float refers to "total float" unless otherwise specified. Total float is the amount of time an activity can be delayed before it delays the completion date in the CPM network. It is measured by comparing the early and late dates on a start or finish basis. It is possible when using precedence networking that the effective float can vary between the early dates and the late dates for an activity when leads and lags are used.

Longest path—Path through a logic-driven schedule controlling the scheduled or anticipated completion of the work. This also is referred to as the critical path.

Offsetting delay—A delay that may occur when a contractor is behind schedule and the owner later causes a delay to the contract completion date. Time entitlement and damages depend on the measure of delay caused by each party.

Scheduled completion date—The anticipated or predicted date that estimates when work on the project will be complete. This date may differ from the contract completion date depending on schedule progress and delay.

[1] Garner (2004).

[2] Bruner & O'Connor on Construction Law § 15:67 (May 2007).

[3] Dictionary.com (2014).

R - 16757

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

CHAPTER 4
CRITICAL PATH

Typical construction contracts require that delays be critical to justify a time extension. How the critical path is defined influences quantification of delay and ultimately whether a party was damaged by a delay. The critical path may change during the course of the project. Activities that were critical at one point in the project may later become not critical and vice versa. The following guidelines are intended to assist schedule experts in evaluating and determining how the critical path is used in a schedule delay analysis.

4.1 BECAUSE THE CRITICAL PATH IS DYNAMIC, DELAYS SHOULD BE EVALUATED BASED ON THE CRITICAL PATH DURING EACH DELAY

The critical path is dynamic and may change during the course of the project depending on when the project status is evaluated and completion is forecasted. Critical path method (CPM) techniques are the industry's preferred practice for planning how to best complete a project. They are also extremely useful in determining the effects of delays and changes to the project. The critical path may shift throughout the course of construction on the basis of delays, progress, and circumstances resulting in changes to the plan at different times on the project. These changes are intended to be identified and tracked in contemporaneous project schedules.

4.2 CONTEMPORANEOUS SCHEDULES SHOULD BE MAINTAINED TO REFLECT ACTUAL PERFORMANCE, THE PLAN TO COMPLETE THE WORK, AND DELAY, SHOULD IT OCCUR

For use in a schedule delay analysis, an accurate status of the project should be assessed. An accurate status of the project may be assessed primarily if the schedules are kept up to date, reflecting work taking place in the field, delays, and the sequence of remaining work to be performed. Contemporaneous schedule updates should be maintained reflecting all changes and should include changes to the critical path, the creation and consumption of float, baseline adjustments, changes based on contemporaneous decisions made by the participants, and the plan to complete all remaining work.

4.3 DELAY MUST BE CRITICAL TO THE CURRENT ADJUSTED COMPLETION DATE FOR CONSIDERATION OF A TIME EXTENSION

When assessing a delay that has occurred, one needs to consider prior and pending entitlements. When evaluating a delay, it is recommended to check schedule updates to determine the completion date and any pending excusable delays that need to be considered. The delay could be critical at the project level or for a certain contractor's scope of work depending on established contractual milestones.

Different contract milestones may have an excusable delay to each milestone, which needs to be evaluated separately for criticality. Excusable delays to contract milestones that are not the contract completion date typically will not provide a contractor with additional compensation for delay; only an excusable time extension will be granted to offset liquidated damages to that milestone. However, there may be exceptions where the contractor incurs separate costs tied specifically to that milestone.

4.4 DELAY SHOULD GENERALLY BE MEASURED BY THE CHANGE TO THE SCHEDULED COMPLETION DATE CAUSED BY THE DELAY

Delay should generally be evaluated by comparing the schedules before, during, and after the delay.[4] Critical delay can be shorter or longer than the delay (impacting event). Examples of critical delays shorter than the impacting event are when the impacting event absorbs float or succeeding activities are able to progress without further effects from the impacting event. Examples of critical delay longer than the impacting event can include when the impacting event pushes the contractor into a constrained work period or requires reordering of long lead time materials. The effects of a critical path delay also may affect the progress of work on noncritical paths.[5]

In the event of major concerns with the accuracy of the schedules, expert analysis may be required after the fact to determine whether adjustments are necessary or an alternative method for evaluating delay is to be used.[6]

Measuring changes to the projected completion date between updates accounts for ordinary mitigation efforts that may have been made to reduce any prior delay in the schedule. Acceleration measures that require additional cost may be identified separately from the delay quantification.

---

[4] See, e.g., George Sollitt Const. Co. v. U.S., 64 Fed. Cl. 229, 252 (2005) "The better methodology for a critical path delay analysis is to use the updated CPM schedules, not the baseline schedule prepared before construction began. See Blinderman, 39 Fed.Cl. at 585 (stating that 'the only way to accurately assess the effect of the delays alleged . . . on the . . . project's progress is to contrast updated CPM schedules prepared immediately before and immediately after each purported delay'); Fortec, 8 Cl.Ct. at 505 (stating that 'if the CPM is to be used to evaluate delay on the project, it must be kept current and must reflect delays as they occur'); Sollitt Br. at 44 (admitting that Sollitt prepared the updated analysis 'in recognition of the widely accepted practice of using the updated schedules for the analys[i]s')."

[5] In some cases, delay analysis to separate milestone dates may be required.

[6] For more information on changing project schedules for a delay analysis, see Chapter 10, Changing Schedules After the Fact.

R - 16758

4.5 EXCUSABLE DELAYS ARE TYPICALLY EVENTS OUTSIDE THE CONTRACTOR'S CONTROL AND ENTITLE THE CONTRACTOR TO A TIME EXTENSION

Excusable delays typically include third-party events, force majeure events, unusually severe weather, and owner-caused delays. Excusable delays mean that the contractor is entitled to a time extension for critical delay to a contractual completion date. Excusable delays may be noncompensable or compensable depending on the provisions of the contract. Typically, delays outside the control of both the owner and the contractor are excusable but noncompensable.

4.6 IN SITUATIONS WHERE THE COMPLETION DATE IS ADJUSTED PROPERLY FOR CHANGE ORDERS AND THE CONTRACTOR IS BEHIND SCHEDULE, OWNER DELAYS THAT OCCUR THEREAFTER ON A SEPARATE PATH MAY HAVE A MITIGATING EFFECT ON ASSESSMENT OF DAMAGES

In certain situations when the current as adjusted contract completion date has passed or the current updated schedule is projecting a completion date that is later than the contract completion date, owner-responsible delays occurring thereafter may mitigate the assessment of liquidated damages. This type of delay is referred to as "offsetting delay," recognizing that an owner-caused delay may result in recognizing a noncompensable time extension to offset all or a portion of any potential liquidated damages.

Delay damages can be measured and determined by the effect of each path on activities that impact the current contract completion date, based on chronology of delay, responsibility for delay, magnitude of delay, and how both contractor and owner delays affect the current contract completion date at specific times. Such situations may affect the assessment of owner damages previously projected as a result of the contractor's late performance and the owner's right to assess damages for late completion.

4.7 FOR A DELAY TO BE COMPENSABLE, IT SHOULD BE THE SOLE CAUSE OF DELAY

For compensable delay, the delaying event should be the sole cause of longest path delay. Typically, a delay solely caused by the owner is required to qualify as compensable. However, third-party delay may be compensable depending on the provisions of the contract. For compensable delay, the delay should extend the scheduled completion date of the project. For example, activities with float can fall on the longest path because of schedule constraints and multiple calendars (e.g., weekend nonwork restrictions), and critical activities can fall on paths of work that are not the longest path (again because of constraints and multiple calendars).

Delay to intermediary contract milestones typically do not result in additional delay costs, because the contractor would have been on-site until completion of the project, and as a result, delays to intermediary milestones are not typically compensable to the contractor, even if excusable. However, liquidated damages attached to intermediary milestones by contract may be assessed for failure to meet each milestone and may be cumulative.

In some cases where multiple subcontractors or multiple prime contractors are simultaneously responsible for delay, the contractor or owner may still be able to recover its costs split between the responsible parties as long as the claiming party had no fault or responsibility for delay during the period claimed.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

R - 16759

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

CHAPTER 5
FLOAT

There are several types of float, including "total float" and "free float." The most useful for delay analysis is total float. Float generally refers to total float unless specified otherwise. Generally, total float is the amount of time an activity can be delayed before it delays the contract completion date in the CPM network.[7] Total float is the mathematical difference between late dates and early dates for each activity.[8] The calculated early dates (early start and early finish) track the earliest dates each activity can take place by the logic in the schedule. The late dates (late start and late finish) are the latest scheduled finish dates each activity can take place while still finishing by the constrained completion date[9] and proceeding backward (i.e., "the backward pass") through the CPM network until it reaches the earliest activity. Total float tracks completion in relation to the latest scheduled finish date in the CPM network.[10] When the constrained completion date is earlier than the earliest finish date of the network, total float becomes negative. The following guidelines reflect general use of float in a schedule analysis.

5.1 ACTIVITIES WITH FLOAT ARE NOT CRITICAL

Generally, just because an activity falls on the longest path does not necessarily mean it is critical. Activities with float can fall on the longest path, and critical activities with no float can fall on paths that are not the longest path.[11] For example, the use of multiple calendars may result in additional float on activities that fall on the longest path and cause fluctuation between float values along a continuous path of work.

5.2 FLOAT IS OWNED BY THE PROJECT

In the absence of contract language shifting float "ownership," float is owned by the project. This means that float goes to the first party to use it. Other methods of allocating float to different parties are available but should be specified by the contract for use in delay evaluation. Whereas contract provisions may make float only available to one party, it may be difficult to recover delay damages from the other party when delays solely absorb float with no impact to the completion date.

5.3 EXCESSIVE CONSTRAINTS ON ACTIVITIES THAT INTERFERE WITH A LOGIC-DRIVEN CRITICAL PATH MAY COMPLICATE EVALUATION OF CRITICAL DELAYS AND SHOULD BE CONSIDERED IN A DELAY ANALYSIS

Excessive constraints on activities that interfere with a logic-driven critical path should generally be avoided. In a constrained schedule, total float may be driven by constrained dates instead of the project end date. This becomes even more confusing when multiple constraints are used in the schedule, because which constrained date the total float value relates to must be determined, as there may be several in the CPM network. As a result, the use of constraints complicates the use of total float as a time-prioritizing tool. Particularly, the use of specified constraints on individual activities or specifying float values on individual activities may interrupt a logic-driven critical path and is not preferred.

5.4 IF MULTIPLE MILESTONES HAVE DELAY DAMAGES ASSOCIATED WITH THEM, A SEPARATE DELAY ANALYSIS SHOULD BE PERFORMED FOR EACH MILESTONE

Float values are affected by different constraints in the CPM network. In instances where the schedule contains milestone constraints, it may be more accurate to identify the critical path through the subject milestone or the activities that must be progressed to keep that milestone on time.

---

[7] Absent multiple constraints in the schedule.

[8] However, the start float and finish float may be different as a result of schedule constraints and logic ties.

[9] In an unconstrained schedule, the latest scheduled activity date is used, and there would be no negative float in the schedule.

[10] For example, if the latest scheduled finish date in the CPM network is Activity 500, *Project Completion*, then the total float values are relevant to prioritizing time for *Project Completion*. If the latest scheduled finish date in the CPM network is Activity 600, *1-Year Landscape Maintenance*, then the total float values are relevant to prioritizing time for *1-Year Landscape Maintenance*.

[11] For additional examples and explanation, see D'Onofrio, R. M. (2009). "Can there be float on the critical path?" *Under Construction*, 11(3) 1, 4–5. See also Furniss, B. J., and Trauner, T. J. (2010). "The critical path: Definition vs. understanding, *Construct!* 19(1) 2–5.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

CHAPTER 6
EARLY COMPLETION

Generally, the contractor has the right to finish early. The owner gains the benefit of early project use, and the contractor gets off-site and no longer incurs general conditions costs. The additional contractor cost savings of early completion also are reflected in a lower bid price anticipating early completion. Although the owner should not have to spend additional costs to meet a contractor's early completion schedule, the owner should not interfere with the contractor's ability to finish early.

6.1 A PLAN TO FINISH EARLY SHOULD BE REASONABLE

Parties should address early completion as early in the project as possible. It is good practice for the contractor to inform the owner that the contractor plans on finishing early. An owner should review and validate the potential of the contractor to finish early. If an owner takes exception, the owner should inform and discuss this with the contractor before making a decision to acknowledge the contractor's intent. For the contractor to recover compensation for compensable delays prior to the contract completion date, the contractor's plan to perform the work and finish prior to the contract completion should be reasonable and achievable.

6.2 GENERALLY, THE CONTRACTOR MAY BE ALLOWED TO COLLECT DELAY DAMAGES TO AN EARLY COMPLETION SCHEDULE BUT MAY NOT COLLECT AN EXCUSABLE TIME EXTENSION UNTIL THE SCHEDULED COMPLETION DATE EXCEEDS THE CONTRACT COMPLETION DATE

If entitlement and responsibility are shown, a contractor should generally be able to collect delay damages for compensable delay to an early completion schedule. However, a contractor would not be granted an excusable time extension to the contract completion date until the scheduled completion date is delayed beyond the contract completion date. If the parties intend otherwise, they should agree on how to assess delays to the early finish date.[12]

Any delay to the early completion date that is still prior to the contract completion date and beyond the control of the contractor should be addressed and documented contemporaneously using delay analysis procedures and providing supporting documentation.

[12] This includes whether the buffer between early completion and contract completion is available for the contractor's exclusive use. If it is not, parties should consider a change order adjusting the completion date or adding a contractor schedule contingency activity with a duration equal to the difference between the early finish and the contract schedule completion date. Critical contractor delays reduce contingency until it expires. Owner critical delays adjust both the early finish date and the contract completion date.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

CHAPTER 7
CHRONOLOGY OF DELAY

The chronology of delay is defined as the order in which delays should be considered in a schedule evaluation. Chronology of delay is an important part of a critical path analysis as the basis for segregation of delays to allow related costs and time impacts to be attributed to the parties involved. A chronological evaluation is critical in determining when events occurred, their impact on the contemporaneous project schedules, and the contemporaneous decisions made by the parties, emphasizing the importance of keeping project records and schedule updates throughout the project. The schedule is not static and changes continually on the basis of events as they unfold on a project, and this must be reflected in a proper evaluation of project delays.

The following guidelines reflect an understanding of the chronology of the delays and potential mitigation efforts that can be incorporated in a contract or specification to mitigate uncertainty in evaluation method.

7.1 DELAYS SHOULD BE EVALUATED AS THEY OCCUR IN CHRONOLOGICAL SEQUENCE

Generally, delays should be evaluated chronologically and cumulatively in the order in which they occur on the project. The delay recognized to have started first in time that affects the schedule will be fully evaluated until that delay is resolved. This may have no impact on the critical path or directly affect or change the critical path. It may absorb float on one or more paths and/or create float on others. Likewise, changes to the work through change orders should be incorporated into the schedules as they occur, whether they have a direct overall schedule impact to the critical path or they only reflect the absorption of float.

7.2 A SCHEDULE DELAY ANALYSIS SHOULD REFLECT AN ANALYSIS OF PRIOR ENTITLEMENT SO AS TO REFLECT A CURRENT ADJUSTED COMPLETION DATE PRIOR TO EVALUATING DELAY

Typically, engineering and construction decisions regarding delays are made as each occurs, and the delay analysis should follow the same logic. Each delay evaluation is based on the then-current conditions, which would include any schedule impacts from prior delays, along with any schedule revisions on the project. Decisions on a project are made with the available information at the time. Evaluation of impacts caused by prior delays should be included in the schedule delay analysis to be able to distinguish the impact of the current delay from prior impacts.

Using a current, updated, and adjusted schedule prior to delay evaluation is consistent with the critical path and concurrent delay principles outlined in Chapters 4 and 8. Delays considered in sequence are evaluated chronologically. Similarly, the schedule needs to be updated and adjusted prior to evaluating concurrent delays. For more information on evaluating concurrent delays, see the guidance in Chapter 8.

7.3 CONSIDERATION SHOULD BE INCLUDED AS TO HOW DELAYS WERE EVALUATED BY THE PARTICIPANTS DURING THE PROJECT

Schedule delay evaluations should consider the information available to project participants at the time of the delay. That information may define the actions of the various parties with regard to decisions made on the project. Actions taken by the participants during the project could have a direct impact on the schedule, determination of damages, and the right of one party over the other to recover damages.

Although delay events should be recognized and measured during the project as the project progresses, in practice they are not always identified contemporaneously. During expert analysis, the more common industry practice is to measure the delays in an after-the-fact analysis, which more accurately defines the delay events that occurred on a project. Although this process may reveal what may be considered bad decisions with hindsight, contemporaneous decisions affecting project delay still may be justifiable.

7.4 EVALUATION OF DELAY CHRONOLOGY SHOULD BE DOCUMENTED AND SUPPORTED WITH CONTEMPORANEOUS RECORDS

Documenting the chronological order of delays is an important aspect of delay analysis. This requires a factual analysis of each delay based on the contemporaneous documentation confirming the order and relationship of delays involved. Whether a particular delay is compensable or to whom responsibility is attributable should not be the controlling factor on which delay is evaluated first.[13]

[13] For more information on changing project schedules for a delay analysis, see Chapter 10, Changing Schedules After the Fact.

R - 16762

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

CHAPTER 8
CONCURRENT DELAY

In general terms, concurrent delay can be described as a situation where two or more critical delays are occurring at the same time during all or a portion of the delay time frame in which the delays are occurring. Concurrent delay is a position often taken by both contractors for avoidance of liquidated damages and owners for mitigation of contractor claims for compensable delay.

Whether such delays are excusable depends on the terms of the contract, chronological sequence of the delays involved, cause of delays, responsibility for delays, timing and duration of the delays, availability of float, and the effect any delay has on a contract milestone or the project completion date.

The guidelines in this section reflect an understanding of concurrent delay, how it can have differing effects, and how it can be apportioned.

8.1 CONCURRENT DELAY CAN BE DESCRIBED AS A SITUATION WHERE TWO OR MORE CRITICAL DELAYS ARE OCCURRING AT THE SAME TIME DURING ALL OR A PORTION OF THE DELAY TIME FRAME IN WHICH THE DELAYS ARE OCCURRING

There are different situations in which concurrent delays may occur. For example, there is the situation with two separate delays by an owner and a contractor (two parties), each simultaneously delaying work on separate critical paths. There can be more than two parties concurrently delaying a contract milestone or the project completion date. Concurrent delays do not need to have the same start or finish dates.

8.2 CONCURRENT DELAY TYPICALLY IS EXCUSABLE BUT NONCOMPENSABLE, MEANING A TIME EXTENSION IS GIVEN BUT NO COSTS ARE RECOVERED BY EITHER PARTY

For the purposes of assessing liquidated damages, the general rule is that contractors will not be charged for critical delays they cause that are concurrent with owner-caused critical delays that cannot be apportioned in terms of responsibility and damages.

Likewise, an owner will not be responsible for a contractor's delay damages when the contractor simultaneously caused critical delay that is concurrent with owner-caused critical delay of equal time that cannot be apportioned.

8.3 CONCURRENT DELAY SHOULD BE APPORTIONED WHERE POSSIBLE

Conditions that allow concurrent delays to be apportioned include situations where there is overlapping of simultaneous delays on the start or finish of either delay or both. Another is when one or more of the simultaneous delays are absorbed partially by available float on an activity path before they become critical. A further example is when one or more of the simultaneous delays have different start or finish dates and one or more are critical activities.

To consider apportionment of concurrent delays, consideration needs to be given to facts, criticality, timing, responsibility for delay, duration of delay, method used to measure delay, and ability to mitigate.

R - 16763

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

CHAPTER 9
RESPONSIBILITY FOR DELAY

After the impact of a delay event has been quantified, opining on which party was responsible for the delay event often falls to a schedule expert. This assessment is ultimately necessary for determining entitlement and aiding in determining quantum.

9.1 A SCHEDULE EXPERT TYPICALLY CAN IDENTIFY THE PARTY RESPONSIBLE FOR A DELAY FROM THE CONTEMPORANEOUS RECORDS, INTERVIEWING PROJECT PERSONNEL, AND READING DEPOSITION TESTIMONY, AND MAY RELY ON TECHNICAL EXPERTS OR FACT WITNESSES IN OPINING ON LIABILITY

Responsibility for delay can be classified as

- Owner-caused,
- Contractor-caused, or
- Beyond the control of the parties involved (i.e., third-party-caused).

Determination of responsibility requires a review of the contract and also may require outside expertise on specific issues or a legal opinion. Examples of owner responsibility for delay may include directed or other changes that have merit, late approvals (shop drawings, schedule, changes, etc.), late owner-furnished equipment, late site access, delay in acquiring right of way, suspension of work, or actions or the lack of actions of the owner's agents (architect, engineer, construction manager, or specialty consultant), and regulatory and sponsor agencies.

Contractor-caused delays may include late performance, defective and corrective work, late shop drawings, late equipment or material deliveries, poor subcontractor performance or financial failure, labor issues, or failure to schedule and coordinate subcontractors.

There are also delays beyond the control of the parties. Examples include unusually severe weather[14] and force majeure events. The excusability and compensability of these issues may depend on the contract.

9.2 DURING A PROJECT, THE CONTRACTOR SHOULD PROVIDE THE OWNER WITH A NOTICE OF DELAY FOR EXCUSABLE DELAYS, FOLLOWED BY A REQUEST FOR A CHANGE IN ACCORDANCE WITH THE CONTRACT

Determination of delay responsibility on a contemporaneous basis is essential for owners and contractors to manage a project successfully. When a contractor believes a delay is occurring or has occurred and for which that contractor has no responsibility, the contractor has the burden of proof to support a request for additional time (and potentially, additional cost) by preparing a time extension analysis using the project schedule to demonstrate the delay.

9.3 RESPONSIBILITY ANALYSIS SHOULD BE SUPPORTED BY A FACTUAL CHRONOLOGY BASED ON THE CONTEMPORANEOUS PROJECT PERFORMANCE RECORDS AND REFERENCING THE REMEDY-GRANTING CLAUSE OF THE CONTRACT

Determination of delay responsibility also can occur on an after-the-fact basis. Typically this is achieved as part of an overall and comprehensive schedule and delay analysis prepared for pursuing or defending a claim involving delay, impact, disruption, acceleration, cumulative impact, or liquidated damages. Proof of delay generally requires an overall determination of excusable and nonexcusable delay and compensable and noncompensable delay, identifying any concurrent delay that is involved and mitigating compensability, proof of any acceleration claimed, or any determination of liquidated damages.

The chronology generally should be supported by project records. Some examples of project records include daily logs, RFIs, photographs, change directives, drawings and specifications, schedules, or test reports. The schedule expert should check the construction contract carefully for provisions related to the delay event. Typical provisions include the notice, changes, differing site conditions, and force majeure clauses.

It should be noted that it is not always expected for the schedule expert to assess liability on an after-the-fact basis. Therefore, a schedule expert should confer with legal counsel before opining in this regard.

9.4 THE SCHEDULE EXPERT SHOULD ATTEMPT TO DISCUSS THE ISSUE WITH THE INDIVIDUAL DIRECTLY INVOLVED AND WHO HAS FACTUAL KNOWLEDGE OF THE DELAY ISSUE, WHERE FEASIBLE

Generally, it is good practice to discuss an issue with project personnel who are directly involved in dealing with that issue during the project for knowledge and background information on the associated issue where accessible. This information may be helpful in preparation of the delay analysis and associated determination of causation and responsibility. The schedule expert should not solely rely on interviews with project personnel, but consider them within the context of contemporaneous project records.

[14] Ordinary weather is typically the responsibility of the contractor, and adverse weather must be unusually severe to warrant a time extension as outside the control of either party.

R - 16764

9.5 SCHEDULE EXPERTS SHOULD NOT OPINE BEYOND THEIR EXPERTISE. IF NECESSARY, A TECHNICAL EXPERT SHOULD BE ENGAGED ON WHOSE OPINION THE SCHEDULE EXPERT CAN RELY

Schedule experts typically can identify the party responsible for a delay from the contemporaneous project records.

However, in some instances, the determination of liability will require technical engineering or constructability expertise (e.g., differing site conditions, structural calculations, etc.). In such cases, schedule experts should take care not to opine beyond their capabilities and instead rely on the opinion of other technical experts or even fact witnesses.

When these technical issues arise, professional expertise should be engaged to conduct an investigation and fact finding of the issue to determine the contractual and legal basis for identifying responsibility and to identify the particulars that will be required to establish and prove such responsibility.



9.6 ONCE A TECHNICAL EXPERT'S FINDING AS TO WHICH PARTY WAS LIABLE FOR THE DELAY EVENT IS FORMED, A LEGAL REVIEW MAY BE MADE WITH COUNSEL CONSISTENT WITH LEGAL PRECEDENT IN THE PROJECT JURISDICTION

Once a technical expert has conducted an investigation and formed an opinion, a legal review should be made with counsel to determine whether the legal basis being pursued is sound and whether the elements of proof required to support the issue or theory are present and fully supported by proper documentation and consistent with legal precedent. If these conditions are met, then the schedule expert can rely on the findings and opinions of the technical expert in assessing liability.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

R - 16765

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

CHAPTER 10
CHANGING SCHEDULES AFTER THE FACT

Changes to schedules made after the fact, such as after project completion, should be limited to special circumstances. Changes to the schedules may include changing activity durations, logic, as-built dates, constraints, or other schedule information often kept in the schedule software. Generally, there is a rebuttable presumption of correctness attached to the contemporaneous CPM schedules the parties used on the project. Therefore, the burden of proof of changing the schedules after they are prepared and used during the project lies with the party making the changes. As a result, any changes made after the fact should be made with good justification and be carefully documented and explained. Although changes are situation specific, the following guidelines are intended to help clarify when the schedules should or should not be changed from the version that was submitted and used during the project.

10.1 THE SCHEDULES SHOULD BE PRESUMED CORRECT AS THEY WERE USED DURING THE PROJECT, UNLESS OTHERWISE SHOWN TO BE INACCURATE

Critical path method (CPM) schedules used by project management to manage a project best reflect the plan the parties used to perform, manage, and monitor the work. CPM schedules with regular updates typically are required by contract. Schedules that are created and updated during the course of contract performance determine which activities are critical and which have float at different points on the project. The schedules can be used to plan work, allocate resources, track progress, and make time-related decisions. As such, the contemporaneous project schedules generally are considered one of the best tools for measuring delays in an after-the-fact analysis. Courts and boards typically attach a presumption that contemporaneous CPM schedules are correct.[15]

10.2 AFTER-THE-FACT CHANGES TO SCHEDULES USED DURING THE PROJECT SHOULD BE MINIMIZED AND ONLY MADE WHERE NECESSARY

Although keeping the contemporaneous CPM schedules unchanged is preferred, there are situations where changes may be appropriate. When significant errors are found in the schedule, after-the-fact schedule adjustment to fix the errors may be allowable.[16] For example, logic errors, missing scope, or palpable incorrect durations may have to be adjusted before utilizing the schedule for delay analysis purposes.[17] The need for after-the-fact schedule changes is fact and situation dependent and may require the support of expert opinion.

10.3 ANY CHANGES MADE TO THE CONTEMPORANEOUS RECORD OF PROJECT SCHEDULES SHOULD BE CAREFULLY IDENTIFIED AND DOCUMENTED

After-the-fact changes to the schedules used on the project typically are greeted with skepticism.[18] Therefore, if changes are made to the contemporaneous project schedules, the preferred practice is to document both the schedule change and the reasons for the change.

[15] See, e.g., *Appeal of Santa Fe, Inc.*, VABCA No. 2168, 87-3 B.C.A. (CCH) ¶ 20104 (Aug. 25, 1987) "We do not find that the November revisions were necessary to "correct" the October CPM. Rather, the November CPM merely reflected a different plan for further prosecution of the work which differed from the previous plan. However, the adoption of an alternate method of performance in the later CPM does not, of itself, contradict the existence of a delay as shown in the preceding CPM. There is a rebuttable presumption of correctness attached to CPM's upon which the parties have previously mutually agreed. In the absence of probative evidence, not present in this appeal, that the delay shown was not in fact sustained we will rely on the October CPM for the period it was in effect, i.e., through the end of November 1981. For the subsequent period, we will rely on the November CPM. To put it another way, in the absence of compelling evidence of actual errors in the CPM's, we will let the parties 'live or die' by the CPM applicable to the relevant time frames."

[16] See, e.g., *Neal & Company, Inc. v. U.S.*, 36 Fed. Cl. 600 (1996) analysis accepted where government's expert prepared a new baseline schedule after the project to add in logic ties for labor that were missing, then re-updated the schedule.

[17] See, e.g., *Appeals of States Roofing Corp.*, ASBCA No. 54860, 10-1 B.C.A. (CCH) ¶ 34356 (Jan. 12, 2010) "In any event, the credible evidence supports the finding that the adjustments [contractor's expert] made were exactly as he described them: minor corrections to logic errors relating to submittals. The Navy did not dispute that there were such logic errors in the schedule and, to the extent there were, we consider correction of them to be in keeping with good scheduling practices."); *Hensel Phelps Constr. Co*, ASBCA 49270, 99-2 BCA ¶ 30,531 (1999) (changes were considered appropriate when the contemporaneous CPM schedules developed and updated by the contractor were unreliable because they hid work that would not have been completed in the allowable time period).

[18] See, e.g., *J. A. Jones Construction Co.*, ENGBCA No. 6252, 97-1 B.C.A. ¶ 28,918 (1997) "The more a contractor departs in litigation from its contemporaneously-prepared schedules, the greater the need to explain and justify the reasons and assumptions underlying such departures."

R - 16766

10.4 WHEN POSSIBLE, THE PREFERENCE FOR DEALING WITH INACCURATE SCHEDULES AFTER THE FACT IS TO MAKE CORRECTIONS, RATHER THAN ABANDON THE SCHEDULES, SUBJECT TO THE NATURE AND SCOPE OF THE CORRECTIONS

Generally, there is no "perfect" schedule that exactly matches project performance on the project and the plan to perform the work at any given update. Schedules typically reflect best estimates for performance of the remaining work. The parties often have had an opportunity to object or identify errors contemporaneously during the project. A schedule with errors still reflects information that the parties used and acted on during the project. As a result, most schedules can be used, with some modification, to reflect the intentions of the parties. Generally, to abandon the schedules and exclude them from a schedule delay analysis, they must have significant flaws. The decision regarding whether the errors in the schedules require them to be abandoned or corrected may require expert opinion.

10.5 CHANGES TO SCHEDULES GENERALLY MAY BE MADE TO CORRECT NECESSARY PHYSICAL OR CONTRACTUAL CONSTRAINTS BUT TYPICALLY NOT THE CONTRACTOR'S PREFERENTIAL SEQUENCING

Generally, there are three categories of constraints that define the logic relationship among activities and in a schedule: physical constraints,[19] contractual constraints,[20] and preferential constraints.[21]

For schedule delay analysis, CPM schedules generally should be modified only after the fact to correct errors in physical constraints or contractual constraints where the contract could not have been constructed as planned in the original CPM schedules. The contractor's preferential sequencing typically should not be changed after the fact.

Additional schedule issues that may or may not necessitate correction depending on the circumstances include leads and lags,[22] mandatory start dates, finish dates, and float values,[23] and correcting out-of-sequence logic.[24] Fixing constraints and out of sequence work in the schedule may be necessary to achieve a logic-driven critical path that reflects the way work actually proceeded on the project. However, changes to the schedules that the parties used on the project are still situation dependent and after-the-fact modifications should require expert opinion.

[19] Physical constraints are those that are a physical necessity in the sequence of construction of the project. For example, the third floor of a building cannot be constructed until the second floor is constructed.

[20] Contractual constraints are those required by the contract. For example, if the contract specifications in a road construction project do not allow asphalt paving during winter months, scheduling paving activities outside those months constitutes a contractual constraint. Other examples of common contractual constraints include

- Site access restrictions;
- Federally mandated nonwork periods, such as endangered species breeding nonwork periods;
- Noise or vibration restrictions at different times of the day; and
- Required settlement compaction waiting periods.

[21] Preferential constraints reflect the contractor's discretionary plan to perform the work. These constraints typically include crew sequencing and nonwork periods where the contractor could work but elects not to do so, such as weekends and other voluntary calendar restrictions. Preferential sequencing typically is identified in the baseline schedule as part of the contractor's plan to perform the work in accordance with the bid.

[22] Leads and lags may result in incorrect progress tracking if delays prevent the project from being performed as planned. A preferred alternative to leads and lags is to break activities up into smaller segments and use finish-to-start relationships.

[23] These constraints affect the CPM calculations for that path of work and limit the functionality of a CPM schedule.

[24] Normally corrected by breaking activities and logic ties down to additional activities to more accurately reflect the sequence of work performed on the project.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

CHAPTER 11
ACCELERATION

Acceleration is the process of expending additional resources and/or costs to expedite contract performance. Typical examples of acceleration include adding crews, adding equipment, increasing work hours, increasing work days, increasing resources, and expediting material delivery times. During the project, it is preferable to communicate anticipated acceleration plans to achieve time savings on the project. The communication of acceleration plans should focus on being open and proactive, identifying the steps necessary to execute the plan successfully, identifying potential risks, and noting the potential or quoted costs resulting from the acceleration plan. Opportunities to accelerate may be missed when parties do not communicate effectively the need to accelerate the essential steps needed to achieve the acceleration, or when a party fails to take action within a time frame necessary to execute the acceleration plan.

Acceleration generally is segregated into three types: voluntary, directed, and constructive.

11.1 PARTIES HAVE THE RIGHT TO VOLUNTARILY ACCELERATE, SUBJECT TO CONTRACT TERMS AND CONDITIONS

Voluntary acceleration occurs when a party accelerates to take advantage of weather, finish earlier than planned, or recover its own delays and acknowledges responsibility for its own costs. Voluntary acceleration typically is undertaken by a contractor or subcontractor but may also be undertaken by an owner.[25] Each party on a construction project generally has the right to recover its own delays through voluntary acceleration, where possible.

11.2 FOR OWNER-DIRECTED ACCELERATION, THE PARTIES SHOULD AGREE ON THE ACCELERATION PLAN PRIOR TO IMPLEMENTATION. THE RIGHT TO DIRECT ACCELERATION UNILATERALLY SHOULD BE ADDRESSED BY CONTRACT

Directed acceleration occurs when an owner requires a contractor to accelerate work.[26] For directed acceleration, the parties should agree on the compensation and revised completion date ahead of accelerating. If no agreement is reached and an owner plans on unilaterally requiring or directing a contractor to accelerate, such a right should require contractual authority.

If an owner prefers to pay for acceleration to recover its own delay instead of paying delay costs, it should request an alternative proposal from the contractor. Parties that desire the receipt of an alternate acceleration plan when receiving time extension requests should include such a provision in the contract.

11.3 CONSTRUCTIVE ACCELERATION CAN BE PROVED

Constructive acceleration may occur when an owner requires a contractor to accelerate work but the parties disagree on whether the acceleration is a change to the contract. As such, most acceleration disputes arise from alleged constructive acceleration issues.

Constructive acceleration may be proved by showing that (1) the contractor encountered an excusable delay, (2) the contractor made an appropriate time extension request, (3) the owner denied all or part of the time extension request or failed to act on it within a reasonable time, (4) the owner insisted the earlier completion date must be met or insinuated liquidated damages and the contractor notified the owner that the alleged acceleration order was regarded as a constructive change, and (5) the contractor expended additional costs to accelerate performance.[27]

11.4 WHEN IMPLEMENTING AN ACCELERATION PLAN, ACCELERATION OF MULTIPLE PATHS IN THE SCHEDULE MAY BE REQUIRED

Accelerating the schedule involves careful thought and focus on implementation. The acceleration focus should be on the items necessary to improve the scheduled finish date—items on the critical path. However, after reduction of the longest path, other paths may require further recovery of time in the schedule. As a result, the contractor may need to accelerate multiple paths to recover all delays and get back on schedule.

Where different parties are responsible for delays to different critical paths, an acceleration effort may require each party to recover its own delay, depending on the timing and sequence of the delays.

[25] For example, owners may expedite review or inspection times to recover their own delay.

[26] Directed acceleration also applies to the contractor–subcontractor relationship.

[27] See, e.g., Fraser Constr. Co. v. United States, 384 F.3d at 1360–361 Cf. Norair Engineering Corp. v. U.S., 229 Ct. Cl. 160, 666 F.2d 546, 548, 29 Cont. Cas. Fed. (CCH) ¶ 82055 (1981); Appeal of McNutt Const. Co., Inc., E.N.G.B.C.A. No. 4724, 85-3 B.C.A. (CCH) ¶ 18397, 1985 WL 17278 (Corps Eng'rs B.C.A. 1985); Sherman R. Smoot Co. v. Ohio Dept. of Adm. Serv., 136 Ohio App. 3d 166, 736 N.E.2d 69 (10th Dist. Franklin County 2000).

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

CHAPTER 12
REFERENCES

AACE International. (2007). "Forensic schedule analysis." *Recommended Practice No. 29R-03*, Morgantown, WV.

Arditi, D., and Pattanakitchamroon, T. (2008). "Analysis methods in time-based claims." *J. Constr. Eng. Manage.*, 242–252.

Bidgood, J. K., Jr., Reed, S. L., and Taylor, J. B. (2008). "Cutting the knot on concurrent delay." *Construction Briefings (2007-02)*, Thomson/West, Rochester, NY.

Bramble, B. B., and Callahan, M. T. (2015). *Construction delay claims*, 5th Ed., Wolters Kluwer Law and Business, New York.

Bramble, B. B., D'Onofrio, M. F., and Stetson, IV, J. B. (1990). *Avoiding and resolving construction claims*, R.S. Means, Kingston, MA.

Bruner, P. L., and O'Connor, P. J. (2007). *Bruner and O'Connor on construction law*, Thomson Reuters, New York.

Bubshait, A. A., and Cunningham, M. (1998). "Comparison of delay analysis methodologies." *J. Constr. Eng. Manage.*, 315–322.

Cushman, R. F., Carter, J. D., Gorman, P. J., and Coppi, D. F. (2014). *Providing and pricing construction claims*, 3rd Ed., Aspen, New York.

Dale, W. S., and D'Onofrio, R. M. (2010). "Reconciling concurrency in schedule delay and constructive acceleration." *Public Control Law J.*, 39, 161–229.

Dale, W. S., and D'Onofrio, R. M. (2014). *Construction schedule delays*, Thomson Reuters, New York.

Dictionary.com. (2014). <http://www.dictionary.com/browse/delay> (Jan. 1, 2016).

D'Onofrio, R. M. (2009). "Can there be float on the critical path?" *Under Constr.*, 11(3), 1, 4–5.

D'Onofrio, R. M., and Meagher, A. L. (2016). "What is a schedule good for? A study of issues posed by schedules on complex projects." *Constr. Law*, 33(1), 6–17.

Eggleston, B. (2009). *Liquidated damages and extensions of time: In construction contracts*, 3rd Ed., Wiley-Blackwell, Oxford, UK.

Fletcher, J. W., and Stipanowich, L. J. (2007). "Successful forensic schedule analysis." *Am. Coll. Constr. Law J.*, 203(1), 226–234.

Furniss, B. J., and Trauner, T. J. (2010). "The critical path: Definition vs. understanding." *Construct!*, 19(1), 3–6.

Garner, B. A., ed. (2004). *Black's law dictionary*, 8th Ed., West Group, New York.

Haidar, A., and Barnes, P. T. (2014). *Delay and disruption claims in construction*, 2nd Ed., Institution of Civil Engineers, London.

Heffernan, C. J., Knoll, J. L., Steedman, T. L., and Weisenberger, R. (2012). "Evidence and experts defending and asserting Daubert challenges in construction disputes." *Constr. Law*, 32(2), 6–22.

Keane, P. J., and Caletka, A. F. (2008). *Delay analysis in construction contracts*, 2nd Ed., Wiley-Blackwell, Oxford, UK.

Knoll, J. L., and Bjorklund, S. L. (2014). "Force majeure and climate change: What is the new normal?" *J. Am. Coll. Constr. Law*, 8(1), 2.

O'Brien, J. J., and Plotnick, F. L. (2009). *CPM in construction management*, 7th Ed., McGraw-Hill Education, New York.

Pickavance, K. (2010). *Delay and disruption in construction contracts*, 4th Ed., Sweet & Maxwell, Andover, UK.

Sanders, M. C. (2012). "Forensic schedule analysis: Example implementation, Part 3." *Cost Eng.*, (Nov/Dec) 17–27.

Society of Construction Law. (2004). *Delay and disruption protocol*, Wantage, U.K.

Theodore, T. J., Manginelli, W. A., Lowe, J. S., Nagata, M. F., and Furniss, B. J. (2009). *Construction delays: Understanding them clearly, analysing them correctly*, 2nd Ed., Elsevier Science, London.

Wickwire, J. M., Driscoll, T. J., Hurlbut, S. J., and Groff, M. J. (2009). *Construction scheduling: Preparation, liability, and claims*, 3rd Ed., Wolters Kluwer, Amsterdam, Netherlands.

Wickwire, J. M., and Ockman, S. (1999) "Use of critical path method on contract claims." *Constr. Law*, 19(4), 12–21.

INDEX

acceleration, 5, 21
after-the-fact changes, 19–20
apportionment, 5

compensable delays, 8
concurrent, 5
concurrent delay, 5, 15
constraints, 20
constructive acceleration, 21
contract completion date: acceleration and, 21; current adjusted, 5, 13; early completion and, 11; explanation of, 5
contract milestone, 5
contractor-caused delay, 17
contractual constraints, 20
critical activities, 5
critical delay, 5, 15
critical path: delays and, 7–8; explanation of, 5; interference with, 9
critical path method (CPM), 7, 13
critical path method (CPM) schedules, 1, 19
current adjusted completion date, 5, 13

delay: compensable, 8; concurrent, 5, 15; critical path and, 7–8; evaluation of chronology of, 13; excusable, 8, 17; explanation of, 5; responsibility for, 17–18
delay damages, 11
directed acceleration, 21

early completion, 11
excusable delays, 8, 17

float, 5, 9
free float, 9

longest path, 5

offsetting delay, 5

physical restraints, 20
preferential constraints, 20

remedy granting clause, 17

scheduled completion date: critical path and, 7, 8; early completion and, 11; explanation of, 5
schedule delay analysis: after-the-fact changes and, 20; definitions related to, 5; industry guidelines for, 1, 3
schedule experts, 17–18
schedules: changed after the fact, 19–20; function of, 1

technical experts, 18
total float, 9

voluntary acceleration, 21

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

Civil Engineering

Prepared by the Schedule Delay Analysis Standard Committee of the Construction Institute of ASCE

Schedule Delay Analysis, Standard ANSI/ASCE/CI 67-17, presents guiding principles that can be used on construction projects to determine the impact of delays. Critical path method (CPM) schedules can be of evidential value to demonstrate causation and liability and to apportion delays when they occur on a project. CPM schedules will influence the quantification of delay and, ultimately, whether a party was damaged by a delay.

This standard provides 35 guidelines that allow for segmentation of responsibility for delays to intermediary milestones and project completion dates. The guidelines enable the calculation of delay damages or liquidated damages by using CPM schedule techniques and preparing a schedule delay analysis. Each guideline is accompanied by commentary that explains the reasoning behind and application of that principle. Topics include scope and definitions; critical path, float, and early completion; chronology of delay, concurrent delay, and responsibility for delay; changing schedules after the fact; and acceleration.

Standard ASCE 67-17 reflects the best engineering principles associated with schedule delay analysis, as well as the standard of practice in the U.S. construction industry. It is an important reference for construction engineers, project managers, owners, and contracting agents.

ASCE AMERICAN SOCIETY OF CIVIL ENGINEERS

ISBN 978-0-7844-1436-1

R - 16771

DEFENDANT LIBRARY ASSOCIATES,

LLC'S TRIAL EXHIBIT #91

91; 91-1 through 91-39

91-13 was Withdrawn


DEFENDANT'S
EXHIBIT
91
PENGAD 800-631-6989

Capital Project Management, Inc.
December 15, 2020

Hotel Bennett – Manpower Issues

Tab B

2015 | 2016 | 2017 | 2018 | 2019

3/30 NTP

11/21 Bldg. TCO

2/1 Hotel Opening

1. 3/1/16
[WSI] Do we have more manpower coming?...This is unacceptable...This will push vertical.
-Ricci

2. 2/29/16
[WSI] We need more manpower. You don't currently have enough men to meet the 3 week schedule.
-Ricci

3. 2/29/16
[WSI] will not be here until lunchtime. Once again they are running the job...
-Ricci

4. 1/18/16
[WSI] lack of material's and manpower
-Lauricella

5. 1/14/16
[WSI] keep pushing us to the right
-Ricci

6. 5/19/16
To date this has not been going well Lithko continues to lose days at each update and depleting valuable float in the schedule.
-Lauricella

7. 6/6/16
Manpower is tuff in Charleston [referencing Lithko schedule slip]
-Spano

8. 6/7/16
Lithko has been averaging about 25 men on site...is half the crew size that should be on this job.
-Spano

9. 6/7/16
The project schedule is currently 11 days calendar days behind schedule in large part due to Lithko
-Starcevic

10. 7/8/16
Tim is teeing [ONSM] up already because they suck and we need to take any excuses away.
-Ricci

11. 8/16/16
We need to discuss several items controlled by ONS that affect the BBC schedule
-Spano

12. 8/26/16
These projects have clearly been impacted by ONSM.
-Dean

13. 8/26/16
[ONSM] are about to screw themselves.
-Dean

14. 10/14/16
the mason who is already struggling with masons and manpower
-Ricci

15. 12/16/16
Have concerns that [ONSM] has the proper manpower and supervision onsite
-Starcevic

16. 1/11/17
We feel strongly that ONSM needs more manpower and a plan
-Starcevic

17. 1/23/17
Have requested additional manpower to maintain the schedule, but have seen no substantial increase
-Starcevic

18. 1/27/17
[ONSM] grossly behind schedule....+/- 50 days behind schedule mostly, in part to masonry
-Starcevic

19. 2/11/17
[ONSM] 20+ people and no competent person...no one onsite currently is capable of the work nor is their leadership to direct it
-Starcevic

20. 3/3/17
[ONSM] defects in stair 3....need to address the lack of manpower
-Starcevic

21. 3/15/17
The exterior skin continues to slip. [ONSM] necessary manpower is not onsite
-Starcevic

22. 2/14/17
Pasco is falling behind schedule
-Starcevic

23. 3/6/17
[Pasco] behind on L4 and up the building
-Starcevic

24. 3/14/17
[Pasco] L6 is a 2-weeks behind with no available manpower....it was agreed with your superintendent that [Pasco] need two additional crews
-Starcevic

25. 3/15/17
Pasco needs additional manpower onsite
-Starcevic

26. 4/5/17
BMCC will not be ready...on L5...15+ delay to framing inspection
-Starcevic

27. 9/19/17
obvious that Watson, and other trades are overwhelmed by the amount of work to complete they simply don't have enough manpower to handle the activities at hand
-Ledford

28. 5/1/17
David's executive meeting needs to increase manpower for Watson
-Stoneking

29. 3/15/17
Watson was to complete L5 guestrooms by 3/10/17 and start L6 guestrooms on 3/13/17. Neither of these dates were accomplished.
-Starcevic

30. 5/1/17
David's executive meeting needs to increase manpower for Precision
-Stoneking

31. 3/7/17
BBC removed the tower crane a month ago...[Precision Walls] not taking advantage of it....behind schedule on floors 1-5.
-Starcevic

32. 3/2/17
9th floor...behind schedule. Stopped ... on 1st due to other trades. 8th... not yet on schedule.
-Morgan (Precision Walls)

33. 1/23/18
[Pasco] current manpower onsite cannot keep up...You continue to hold up the critical path
-Starcevic

34. 2/17/18
PASCO refuses to work overtime...You continue to hold up other trades
-Starcevic

35. 3/16/18
Stop holding up BBC and its subcontractors
-Simonton

36. 4/6/18
When is PASCO going to step up and put forth the necessary manpower to maintain the schedule?
-Starcevic

37. 1/27/18
[BMCC] have limited manpower
-Pieniak

38. 1/24/18
[BMCC] need more manpower onsite
-Starcevic

39. 1/16/18
It is clear to us [BMCC] need quite a few more people
-Dale

40. 1/8/18
[Precision] lack of manpower and quality control on site...the schedule continues to slip
-Starcevic

41. 12/15/17
It is very clear that Precision Walls needs more framers, hangers, and finishers
-Starcevic

42. 10/18/17
[Precision] added additional folks at MSH but not enough and have actually lost some of their framers which they need desperately.
-Sandeen

43. 10/3/17
We currently lack framing completion on every floor of the hotel and need multiple framers
-Spano

Message

From: Ricci, Daniel [DRicci@Balfourbeattyus.com]
Sent: 1/14/2016 10:51:28 AM
To: Spano, Tim [timspano@Balfourbeattyus.com]; Cotherman, Robert [RCotherman@Balfourbeattyus.com]; Sandeen, Jeff [JSandeen@Balfourbeattyus.com]
Subject: Fwd: Marion Square Notic of delay for lack of manpower and materials

How much more do I need to take from them. They keep pushing us to the right. Why is Lithko the only sub making things work out here and sacrificing to move the train...Please help. I thought I was back in commercial and done with these bullshit excuses.

Dan Ricci
Balfour Beatty Construction
(704)400-2290

Begin forwarded message:

From: rauben919 <rauben919@aol.com>
Date: January 14, 2016 at 11:21:48 AM EST
To: "Ricci, Daniel" <DRicci@Balfourbeattyus.com>
Cc: Rob Greer WSI <robg@wsi-nc.com>, "Spano, Tim" <timspano@Balfourbeattyus.com>, "Cotherman, Robert" <RCotherman@Balfourbeattyus.com>
Subject: Re: Marion Square Notic of delay for lack of manpower and materials

At this minute every single crew its real busy
That means if you do not have nothing for us to continue today and tomorrow seems like the best day we can go back is going to be on Monday

Raunel Benitez
Field operations manager
WSI
Direct: 919-868-8807
Office: 704-489-2099
Fax: 704-489-2265
www.wsi-nc.com

-------- Original message --------
From: "Ricci, Daniel" <DRicci@Balfourbeattyus.com>
Date: 01/14/2016 11:10 AM (GMT-05:00)
To: rauben919 <rauben919@aol.com>
Cc: Rob Greer WSI <robg@wsi-nc.com>, "Spano, Tim" <timspano@Balfourbeattyus.com>, "Cotherman, Robert" <RCotherman@Balfourbeattyus.com>
Subject: Re: Marion Square Notic of delay for lack of manpower and materials

So I guess we will see a different crew on Saturday at Marion Square. Thanks

Dan Ricci
Balfour Beatty Construction
(704)400-2290

On Jan 14, 2016, at 11:05 AM, rauben919 <rauben919@aol.com> wrote:

Daniel just like I said too many times angel will be working tomorrow and another project if he not finish in the GC want us to work on Saturday I cannot pull it out and send it over to you just like I can not pull them out when they are on you job site without finish what do you need as to do

Raunel Benitez
Field operations manager
WSI
Direct: 919-868-8807
Office: 704-489-2099
Fax: 704-489-2265
www.wsi-nc.com

-------- Original message --------
From: "Ricci, Daniel" <DRicci@Balfourbeattyus.com>
Date: 01/14/2016 10:45 AM (GMT-05:00)
To: rauben919 <rauben919@aol.com>
Cc: Rob Greer WSI <robg@wsi-nc.com>, "Spano, Tim" <timspano@Balfourbeattyus.com>, "Cotherman, Robert" <RCotherman@Balfourbeattyus.com>
Subject: Re: Marion Square Notic of delay for lack of manpower and materials

I am saying this Saturday 1/16 like I said in an email yesterday. We are tracking on next section.

Dan Ricci
Balfour Beatty Construction
(704)400-2290

On Jan 14, 2016, at 10:25 AM, rauben919 <rauben919@aol.com> wrote:

Are you saying Saturday the 23rd?

Raunel Benitez
Field operations manager
WSI
Direct: 919-868-8807
Office: 704-489-2099
Fax: 704-489-2265
www.wsi-nc.com

-------- Original message --------
From: "Ricci, Daniel" <DRicci@Balfourbeattyus.com>
Date: 01/14/2016 10:13 AM (GMT-05:00)
To: rauben919 <rauben919@aol.com>
Cc: Rob Greer WSI <robg@wsi-nc.com>, "Spano, Tim" <timspano@Balfourbeattyus.com>, "Cotherman,

Robert" <RCotherman@Balfourbeattyus.com>
Subject: Re: Marion Square Notic of delay for lack of manpower and materials

Saturday

Dan Ricci
Balfour Beatty Construction
(704)400-2290

On Jan 14, 2016, at 9:39 AM, rauben919 <rauben919@aol.com> wrote:

Tim/ Daniel. Like I said yesterday after 9:00 am this morning we do not have nothing else to do we finish 100% at this minute everything we can do I guess we going to go and come back on Monday if you have areas available by than please let us know thanks

Raunel Benitez
Field operations manager
WSI
Direct: 919-868-8807
Office: 704-489-2099
Fax: 704-489-2265
www.wsi-nc.com

-------- Original message --------
From: "Ricci, Daniel" <DRicci@Balfourbeattyus.com>
Date: 01/13/2016 4:16 PM (GMT-05:00)
To: rauben919 <rauben919@aol.com>
Cc: "Spano, Tim" <timspano@Balfourbeattyus.com>, "Cotherman, Robert" <RCotherman@Balfourbeattyus.com>
Subject: Re: Marion Square Notic of delay for lack of manpower and materials

Yes

Dan Ricci
Balfour Beatty Construction
(704)400-2290

On Jan 13, 2016, at 4:11 PM, rauben919 <rauben919@aol.com> wrote:

Do you have more areas ready after 9 a.m. tomorrow for us to continue?

Raunel Benitez
Field operations manager
WSI
Direct: 919-868-8807
Office: 704-489-2099
Fax: 704-489-2265

www.wsi-nc.com

-------- Original message --------
From: "Ricci, Daniel" <DRicci@Balfourbeattyus.com>
Date: 01/13/2016 3:54 PM (GMT-05:00)
To: rauben919 <rauben919@aol.com>
Cc: "Spano, Tim" <timspano@Balfourbeattyus.com>, "Cotherman, Robert" <RCotherman@Balfourbeattyus.com>
Subject: Re: Marion Square Notic of delay for lack of manpower and materials

Raunel what about the material? If you look on the camera now you will see the next section is coming available and with 2 guys you should keep going. Plan is to pour section A Friday morning at 4am before rain comes. Strip on Saturday which will require you guys to be here for repairs and also keep going on section B and finish end of day Saturday for rod busters to be here Monday to install rebar in section B. If you were in sub meeting we could have discussed. Need your cooperation on this please to make schedule.

Dan Ricci
Balfour Beatty Construction
(704)400-2290

On Jan 13, 2016, at 2:46 PM, rauben919 <rauben919@aol.com> wrote:

Tim. I do not know where you have this information but we were on site at 7:am yesterday nothing was ready for us to do that's why we left and came back at lunch
I just finish talking with Angel he will finish 100% the area that you have ready for us no later than tomorrow at 9 a.m. so after that is nothing for us to do

Raunel Benitez
Field operations manager
WSI
Direct: 919-868-8807
Office: 704-489-2099
Fax: 704-489-2265
www.wsi-nc.com

-------- Original message --------
From: "Spano, Tim" <timspano@Balfourbeattyus.com>
Date: 01/13/2016 2:10 PM (GMT-05:00)
To: rauben919 <rauben919@aol.com>
Cc: "Cotherman, Robert" <RCotherman@Balfourbeattyus.com>, Rob Greer <robg@wsi-nc.com>, "Ricci, Daniel" <DRicci@Balfourbeattyus.com>
Subject: Marion Square Notic of delay for lack of manpower and materials

Raunel, I thought we were past showing up at noon and running out of materials on site. Your crew didn't show up yesterday until lunch and ran out of materials early this morning. three of your men left this morning to get material at the warehouse and had only one man on site working. Can someone please project material for the portion of work your doing that week? due to the late start and lack of material, we had to push the rod busters to tomorrow and have lost a day in the schedule. We need your men completing the next section

pour today no matter how late. Dan has offered our shed to store some material on site so we don't run into this again but its not being used.

On another note, pursuant to the contract, you are to have a competent person at our office every Wednesday morning at 8:30 am for a sub meeting while you are performing work on this job. No one was in our meeting again. This is when we go over issues and schedules. Have Angel or yourself here next Tuesday. thanks

Message

From: Lauricella, Joe [JLauricella@Balfourbeattyus.com]
Sent: 1/18/2016 1:23:41 PM
To: Spano, Tim [timspano@Balfourbeattyus.com]; Cotherman, Robert [RCotherman@Balfourbeattyus.com]; Ricci, Daniel [DRicci@Balfourbeattyus.com]; Denney, Brandon [BDenney@Balfourbeattyus.com]
CC: Stoneking, Tony [tstoneking@balfourbeattyus.com]; Sandeen, Jeff [JSandeen@Balfourbeattyus.com]; Goodwin, Shelly [sgoodwin@balfourbeattyus.com]
Subject: MSH-004 Updated Schedule & Reports
Attachments: MSH-004 BiWeekly Update Report thru 1-26-16.pdf; MSH-004 Comparison Schedule vs 003 1-18-16.pdf; MSH-004 Critical Path Schedule 1-18-16.pdf; MSH-004 Delivery Schedule PLOT 1-18-16.pdf; MSH-004 Detailed Project Schedule 1-18-16.pdf; MSH-004 PM Report 1-18-16.pdf; MSH-004 Pull Planning 2 Week Look Ahead 1-18-16.pdf; Marion Sq Project Overview .xlsx
Importance: High

Team, attached is the updated schedule and reports based on last week's site visit. Below I have listed a few of the issues that have or are still impacting the job over the past month.

- Waterproofing Subcontractor both lack of material's and manpower.
- Tower Crane down for approx. 7 days.
- Dirt removal from hole is moving slowly due to detail on bracing and the process in which we are using to remove dirt. (Team can provide more detail)
- BBC has sent dates to Owner for Design shop drawings at each level. These activities have been added into the schedule and tied to the proper Successors. These will be tracked on a Bi Weekly basis along with construction.

Attached Reports:

- Detailed project Schedule
- Critical Path Schedule
- Delivery Plot (Will be delivered)
- BI Monthly Update report thru 1-26-16
- 2 Week Pull Planning Plot (Will be delivered)
- MSH-003 VS MSH-004 Comparison Schedule
- PM / Procurement Update

I will be plotting out 2 of these reports and bringing them to the site on Thursday for your use.

Bob & Dan. Please use these attached reports for our next update. Also the update report should be issued to all subcontractors so that everyone is using the same schedule to build by.

Joe

Joe Lauricella | **Scheduling Manager**
office: 704.295.4773 | mobile: 704.770.5974| email: jlauricella@balfourbeattyus.com
Balfour Beatty Construction ¦1930 Camden Rd Ste 280, Charlotte, NC 28203 ¦www.balfourbeattyus.com
Connect with us: Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

Message

From: Ricci, Daniel [DRicci@Balfourbeattyus.com]
Sent: 2/29/2016 7:19:07 AM
To: Spano, Tim [timspano@Balfourbeattyus.com]; Cotherman, Robert [RCotherman@Balfourbeattyus.com]
Subject: Re: Monday 7am

Yes. Everything Lithko and I said we were going to do we accomplished. I called Raunel yesterday at 6pm and he said they would be here. The jobsite hours are 7am to 6pm. If they can not do their work during that time than we should be able to slap a notice to them. Bob please make sure we close tonight at 6pm and we will just push the schedule. I am tired of staying late for these ass clowns because they do and work when they want to. They were given 2 days to be on this section. Their is no excuse here and I need you all to support me.

Dan Ricci
Balfour Beatty Construction
(704)400-2290

On Feb 29, 2016, at 8:02 AM, Spano, Tim <timspano@Balfourbeattyus.com> wrote:

I will call Raunel but did the half day worked yesterday get Section 7 done per your email below?

From: Ricci, Daniel
Sent: Monday, February 29, 2016 7:56 AM
To: Spano, Tim; Cotherman, Robert
Subject: Re: Monday 7am

I just called Jose. They will not be here until lunchtime. Once again they are running the job...

Dan Ricci
Balfour Beatty Construction
(704)400-2290

On Feb 29, 2016, at 7:40 AM, Ricci, Daniel <DRicci@Balfourbeattyus.com> wrote:

Raunel can I get an ETA for the guys please? It is almost 8am

---

From: Ricci, Daniel
Sent: Friday, February 26, 2016 9:10 AM
To: Raunel Marion Waterproofer
Cc: Spano, Tim; Cotherman, Robert; Rob Greer
Subject: Monday 7am

Raunel to follow up on my phone call yesterday and keep everyone in the loop. We are working Sat and Sun and section 7 will be ready on Monday @ 7am for a full crew. You are looking at a good 2 days in that section. That crew should then be able to move to the rest of the foundations in section 5 on Wednesday. I will call you over the weekend with an update on our progress.

Dan Ricci
Balfour Beatty Construction
(704)400-2290

Message

From: Ricci, Daniel [DRicci@Balfourbeattyus.com]
Sent: 2/29/2016 11:21:38 AM
To: Raunel Marion Waterproofer [rauben919@aol.com]; Rob Greer [robg@wsi-nc.com]; Cotherman, Robert [RCotherman@Balfourbeattyus.com]; Spano, Tim [timspano@Balfourbeattyus.com]
Subject: WSI

We need more manpower. You don't currently have enough men to meet the 3 week schedule. We made an effort to give you available sections and Angel makes it a point to take pictures of small areas that need adjustment. I can not get on board with a subcontractor that says "we can't". I am tired of the bullshit every time your guys come to the site. Starting at 11 and then taking a lunch does not help the fact....The jobsite is open from 7am to 6pm. BBC will no longer stay late to accommodate WSI getting to work at 11am. The schedule will continue to push...

You all need to figure it out if we are ever going to get out of this hole.

Dan Ricci
Balfour Beatty Construction
(704)400-2290

Message

From: DRicci@Balfourbeattyus.com [DRicci@Balfourbeattyus.com]
Sent: 3/1/2016 8:07:38 AM
To: Raunel Marion Waterproofer [rauben919@aol.com]; Rob Greer [robg@wsi-nc.com]
CC: Spano, Tim [timspano@Balfourbeattyus.com]; Cotherman, Robert [RCotherman@Balfourbeattyus.com]
Subject: Re: Ready

Do we have more manpower coming? We just spoke with your guy (Jose the translator not the competent person) and he said it will be end of the day tomorrow before half of section 7 (east wall) is ready and it won't be until Saturday until the remainder is finished. This is unacceptable. Get me another crew in Charleston today. We can not let the schedule push a week. This will push vertical. At this rate we will have the elevator deck poured before section 7...

I need an answer in the next 30 minutes on what your plan is.

Dan Ricci
Balfour Beatty Construction
(704)400-2290

On Feb 29, 2016, at 1:14 PM, Ricci, Daniel <DRicci@Balfourbeattyus.com> wrote:

What about all these areas that are ready and have been since 7am. I can take pictures too but it will not speed up the job. If you had a competent person here we might be able to get something done. Send more men and a competent person. It's 1:30pm and no waterproofing on sheet pile. Let me guess... Not ready

<IMG_0904.JPG>

<IMG_0903.JPG>

<IMG_0902.JPG>

<IMG_0901.JPG>

<IMG_0900.JPG>

Dan Ricci
Balfour Beatty Construction
(704) 400-2290

Message

From: Lauricella, Joe [JLauricella@Balfourbeattyus.com]
Sent: 5/19/2016 8:43:54 AM
To: Spano, Tim [timspano@Balfourbeattyus.com]; Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]; Denney, Brandon [BDenney@Balfourbeattyus.com]; Ricci, Daniel [DRicci@Balfourbeattyus.com]; Dale, Marty [mdale@balfourbeattyus.com]
CC: Sandeen, Jeff [JSandeen@Balfourbeattyus.com]; Stoneking, Tony [tstoneking@balfourbeattyus.com]; Goodwin, Shelly [sgoodwin@balfourbeattyus.com]
Subject: MSH-011 Updated Schedule & Reports
Attachments: MSH-011 BI Monthly Update Schedule thru 5-31-16.pdf; MSH-011 Detailed Project Schedule 5-19-16.pdf; MSH-011 Detailed Project Schedule OWNER 5-19-16.pdf

Team, attached is the updated schedule and reports thru 5/10/16. Based on our meeting with the leadership team we have gone thru the schedule and completed the following tasks.

- Review the structure with Lithko to improve on cycle time. – To date this has not been going well Lithko continues to lose days at each update and depleting valuable float in the schedule.
- Review the drywall durations with Pwalls.- This went very well Both Dale and Michael were very cooperative in committing to working the drywall process on a SS-4 duration between floors as well as maintain levels 1.2 and 9 when they are available. It was clearly discussed with them that they would need to provide the adequate manpower to achieve this schedule.
- Review and add detail to Level 9 breaking it into 3 areas, East, West and Pool area. – This was done with Dan Ricci and I feel that both the West & East are realistic and have the detail needed to communicate to the subcontractors BBC plan on building these areas. The Pool area still needs a additional meeting with the subcontractors to make sure we have everything that need to be captured in the schedule shown. Dan Ricci is setting up a meeting to get this completed.
- Hotel Milestones. These Key Milestones were added into the schedule and tied with the buy in from the team on the correct predecessors. I reviewed these with the team this morning and we have completed our 1st pass at these. Jeff & Tony please review the durations for each of the milestones and provide feedback where required. The team has revised what they feel they should be, but based on your site visit to Texas you may be able to provide additional input.

Please let me know if you have any questions.

Team I have included the procurement portion of the update into the overall master update so that both Dan & Marty can be aware of when key equipment will be hitting the site. So Please fill out just (1) report and insure that Dan & Marty review the procurement and Bim activities so they can of if there has been any impacts to those areas of the schedule.

Joe

Joe Lauricella | Scheduling Manager of Carolina's
office: 704-295-4773 | mobile: 704-770-5974 | email: JLauricella@Balfourbeattyus.com
Balfour Beatty Construction | , ,

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

Message

From: Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]
Sent: 6/6/2016 9:08:42 PM
To: Ricci, Daniel [DRicci@Balfourbeattyus.com]
CC: Spano, Tim [timspano@Balfourbeattyus.com]; Dale, Marty [mdale@balfourbeattyus.com]; Eldridge, Johnny [JEldridge@Balfourbeattyus.com]
Subject: RE: Schedule Deep Dive
Attachments: 1302600-14-01 Notice of Delay and Demand for Cure.doc

See attached notification. I can put in a letter as well.

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Starcevic, Nicholas
Sent: Monday, June 06, 2016 6:09 PM
To: Ricci, Daniel <DRicci@Balfourbeattyus.com>
Cc: Spano, Tim <timspano@Balfourbeattyus.com>; Dale, Marty <mdale@balfourbeattyus.com>; Eldridge, Johnny <JEldridge@Balfourbeattyus.com>
Subject: Re: Schedule Deep Dive

I'll draft up a notice this evening.

Nick Starcevic
Balfour Beatty Construction
704-361-3265

On Jun 6, 2016, at 5:29 PM, Ricci, Daniel <DRicci@Balfourbeattyus.com> wrote:

10-4. We can discuss further tomorrow. Have we put Lithko on notice yet? How many times have we put them on official notice to date? I will send them an email tomorrow to document a recovery plan since we have only had verbal discussions about recovery. Let me know how many so I can capture it in my email to them and I will copy you guys.

Dan Ricci
Balfour Beatty Construction
(704)400-2290

On Jun 6, 2016, at 5:17 PM, Spano, Tim <timspano@Balfourbeattyus.com> wrote:

Marty, per our discussion, look hard at getting the first two floors dried in ASAP and think outside the box. Johnny, look at ways to get all equipment into the basement for us to install CMU. We also need to look at pumping concrete down in the hole for the raised slab at the mechanical/Electric room before CMU can start. Dan, let's be prepared to respond to the schedule slip and plan for recovery. Tony will not be happy that there is no recovery plan with Lithko after asking for 6-8 weeks last visit. We can not tell him that its hot and manpower is tuff in Charleston. Lithko knew where they were bidding the job and they need to spend some extra money to make it happen. We're about to light them up because

after Lithko is done with the shell and on another job, we will all be working double shifts to finish the hotel. Let's all put our heads together on Wednesday afternoon to be prepared. Thanks

Tim Spano | Sr. Project Manager **Carolina's**
office: 843.974.4590 | mobile: 813.917.1656 | email:timspano@balfourbeattyus.com
Balfour Beatty Construction | www.balfourbeattyus.com
306 Meeting St., Suite 300, Charleston, SC 29401
Connect with us: Facebook | Twitter | YouTube | LinkedIn
<image001.jpg>

Message

From: Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]
Sent: 6/7/2016 9:19:01 AM
To: Rohrer, Michael [rohrerm@Lithko.com]
CC: Ricci, Daniel [DRicci@Balfourbeattyus.com]; Dale, Marty [mdale@balfourbeattyus.com]; Beech, Joshua [beechj@Lithko.com]; Hazen, Anthony [hazena@Lithko.com]; Spano, Tim [timspano@Balfourbeattyus.com]; Sandeen, Jeff [JSandeen@Balfourbeattyus.com]
Subject: 13026000-14-01 Notice of Delay and Demand for Cure - Hotel at Marion Square
Attachments: 1302600-14-01 Notice of Delay and Demand for Cure.pdf

Importance: High

Mike,

See attached Notice of Delay and Demand for Cure for the Hotel at Marion Square. The project schedule is currently 11 days calendar days behind schedule in large part due to Lithko Contracting with no indication of recovery. BBC has notified Lithko verbally and via email multiple times requesting Lithko cure the schedule delay. We continually miss coordination and pull planning dates (deck completion, PT stressing, pours, etc.) causing other subcontractors to incur costs, add manpower, and work overtime to make up for Lithko's delays. For example, the last 2 deck completion durations (L3 West and L3 East) were missed by at least one day each resulting in the subcontractor coordination issues and ultimately pushing the pour date in both instances. BBC has committed an additional crane operator so the project has a minimum hook time of 15 hours per day Monday thru Friday and 12 hours on Saturdays starting on 6/13.

BBC is formally demanding a recovery plan including a combination of additional manpower, longer working hours, and weekend work until the 4/11/16 contractual schedule is recovered. Please send the recovery schedule to myself, Dan Ricci, and Tim Spano's attention by 12:00pm Wednesday, June 8 to address these concerns.

Respectfully,

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Spano, Tim
Sent: Tuesday, June 07, 2016 9:48 AM
To: Hazen, Anthony <hazena@Lithko.com>
Cc: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Ricci, Daniel <DRicci@Balfourbeattyus.com>; Dale, Marty <mdale@balfourbeattyus.com>; Rohrer, Michael <rohrerm@Lithko.com>; Beech, Joshua <beechj@Lithko.com>
Subject: FW: schedule Delay/ Manpower Issues/ QC issues/ Recovery Schedule
Importance: High

Anthony, after our last schedule discussion with you, Mike & Josh, you guys brought in a 10k to help with the front entrance which definitely helped but the L3 west pour still slipped. As you see below, we are tracking 11 days behind the 4/11 structure schedule and were to be making up time. I have grave concerns about the manpower and the fact that tables and columns are not continually going up. The table crew is pushing to get 1/4 of the deck up then drops back to do drop down beams and fill in while more tables stop being set. Getting ¼ deck only allows MCC to start layout. BBC needs 1/2 deck to set our controls and the same goes for Watsons electrical layout. Our MEP trades have been crunching their allotted schedule layout duration on the deck because Lithko is behind. This shortened layout time has only benefitted Lithko not to slip further behind when in reality it should have gained BBC days on the schedule. I am not

disregarding the control/crane BBC issue that accounts for 4 days since the 4/11 schedule that BBC should have already had back due to shortened MEP layout durations. Lithko has been averaging about 25 men on site which as we both know, is half the crew size that should be on this job. We currently have no rhythm in the sequencing. There should be a table erecting crew, a drop beam and infill crew, a column steel tie/set crew and a column/wall form/pour/strip crew meaning two shifts as we previously talked about. There could also be a small strip and re-shore crew. BBC is implementing two crane operators to work 14 -16 hour days, 6 days per week moving forward until the structure is complete. Dan has asked for a plan to get back on track and we are giving you the hook time to make it happen, we just need Lithko to man up the job. Formal Delay/ Notice to cure will be coming shortly.

QC Concerns

We currently have several second floor columns that are too short pultruding through the L3 West slab so we had to ask for an engineering fix yesterday and may not have the fix resolved until tomorrow, losing 3 days on the L4 West columns that are not being formed and poured.

The Most urgent issue is that per spec, we are to stress within 72 hours from the pour but received a permission to stress the morning of Monday if we pour on a Friday. You poured L3 west completing about 7am last Friday morning (6/3/16) that has still not been stressed because edge forms were not stripped Saturday so you stress man could start first thing Monday. The edge form stripping started yesterday and your stress man showed up at 11 am when the rain started and everyone left the site. As of this morning the cables were not stressed and the Structural Engineer is going to be very upset when the third party send the stress report.

Please address the manpower/QC issues immediately and give us a plan tomorrow by noon per Dan's request. Thanks

Tim Spano | Sr. Project Manager **Carolina's**
office: 843.974.4590 | mobile: 813.917.1656 | email:timspano@balfourbeattyus.com
Balfour Beatty Construction | www.balfourbeattyus.com
306 Meeting St., Suite 300, Charleston, SC 29401
Connect with us: Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Ricci, Daniel
Sent: Tuesday, June 07, 2016 8:10 AM
To: hazena@lithko.com; beechj@lithko.com
Cc: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>
Subject: Recovery Schedule
Importance: High

Guys as Anthony already knows from our conversation yesterday, we have the big dogs coming into town on Thursday morning at 7am for a site visit and then a schedule and budget review meeting. Structure will be a big part of the discussion and I want to be prepared to explain to them what our recovery plan is to get us not just back on schedule but also pull it in as discussed the last time they were here to beat the 9-22-16 top out date from the 4-11-16 schedule. Please email me your plan and updated schedule by 12pm on Wednesday if not sooner so my team and I can review it and be prepared for the meeting. Overall we are tracking 11 calendar days behind the next pour which is L3 East that was scheduled to pour 6/3 and as of today, we are tracking 6/14 for a pour date. Just so you guys are aware we are all tied to calendar days for LD's.... Call me with any questions

Dan Ricci | Superintendent
office: 704.319.4000 | mobile: 704.400.2290 | email: dricci@balfourbeattyus.com
Balfour Beatty Construction | 1930 Camden Rd Ste 280, Charlotte, NC 28203 | www.balfourbeattyus.com
Connect with us: Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

Message

From: DRicci@Balfourbeattyus.com [DRicci@Balfourbeattyus.com]
Sent: 7/8/2016 7:48:33 AM
To: Anthony Hazen [hazena@lithko.com]
Subject: Fwd: Masonry Start at HMS

See below. Tim is teeing these guys up already because they suck and we need to take any excuses away. Are we good on all Masonary dowels on levels 1, 2 and 3? Mason is coming in hot and heavy Monday on level 1

Dan Ricci
Balfour Beatty Construction
(704)400-2290

Begin forwarded message:

From: "Spano, Tim" <timspano@Balfourbeattyus.com>
Date: July 8, 2016 at 8:39:25 AM EDT
To: Toby Holloway <tholloway@oldnorthstatemasonry.com>
Cc: "Starcevic, Nicholas" <NStarcevic@Balfourbeattyus.com>, "Ricci, Daniel" <DRicci@Balfourbeattyus.com>, "Dale, Marty" <mdale@balfourbeattyus.com>, Chip Venable <cvenable@oldnorthstatemasonry.com>, "Dooley, Alec" <adooley@Balfourbeattyus.com>, "Dale, Marty" <mdale@balfourbeattyus.com>
Subject: RE: Masonry Start at HMS

Thanks Tobey. Per my calculations on CMU per floor and re-shore removal on upper levels. With two trowels, you will be in the basement most of next week and laying out/staging 1st floor. We will need the 1st floor staged with CMU/scaffold on Monday and 5 trowels by Tuesday next week and 10 the following week and you will not catch the re-shore removal. We will need each floor punched completely before leaving that floor, meaning all cut pieces, floating, grouting, cleaning up to allow P-walls to layout and go to town framing behind you. Please start ramping up now for the added trowels needed the next two weeks. There's allot of CMU work on Floors 1,2 & 3 for you guys. We are currently checking and installing any missing rebar so you can run starting next week. Thanks

Tim Spano | Sr. Project Manager **Carolina's**
office: 843.974.4590 | mobile: 813.917.1656 | email:timspano@balfourbeattyus.com
Balfour Beatty Construction | www.balfourbeattyus.com
306 Meeting St., Suite 300, Charleston, SC 29401
Connect with us: Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Toby Holloway [mailto:tholloway@oldnorthstatemasonry.com]
Sent: Thursday, July 07, 2016 4:17 PM
To: Spano, Tim <timspano@Balfourbeattyus.com>
Cc: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Ricci, Daniel <DRicci@Balfourbeattyus.com>; Dale, Marty <mdale@balfourbeattyus.com>; Chip Venable <cvenable@oldnorthstatemasonry.com>; Dooley, Alec <adooley@Balfourbeattyus.com>
Subject: Re: Masonry Start at HMS

One foreman two masons three labors

Toby Holloway
Old North State Masonry
Vice President of operations
Mobile:704-622-0803

On Jul 7, 2016, at 3:49 PM, Spano, Tim <timspano@Balfourbeattyus.com> wrote:

Again Toby, How many trowels are scheduled to be here Monday? To be clearer, how many masons ____ How many Tenders ____ How Many Laborers___? We need to know what the manpower plan is for next week. We have framers starting also that will be chasing you guys up the structure and need to know your manpower plan to stick with the schedule.

Tim Spano | Sr. Project Manager **Carolina's**
office: 843.974.4590 | mobile: 813.917.1656 | email:timspano@balfourbeattyus.com
Balfour Beatty Construction | www.balfourbeattyus.com
306 Meeting St., Suite 300, Charleston, SC 29401
Connect with us: Facebook | Twitter | YouTube | LinkedIn
<image001.jpg>

From: Spano, Tim
Sent: Thursday, July 07, 2016 12:46 PM
To: Toby Holloway <tholloway@oldnorthstatemasonry.com>
Cc: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Ricci, Daniel <DRicci@Balfourbeattyus.com>; Waterfield, Peter <PWaterfield@Balfourbeattyus.com>; Dooley, Alec <adooley@Balfourbeattyus.com>; Chip Venable <cvenable@oldnorthstatemasonry.com>; Dale, Marty <mdale@balfourbeattyus.com>
Subject: Re: Masonry Start at HMS

How many trowels will be here Next week?

Sent from my iPhone

On Jul 7, 2016, at 11:06 AM, Toby Holloway <tholloway@oldnorthstatemasonry.com> wrote:

It is scheduled to start on Monday as planned

Toby Holloway
Old North State Masonry
Vice President of operations
Mobile:704-622-0803

On Jul 7, 2016, at 11:00 AM, Spano, Tim <timspano@Balfourbeattyus.com> wrote:

Is the first floor scheduled to be staged Monday with CMU and mortar? How many trowels will be on site to install CMU exterior walls on Monday? Thanks

Tim Spano | Sr. Project Manager **Carolina's**
office: 843.974.4590 | mobile: 813.917.1656 | email:timspano@balfourbeattyus.com
Balfour Beatty Construction | www.balfourbeattyus.com
306 Meeting St., Suite 300, Charleston, SC 29401
Connect with us: Facebook | Twitter | YouTube | LinkedIn
<image001.jpg>

From: Toby Holloway [mailto:tholloway@oldnorthstatemasonry.com]
Sent: Thursday, July 07, 2016 10:14 AM
To: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>
Cc: Ricci, Daniel <DRicci@Balfourbeattyus.com>; Waterfield, Peter <PWaterfield@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Dooley, Alec <adooley@Balfourbeattyus.com>; Chip Venable <cvenable@oldnorthstatemasonry.com>
Subject: Re: Masonry Start at HMS

The remaining material needed to lay that wall will be on site this afternoon same guy that lay the block yesterday will lay that block in the morning and complete it tomorrow before leaving

Toby Holloway
Old North State Masonry
Vice President of operations
Mobile:704-622-0803

On Jul 7, 2016, at 10:09 AM, Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com> wrote:

Toby,

Per our conversation, please confirm your mason is still onsite as I'm hearing conflicting stories. Let's not wait on rebar to drill and epoxy, Lithko owns that scope and will do so once your 1st course is down.

Also, attached (19/A201) is the detail showing the block wall needed to start on the ramp.

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Dooley, Alec
Sent: Thursday, July 07, 2016 8:25 AM
To: Chip Venable <cvenable@oldnorthstatemasonry.com>; tholloway@oldnorthstatemasonry.com
Cc: Ricci, Daniel <DRicci@Balfourbeattyus.com>; Waterfield, Peter <PWaterfield@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>
Subject: MSH - Preconstruction Meeting

Chip/Toby,

We are looking to set up a formal preconstruction meeting with Old North State. Does Tuesday early afternoon work with your schedule? Please advise.

Thanks,

Alec Dooley | Senior Project Engineer
mobile: 704.614.4907 | email: adooley@balfourbeattyus.com

Balfour Beatty Construction | 306 Meeting Street, Suite 300, Charleston, SC 29401| www.balfourbeattyus.com

<S201 - SECTIONS AND DETAILS .pdf>

Message

From: Spano, Tim [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=71519E3198A841C98B6B70E6FEBEDEDC-SPANO, TIM]
Sent: 8/16/2016 2:08:30 PM
To: Toby Holloway [tholloway@oldnorthstatemasonry.com]
CC: Joe Anastasi [Janastasi@oldnorthstatemasonry.com]; Chip Venable [cvenable@oldnorthstatemasonry.com]; Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]; Ricci, Daniel [DRicci@Balfourbeattyus.com]; Dale, Marty [mdale@balfourbeattyus.com]
Subject: RE: MSH - Masonry progress/issues for Basement and 1st floor completion
Flag: Follow up

I appreciate that but II want to make sure that Joe, Chip, you and my team are all on the same page. This is why I set up the conference call. It shouldn't take long. Thanks

Tim Spano | Sr. Project Manager Carolina's
office: 843.974.4590 | mobile: 813.917.1656 | email:timspano@balfourbeattyus.com
Balfour Beatty Construction | www.balfourbeattyus.com
306 Meeting St., Suite 300, Charleston, SC 29401
Connect with us: Facebook | Twitter | YouTube | LinkedIn

-----Original Message-----
From: Toby Holloway [mailto:tholloway@oldnorthstatemasonry.com]
Sent: Tuesday, August 16, 2016 3:06 PM
To: Spano, Tim <timspano@Balfourbeattyus.com>
Cc: Joe Anastasi <Janastasi@oldnorthstatemasonry.com>; Chip Venable <cvenable@oldnorthstatemasonry.com>; Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Ricci, Daniel <DRicci@Balfourbeattyus.com>; Dale, Marty <mdale@balfourbeattyus.com>
Subject: Re: MSH - Masonry progress/issues for Basement and 1st floor completion

I can call you now

Toby Holloway
Old North State Masonry
Vice President of operations
Mobile:704-622-0803

> On Aug 16, 2016, at 3:02 PM, Spano, Tim <timspano@Balfourbeattyus.com> wrote:
>
> I hear you but we need to discuss several items controlled by ONS that affect the BBC schedule on the call today.
>
> Tim Spano | Sr. Project Manager Carolina's
> office: 843.974.4590 | mobile: 813.917.1656 |
> email:timspano@balfourbeattyus.com
> Balfour Beatty Construction | www.balfourbeattyus.com
> 306 Meeting St., Suite 300, Charleston, SC 29401 Connect with us:
> Facebook | Twitter | YouTube | LinkedIn
>
>
>
>
> -----Original Message-----
> From: Toby Holloway [mailto:tholloway@oldnorthstatemasonry.com]
> Sent: Tuesday, August 16, 2016 2:59 PM
> To: Spano, Tim <timspano@Balfourbeattyus.com>
> Cc: Joe Anastasi <Janastasi@oldnorthstatemasonry.com>; Chip Venable
> <cvenable@oldnorthstatemasonry.com>; Starcevic, Nicholas
> <NStarcevic@Balfourbeattyus.com>; Ricci, Daniel
> <DRicci@Balfourbeattyus.com>; Dale, Marty <mdale@balfourbeattyus.com>
> Subject: Re: MSH - Masonry progress/issues for Basement and 1st floor
> completion
>
> I will be on site all day tomorrow as well as attending the sub
> meeting and will be able to get any and all input as a relates to
> schedule

>
> Toby Holloway
> Old North State Masonry
> Vice President of operations
> Mobile:704-622-0803
>
>> On Aug 16, 2016, at 1:51 PM, Spano, Tim <timspano@Balfourbeattyus.com> wrote:
>>
>> Please call 1-888-354-0094 passcode 826803 to discuss, crews,
>> schedule, concrete scheduling, manpower, Basement/1st floor
>> completion, staging, competent person and wed. sub meeting
>> representation. Thanks
>>
>> <meeting.ics>

10

Message

From: Goodwin, Shelly [sgoodwin@balfourbeattyus.com]
Sent: 8/26/2016 5:35:02 PM
To: Sandeen, Jeff [JSandeen@Balfourbeattyus.com]
CC: Dean, Pat [pdean@balfourbeattyus.com]
Subject: Re: The Mint and Cresent Dilworth

Got it, have a, have good weekend too.

Shelly Goodwin
cell: 919.796.6011 | email: sgoodwin@balfourbeattyus.com
Balfour Beatty Construction 406 S. McDowell St., Suite 200 Raleigh, NC 27601 | www.balfourbeattyus.com **ZERO HARM** Make Safety Personal
www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

On Aug 26, 2016, at 6:29 PM, Sandeen, Jeff <JSandeen@Balfourbeattyus.com> wrote:

Thanks Shelly but I am good right now. If you talk to them I would reiterate that we are serious and this is going to be painful for them if they don't get onboard.

Have a good weekend!

Jeffrey Sandeen | Vice President / Business Unit Leader, Carolinas
office: 704.319.4029 |mobile: 704.534.8522 | email: JSandeen@balfourbeattyus.com
Balfour Beatty Construction | 1930 Camden Road, Suite 280, Charlotte, NC 28203|www.balfourbeattyus.com
Connect with us: Facebook | Twitter | YouTube| Linkedin

On Aug 26, 2016, at 6:23 PM, Goodwin, Shelly <sgoodwin@balfourbeattyus.com> wrote:

You want me to help?

Shelly Goodwin
cell: 919.796.6011 | email: sgoodwin@balfourbeattyus.com
Balfour Beatty Construction 406 S. McDowell St., Suite 200 Raleigh, NC 27601 | www.balfourbeattyus.com **ZERO HARM** Make Safety Personal
www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

On Aug 26, 2016, at 6:13 PM, Dean, Pat <pdean@balfourbeattyus.com> wrote:

Check with Jeff.

Thanks,

Pat Dean

On Aug 26, 2016, at 6:10 PM, Goodwin, Shelly <sgoodwin@balfourbeattyus.com> wrote:

Would you like me help with this?

Get Outlook for iOS

From: Dean, Pat
Sent: Friday, August 26, 2016 5:28:54 PM
To: Goodwin, Shelly
Subject: Fwd: The Mint and Cresent Dilworth

They are about to screw themselves.

Thanks,

Pat Dean

Begin forwarded message:

From: Joe Anastasi <Janastasi@oldnorthstatemasonry.com>
Date: August 26, 2016 at 2:35:31 PM EDT
To: "Dean, Pat" <pdean@balfourbeattyus.com>
Cc: "Sandeen, Jeff" <JSandeen@Balfourbeattyus.com>, Toby Holloway <tholloway@oldnorthstatemasonry.com>, "Andrew S. Culicerto (aculicerto@slk-law.com)" <aculicerto@slk-law.com>
Subject: RE: The Mint and Cresent Dilworth

Pat,

We'll be more than happy to meet, but in three months we have not received any information to suggest fault.

As for the other projects we'll have to take them on a case by case basis, but your statement below is not accurate.

Please confirm what time you would like to meet.

Thanks,
Joe Anastasi

From: Dean, Pat [mailto:pdean@balfourbeattyus.com]
Sent: Friday, August 26, 2016 2:23 PM
To: Joe Anastasi <Janastasi@oldnorthstatemasonry.com>
Cc: Sandeen, Jeff <JSandeen@Balfourbeattyus.com>; Toby Holloway <tholloway@oldnorthstatemasonry.com>; Andrew S. Culicerto (aculicerto@slk-law.com) <aculicerto@slk-law.com>
Subject: Re: The Mint and Cresent Dilworth

Joe,
I would encourage you to meet and come to an agreement. There was fault there.

Jeff,
Let's make sure we have properly notified ONSM on 300 south Tryon, JM Alexander, kimpton hotel and Hotel at Marion Square, if they have not already been notified. These projects have clearly been impacted by ONSM and I don't want there to be any misunderstandings as suggested below.

Thanks,

Pat Dean

On Aug 26, 2016, at 1:07 PM, Joe Anastasi <Janastasi@oldnorthstatemasonry.com> wrote:

Jeff,

ONSM disagrees with your characterization of our previous conversations and the history of ONSM's performance on the Projects. ONSM has not been given any formal notice of delay on either Project as required by our Subcontract. (However, ONSM did give notice on multiple occasions that it was being delayed on the Project due to other trades not completing their work as originally scheduled.) One can only assume Balfour's claims of "notice of delay" are a few isolated emails sent regarding manpower. After these emails were received, ONSM responded denying it was delaying the Project and then met at the Project site with Balfour to demonstrate how we did not need additional manpower because the proceeding work was not completed to the point of allowing us to efficiently add more manpower. After our responsive emails and site meeting, ONSM never heard any whispers, much less direct conversation, regarding ONSM delaying the Projects until almost two years later when Balfour was attempting to close the Projects out. These concerns were raised by Balfour after you specifically stated you all had lost money on the Project and were trying to "share" the Projects loses with the subcontractors. In our meeting of July 24th, you simply took your total loss of approximately 8.5 million dollars (no documentation of this figure) and based on our contract value for the two projects as compared to your overall contract value you determined ONSM should absorb approximately 4% of your loss. (in excesses of $300,000). This approach is not justified for ONSM, who performed above and beyond what was required on the Projects.

ONSM has repeatedly stated it was not responsible for any delays on either Project. At the same time, Balfour has never provided any notice of delay to ONSM and has not presented any schedule analysis or claimed costs from ONSM newly alleged "delays." As we stated at the previous meeting, if Balfour provides documentation supporting what it feels are delays by ONSM, we will certainly look at any legitimate analysis and give it proper consideration. However, you are currently asking ONSM to consider adjusting the amounts owed under the contracts based on delay we do not believe exists. To even consider such a reduction, actual detail needs to be provided to ONSM for consideration.

If Balfour contends ONSM should accept some sort of delay based on the information provided to it thus far, I agree there might not be anything to discuss on 8/31/16. Nevertheless, if you would like to meet to discuss documented and supported claims, and how each may be resolved in light of the outstanding balances due to ONSM, I'll be available.

Additionally, while ONSM will continue to work for Balfour to close these Projects out, it will have to move forward with bond and lien claims if resolution cannot reached prior to September 8, 2016.

Best regards,

Joe Anastasi
President
Cell (704) 400-6802
janastasi@onsmllc.com

From: Sandeen, Jeff [mailto:JSandeen@Balfourbeattyus.com]
Sent: Friday, August 26, 2016 8:03 AM
To: Joe Anastasi <Janastasi@oldnorthstatemasonry.com>
Cc: Dean, Pat <pdean@balfourbeattyus.com>; Toby Holloway <tholloway@oldnorthstatemasonry.com>; Andrew S. Culicerto (aculicerto@slk-law.com) <aculicerto@slk-law.com>
Subject: RE: The Mint and Cresent Dilworth

Joe-

I appreciate you following up from our discussion last week and as I stated during our conversation I am continuing to work through the closeout process on both of the projects. As it currently stands, ONSM was notified of their impacts throughout both projects and all BBC is seeking to recover are the costs associated with those impacts.....this has nothing to do with absorbing a portion of any perceived loss on the project. All I intend to do is recover those costs that are solely attributed to ONSM's lack of performance and this has been clearly communicated to ONSM.

If ONSM is truly interested in resolving these project impacts as it states below I am more than willing to discuss a settlement but to assume that ONSM has had no impact on these projects is not a starting point that I am willing to accept. I am available on Wednesday, 8/31 at 2:00 if you would like to discuss further.

Thanks,

Jeffrey Sandeen | Vice President / Business Unit Leader, Carolinas
office: 704.319.4029 |mobile: 704.534.8522 | email: JSandeen@balfourbeattyus.com
Balfour Beatty Construction | 1930 Camden Road, Suite 280, Charlotte, NC 28203 |www.balfourbeattyus.com
Connect with us: Facebook | Twitter | YouTube| Linkedin

From: Joe Anastasi [mailto:Janastasi@oldnorthstatemasonry.com]
Sent: Thursday, August 25, 2016 10:54 AM
To: Sandeen, Jeff <JSandeen@Balfourbeattyus.com>
Cc: Dean, Pat <pdean@balfourbeattyus.com>; Toby Holloway <tholloway@oldnorthstatemasonry.com>; Andrew S. Culicerto (aculicerto@slk-law.com) <aculicerto@slk-law.com>
Subject: The Mint and Cresent Dilworth

Jeff,
We initially met on June, 23rd in regards to closing out the Mint project, and then we met on July 14th to discuss the closing out of both the Mint and Cresent. At that time you requested ONSM to absorb a portion of your loss on these projects without providing adequate support. Based on the lack of information and documentation to support your request we ended that meeting with an understanding you were to provide proper documentation. To date we have not received any additional information.

As I explained the other day on the phone, we are concerned for our lien rights on these project. Our attorney is going to handle both of these jobs simultaneously. The last day we worked on the Mint project was June 28th, 2016 with some touchup veneer cleaning. In order to provide for adequate time to process our liens; our attorney has requested to start processing these no later than September 8th, 2016. As we discussed we wanted to provide you with adequate notice so we have ample time to resolve this matter and we didn't want to surprise anyone.

Thank you,

Joe Anastasi
President

Cell (704) 400-6802
janastasi@onsmllc.com

Message

From: Spano, Tim [timspano@Balfourbeattyus.com]
Sent: 10/17/2016 5:57:53 AM
To: Ricci, Daniel [DRicci@Balfourbeattyus.com]; Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]
Subject: FW: Re-shores on Level 5
Attachments: Marion Square RS-2-April 6 Rev-PE.pdf

This is good.

Tim Spano | Sr. Project Manager **Carolina's**
office: 843.974.4590 | mobile: 813.917.1656 | email:timspano@balfourbeattyus.com
Balfour Beatty Construction | www.balfourbeattyus.com
306 Meeting St., Suite 300, Charleston, SC 29401
Connect with us: Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Quinn, Timothy [mailto:quinnt@Lithko.com]
Sent: Friday, October 14, 2016 4:08 PM
To: Ricci, Daniel <DRicci@Balfourbeattyus.com>; Beech, Joshua <beechj@Lithko.com>
Cc: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Dooley, Alec <adooley@Balfourbeattyus.com>
Subject: RE: Re-shores on Level 5

Dan,

See attached. The 3 floors of reshore is per the professional engineer stamped reshore drawings.

Timothy Quinn
Lithko Contracting, LLC
980-621-5552 (Mobile)
quinnt@lithko.com

From: Ricci, Daniel [mailto:DRicci@Balfourbeattyus.com]
Sent: Friday, October 14, 2016 4:00 PM
To: Quinn, Timothy <quinnt@Lithko.com>; Beech, Joshua <beechj@Lithko.com>
Cc: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Dooley, Alec <adooley@Balfourbeattyus.com>
Subject: Re-shores on Level 5

Tim/Josh, did you ever hear back from the Doka engineer on whether we need to leave the re-shores in place on Level 5 in order to pour Level 9? I could not find the info in the attached but I am just a dumb GC... To recap, that is 4 floors re-shored compared to the 3 floors we have been doing...If that is the case we won't be able to pull the re-shores on 5 West until 11/1 which is the day the mason is due to start on Level 5 and will need all the re-shores removed. In turn we won't be able to pull the East side of 5 until 11/14. Please advise as it would really help us stocking ahead of time to hit

production work on 11/1 and have the entire floor cleared of re-shores and not stop the mason who is already struggling with masons and manpower...

Dan Ricci | Superintendent
office: 704.319.4000 | mobile: 704.400.2290 | email: dricci@balfourbeattyus.com
Balfour Beatty Construction | 1930 Camden Rd Ste 280, Charlotte, NC 28203 | www.balfourbeattyus.com
Connect with us: Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

Message

From: Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]
Sent: 12/16/2016 3:26:24 PM
To: Joe Anastasi [Janastasi@oldnorthstatemasonry.com]
CC: Chip Venable [cvenable@oldnorthstatemasonry.com]; Toby Holloway [tholloway@oldnorthstatemasonry.com]; Spano, Tim [timspano@Balfourbeattyus.com]; Ricci, Daniel [DRicci@Balfourbeattyus.com]; Goodwin, Shelly [sgoodwin@balfourbeattyus.com]; Sandeen, Jeff [JSandeen@Balfourbeattyus.com]; Stoneking, Tony [tstoneking@balfourbeattyus.com]; Dale, Marty [mdale@balfourbeattyus.com]
Subject: 13026000-020-01 Notice of Delay and Demand for Cure - Hotel at Marion Square
Attachments: 13026000-020-01 Notification of Delay and Demand for Cure.pdf

Joe,

See attached notice of delay and demand for cure. The detail below provides additional clarification for items that Old North State needs immediate attention to. We have concerns that Old North State Masonry ("ONSM)" has the proper manpower and supervision onsite to meet the schedule and quality necessary to complete this project. We continue to get excuses on why work cannot be done instead of solutions to make this project a success. A recovery plan needs to be submitted to my attention by close of business 12/20/16.

1. Housekeeping – all CMU, trash, debris, and equipment needs to be removed from basement. There is no lay down on this project. CMU is to be delivered and staged is locations as it is required. We have agreed to allow precast storage in the basement, but all CMU needs to be delivered as it is required.
2. Quality Assurance and Control – ONSM needs to immediately address the distributed Field Report "Q245 Hotel at Marion Square FR-2". This was to be completed by 12/12/16. Additional manpower to be allocated to remedial work and not taken away from scheduled activities.
a. Window openings incorrectly located need to be addressed.
b. Control joints improperly located need to be corrected. A plan to correct and install control joints after walls have been grouted needs to be submitted immediately.
3. Schedule – ONSM needs to submit a plan to address all areas that are behind schedule with appropriate manpower.
a. Stairs – are to be completed in sequence with the floors
b. Front Entry in South West corner – well behind schedule and still needs to be grouted, keyed out, and scaffold broken down
c. Precast on L5 – additional certified masons needed to set precast so other areas do not fall behind. An additional crew needs to be available to start precast on L1 East when ready. We were told that the masons onsite would be setting the precast, but that will take manpower aware from other areas.
d. L6 parapets – should have crew working on parapets and balconies.
e. Roof - crew needed on roof to start immediately
4. Hoisting – original schedule has tower crane removal at end of January. ONSM needs to submit hoisting plan for once the tower crane is removed. Any overtime and extended Tower Crane rental will be the responsibility of ONSM.

This notice is meant to draw attention to all the areas that we feel are lacking in production and quality. This is by no means a complete list of areas that are behind or need to be addressed, but some glaring deficiencies on the project. At the same time, we feel that Old North State can properly address these concerns in a timely fashion to get back on track. Please review and respond accordingly.

Thanks,

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

Message

From: Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]
Sent: 1/23/2017 4:25:53 PM
To: Joe Anastasi [Janastasi@oldnorthstatemasonry.com]
CC: Chip Venable [cvenable@oldnorthstatemasonry.com]; Toby Holloway [tholloway@oldnorthstatemasonry.com]; Spano, Tim [timspano@Balfourbeattyus.com]; Cossette, Jeno [JCossette@Balfourbeattyus.com]; Sandeen, Jeff [JSandeen@Balfourbeattyus.com]; Goodwin, Shelly [sgoodwin@balfourbeattyus.com]
Subject: 13026000-20-2 Notice of Delay and Demand to Cure - 72 Hours - HMS
Attachments: MSH-019 Detailed Schedule 12-13-16.pdf; 13026000-20-02 ONSM Notice of Delay and Demand for Cure.pdf

Joe,

See attached 72 hour Notice to Cure. Below is a detailed breakout of areas that are in delay, mostly based on the attached 12/13 schedule and conversation onsite. We feel we have been more than lenient with Old North State and given ample opportunity for ONSM to cure their deficiencies. We have requested additional manpower to maintain the schedule, but have seen no substantial increase to the current production. Provide a recovery schedule with adequate manpower addressed to each activity by COB 1/24/17. This schedule needs to provide a plan for all deficient areas listed below to be complete by 1/28/17 and Level 7 complete by 2/3/17.

Southwest Front Entry – still incomplete. Was scheduled to complete in November 16.
Arches – notified to start 1/13/17. Scaffold still not complete and no masonry started. Needs to be complete by 1/27/17.
L3 Low Grout Break – identified on 11/28. ONSM denied responsibility, SM&E performed core test and ONSM maintains not a grout issue. ONSM verbally proposed fix on 1/18, BBC RFId and gave direction to ONSM on 1/19. Activity still not started, causing delay.
All low breaks – direction provided on 11/19, still no action by ONSM.
Window in 309 - still wrong and in delay. Identified in November.
Control Joints – identified in October and November, multiple wrong, will slow down stucco if fixed on scaffold.
Stair 3 – not complete, in delay
Stair 4 – not complete, in delay
Level 3 Windows – opening 4" too large. Not complete and fix not started, in delay.
Level 5 – not complete, in delay. 12/13/16 schedule included precast activity completing on 1/16/17 and CMU finishing 1/23/17.
Level 6 – not complete, in delay. 12/13/16 schedule showed 1/11/17 completion.
Level 7 – not started, in delay. 12/13/16 schedule showed activity 1/12/17-1/25/17.
Level 8 – not started, not yet in delay. 12/13/16 schedule shows this activity starting 1/26/17.

See link for 1 23 17 Masonry Progress Photos
https://bbcus.egnyte.com/fl/hOTgdZIPnm

Thanks,

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

Message

From: Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]
Sent: 1/27/2017 3:17:59 PM
To: Chip Venable [cvenable@oldnorthstatemasonry.com]
CC: Joe Anastasi [Janastasi@oldnorthstatemasonry.com]; Toby Holloway [tholloway@oldnorthstatemasonry.com]; Spano, Tim [timspano@Balfourbeattyus.com]; Cossette, Jeno [JCossette@Balfourbeattyus.com]; Sandeen, Jeff [JSandeen@Balfourbeattyus.com]; Goodwin, Shelly [sgoodwin@balfourbeattyus.com]; Dooley, Alec [adooley@Balfourbeattyus.com]
Subject: RE: 13026000-20-2 Notice of Delay and Demand to Cure - 72 Hours - HMS

Importance: High

Chip,

Manpower is onsite and has had time acclimate. The dates in your 1/24 response letter need to be updated on Monday and in line with the Notice to Cure dates set forth in our 1/23 demand.

There are few clarifications to your letter that need to be made...

1. BBC has acknowledged the extended dates and change in scope. We have committed to pay every penny and give every requested schedule extension to ONSM for the sleeve issue, but ONSM has not committed to keep the schedule. 80% of that value was been paid, but we're grossly behind schedule AFTER incorporating your requested extensions. See below for ACTUAL dates this project has experienced.
   a. L1 – ONSM requested 6 additional days bringing activity to 20 total days. 7/11 S – 8/23F, 32 days to complete, 12 days over schedule
      i. 8/23 is substantial completion, but we're still chasing down punch issues so this floor is not complete.
   b. L2 – no additional days requested. We're starting fresh here since there were multiple issues on L1 that contributed to the 32 days to complete.
      i. ONSM started 8/15 and "finished" 10/7 – 40 days, 26 days over schedule.
      ii. 10/7 is substantial completion, but we're still chasing down punch issues so this floor is not complete.
   c. L3 – ONSM requested 8 additional days (22 total days). Scheduled activity was 9/1 – 9/30. Actual was 10/10 - 11/15
      i. 32 days over schedule, we're still chasing down punch issues so this floor is not complete.
   d. L4 – ONSM requested 8 additional days. Scheduled activity was 10/3 - 10/26. Actual was 10/31 - 12/14?
      i. +/-32 days behind schedule, we're still chasing down punch issues so this floor is not complete.
2. L5 is an anomaly and we can admit that we were not prepared for the precast band. However, you start on 12/15 and it is 1/27. That's 35 working days and you're projecting completion by 2/3, *40 days*. The slow down on this floor was lack of sleeves in the cast stone for rebar. ONSM admittedly missed this detail, but made no provisions to core the precast to keep schedule (i.e. coring 12 hours a day, bringing additional machines, etc). You have had 2 lifting mechanisms here for 4 weeks, but just finished with precast Monday. 24 days of setting ~130 precast pieces, or 2.5 per day per hook. That's nowhere near the 10 per hook that ONSM committed to.
3. L6 started 12/16 and you're projecting a 2/20 completion. This makes no sense given your requesting more than the 10 days per contract and you're already 60% complete with CMU.
4. L7 can start where you topped out which is enough to start. ONSM needs to top on East, West, and North walls on L7 by end of next week so it can start setting precast on L8 by 2/6.

The 1/24 response shows no commitment by Old North State Masonry to cure the schedule. We're now +/- 50 days behind schedule mostly, in part to masonry, **after** we acknowledge and pay for the added time on L1, L3 and L4. We have tried to be team players on this project and understood the difficultly of the logistics on this project; however, ONSM bid a job that had tight logistics, no lay down, an aggressive schedule, and tiered coordination. Old North State needs to provide, in writing, a commitment to finishing the CMU on this project by 2/24. That includes all punch, rework, topping out, misc walls, stairs, etc.

Thank you,

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Chip Venable [mailto:cvenable@oldnorthstatemasonry.com]
Sent: Wednesday, January 25, 2017 9:01 AM
To: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>
Cc: Joe Anastasi <Janastasi@oldnorthstatemasonry.com>; Toby Holloway <tholloway@oldnorthstatemasonry.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Cossette, Jeno <JCossette@Balfourbeattyus.com>; Sandeen, Jeff <JSandeen@Balfourbeattyus.com>; Goodwin, Shelly <sgoodwin@balfourbeattyus.com>
Subject: RE: 13026000-20-2 Notice of Delay and Demand to Cure - 72 Hours - HMS

Nick,

Let us get the additional manpower on-site and let Toby distribute them. Once we have them rolling we will be able to discuss.

Best Regards,

Chip Venable
Project Manager
Old North State Masonry

From: Starcevic, Nicholas [mailto:NStarcevic@Balfourbeattyus.com]
Sent: Tuesday, January 24, 2017 6:24 PM
To: Chip Venable <cvenable@oldnorthstatemasonry.com>
Cc: Joe Anastasi <Janastasi@oldnorthstatemasonry.com>; Toby Holloway <tholloway@oldnorthstatemasonry.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Cossette, Jeno <JCossette@Balfourbeattyus.com>; Sandeen, Jeff <JSandeen@Balfourbeattyus.com>; Goodwin, Shelly <sgoodwin@balfourbeattyus.com>
Subject: Re: 13026000-20-2 Notice of Delay and Demand to Cure - 72 Hours - HMS

Chip -

This isn't going to work as there is no plan on recovering L5, L6, L7, and L8. The durations you are proposing are longer than contractual and egregious. There appears to be no sense of urgency and acknowledgment that you need to accelerate.

Are you available to discuss tomorrow morning at 9:30?

Nick Starcevic | Balfour Beatty Construction
Cell: 704.361.3265

On Jan 24, 2017, at 6:07 PM, Chip Venable <cvenable@oldnorthstatemasonry.com> wrote:

Nick,

Please see the attached letter in response to your Notice of Delay and Demand for Cure dated 1.23.2017.

Best Regards,

Chip Venable
Project Manager
Old North State Masonry

From: Starcevic, Nicholas [mailto:NStarcevic@Balfourbeattyus.com]
Sent: Monday, January 23, 2017 5:26 PM
To: Joe Anastasi <Janastasi@oldnorthstatemasonry.com>
Cc: Chip Venable <cvenable@oldnorthstatemasonry.com>; Toby Holloway <tholloway@oldnorthstatemasonry.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Cossette, Jeno <JCossette@Balfourbeattyus.com>; Sandeen, Jeff <JSandeen@Balfourbeattyus.com>; Goodwin, Shelly <sgoodwin@balfourbeattyus.com>
Subject: 13026000-20-2 Notice of Delay and Demand to Cure - 72 Hours - HMS

Joe,

See attached 72 hour Notice to Cure. Below is a detailed breakout of areas that are in delay, mostly based on the attached 12/13 schedule and conversation onsite. We feel we have been more than lenient with Old North State and given ample opportunity for ONSM to cure their deficiencies. We have requested additional manpower to maintain the schedule, but have seen no substantial increase to the current production. Provide a recovery schedule with adequate manpower addressed to each activity by COB 1/24/17. This schedule needs to provide a plan for all deficient areas listed below to be complete by 1/28/17 and Level 7 complete by 2/3/17.

Southwest Front Entry – still incomplete. Was scheduled to complete in November 16.
Arches – notified to start 1/13/17. Scaffold still not complete and no masonry started. Needs to be complete by 1/27/17.
L3 Low Grout Break – identified on 11/28. ONSM denied responsibility, SM&E performed core test and ONSM maintains not a grout issue. ONSM verbally proposed fix on 1/18, BBC RFId and gave direction to ONSM on 1/19. Activity still not started, causing delay.
All low breaks – direction provided on 11/19, still no action by ONSM.
Window in 309 - still wrong and in delay. Identified in November.
Control Joints – identified in October and November, multiple wrong, will slow down stucco if fixed on scaffold.
Stair 3 – not complete, in delay
Stair 4 – not complete, in delay
Level 3 Windows – opening 4" too large. Not complete and fix not started, in delay.
Level 5 – not complete, in delay. 12/13/16 schedule included precast activity completing on 1/16/17 and CMU finishing 1/23/17.
Level 6 – not complete, in delay. 12/13/16 schedule showed 1/11/17 completion.
Level 7 – not started, in delay. 12/13/16 schedule showed activity 1/12/17-1/25/17.
Level 8 – not started, not yet in delay. 12/13/16 schedule shows this activity starting 1/26/17.

See link for 1 23 17 Masonry Progress Photos
https://bbcus.egnyte.com/fl/hOTgdZIPnm

Thanks,

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn
<image001.jpg><image002.jpg><image003.jpg>

<1259-ONSM Response to Notice of Delay and Demand for Cure dated 1.23.2017.pdf>

Message

From: Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]
Sent: 2/11/2017 8:24:04 AM
To: Joe Anastasi [Janastasi@oldnorthstatemasonry.com]; Toby Holloway [tholloway@oldnorthstatemasonry.com]
CC: Chip Venable [cvenable@oldnorthstatemasonry.com]; Cossette, Jeno [JCossette@Balfourbeattyus.com]; Sandeen, Jeff [JSandeen@Balfourbeattyus.com]; Goodwin, Shelly [sgoodwin@balfourbeattyus.com]; Dooley, Alec [adooley@Balfourbeattyus.com]; Dale, Marty [mdale@balfourbeattyus.com]; Spano, Tim [timspano@Balfourbeattyus.com]
Subject: Re: Stone setting

Toby / Joe,

I am very disappointed that you have 20+ people onsite and no competent person. We are dismantling scaffold, laying block on multiple floors, working on perimeters at heights, etc and Jamaica is the most qualified person onsite. While he works hard, he is not a competent person for ONSM.

Secondly, all the precast in the window openings needs to be cleaned by Tuesday. Be prepared Monday because no one onsite currently is capable of the work nor is their leadership to direct it. Our carpenters are each spending 25% of their time cleaning precast sills for the window bucks as are the window installers. We accept no liability for any damage and will charge their time to ONSM accordingly.

Further, I'm very surprised and again disappointed by the lack of protection on the precast. I have seen multiple attempts fail to clean minor scuffs and mortar spillage on the mock up and no successful attempts to clean it on the building. I would also estimate 95% of the precast onsite has mortar on it with some as much as 1.5" of build up to exposed surfaces. Since ONSM has not shown an ability to successfully clean the precast in place, we are demanding that you clean it prior to installing or replace it. As soon as the windows opening are cleaned, notify me in writing so I can inspect.

Thank you,

Nick Starcevic | Balfour Beatty Construction
Cell: 704.361.3265

On Feb 11, 2017, at 8:36 AM, Spano, Tim <timspano@Balfourbeattyus.com> wrote:

Toby, as I do not agree with this timing of the flashing order release, I am aware of the delivery date. There are allot of stone pieces that need to be set prior to any flashing install and allot of staging materials from the basement to roof, terraces and East and Southeast locations that will take the latter part of next week to do so. The terrace flashing cap should be arriving about the same time as your flashing which will allow full install capabilities on the building. We need as much base stone and window/ door surrounds installed as possible to allow Premier Exterior to scaffold up to the second floor for waterproofing CMU prior to setting the second floor cast. I am hearing that you will be weening of the site soon and Hat Karla will be the ONS competent person on site overseeing all stone install. Is that correct?

Tim Spano | Sr. Project Manager **Carolina's**
office: 843.974.4590 | mobile: 813.917.1656 | email:timspano@balfourbeattyus.com
Balfour Beatty Construction | www.balfourbeattyus.com
306 Meeting St., Suite 300, Charleston, SC 29401
Connect with us: Facebook | Twitter | YouTube | LinkedIn

On Feb 10, 2017, at 4:50 PM, Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com> wrote:

ONSM needs to provide the lull to feed the RT. We are simply providing one as an extra hook so if it's not being used solely for that reason we need at the very least share the cost for how it's being used.

Nick Starcevic | Balfour Beatty Construction
Cell: 704.361.3265

On Feb 10, 2017, at 4:47 PM, Toby Holloway <tholloway@oldnorthstatemasonry.com> wrote:

As well the lull will only be able to set a handful of pieces it will mainly be used to feed the RT and the RT will be feeding the mini a portion of the time . To be clear that will not be three hooks setting 8 stones per day from a schedule standpoint
Thank you

Toby Holloway
Vice president operations
Old North State Masonry
704-622-0803

On Feb 10, 2017, at 4:41 PM, Joe Anastasi <Janastasi@oldnorthstatemasonry.com> wrote:

Tim,
FYI
Please check with Nick—the Flashing was just released today and hopefully will be delivered to site Feb 21st or 22nd.

Joe A.

From: Spano, Tim [mailto:timspano@Balfourbeattyus.com]
Sent: Friday, February 10, 2017 4:30 PM
To: Joe Anastasi <Janastasi@oldnorthstatemasonry.com>; Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Chip Venable <cvenable@oldnorthstatemasonry.com>
Cc: Toby Holloway <tholloway@oldnorthstatemasonry.com>; Cossette, Jeno <JCossette@Balfourbeattyus.com>; Sandeen, Jeff <JSandeen@Balfourbeattyus.com>; Goodwin, Shelly <sgoodwin@balfourbeattyus.com>; Dooley, Alec <adooley@Balfourbeattyus.com>
Subject: RE: 13026000-20-2 Notice of Delay and Demand to Cure - 72 Hours - HMS

Joe, Toby and Chip, I know Jeno and Toby have gone over this but I want to inform you all that we currently have a lull on site to set lower cast stone with, the RT Crane will be delivered Tuesday morning (2/14/17) and the mini crane for the terraces/roof will be delivery Wednesday morning 2/15/17. Make sure the stone setting manpower is ready to go for three hooks next week. Thanks

Tim Spano | Sr. Project Manager **Carolina's**
office: 843.974.4590 | mobile: 813.917.1656 | email:**timspano@balfourbeattyus.com**
Balfour Beatty Construction | www.balfourbeattyus.com
306 Meeting St., Suite 300, Charleston, SC 29401
Connect with us: Facebook | Twitter | YouTube | LinkedIn
<image001.jpg>

From: Joe Anastasi [mailto:Janastasi@oldnorthstatemasonry.com]
Sent: Wednesday, February 08, 2017 11:44 AM
To: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Chip Venable <cvenable@oldnorthstatemasonry.com>
Cc: Toby Holloway <tholloway@oldnorthstatemasonry.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Cossette,

Jeno <JCossette@Balfourbeattyus.com>; Sandeen, Jeff <JSandeen@Balfourbeattyus.com>; Goodwin, Shelly <sgoodwin@balfourbeattyus.com>; Dooley, Alec <adooley@Balfourbeattyus.com>
Subject: RE: 13026000-20-2 Notice of Delay and Demand to Cure - 72 Hours - HMS

Nick,
From our conference call on 2/2/16 you are right Toby and Jeno were to get together on Monday. They met this morning. Right now it appears the crane will arrive on site Friday and after set up will hoist joist to the roof initially. Afterwards we will begin setting precast. It does not appear the cherry picker will be on site this week. I need to make sure we clarify a couple points to your item number 1 below.

A) ONSM will need the crane continuously for the 8 hours, if other picks are needed ONSM has to have priority in order to install as many pcs. as possible.
B) The 8 pcs. per day is an average—you should expect that number fluctuate. This information was provided to assist in scheduling, you folks have the hoisting regardless of the number installed, which will be effected by site conditions encountered. It is our intent to work closely together to install as many pcs. as possible each and every day. We cannot agree to your prorated scenario.
C) The number of hooks will be layout and agreed to by Toby and Jeno. But based on the site conditions and the lack of lay down space; physically 4 hooks will be improbable and 3 will be difficult. This conditions have not changed and have been known. All hooks need to work efficiently.
D) There are still some open items regarding the flashing we are providing as well as the flashing provided by other at the 6th floor parapet as well as the approval of our additional labor costs.

The balance of the outstanding items will be addressed by Toby later today.

We as we discussed we will do everything in our power to beat the scheduling information previously provided. The 8th floor, precast included, required 18 to 19 work days.

For months now, you have told me, the change order for the Time and Material work performed at first floor would be written. During our discussions on Thursday you said you would send to purchasing by Friday. In good faith can you please get this written.

Sincerely,

Joe Anastasi
President
Cell (704) 400-6802
janastasi@onsmllc.com

From: Starcevic, Nicholas [mailto:NStarcevic@Balfourbeattyus.com]
Sent: Tuesday, February 07, 2017 11:08 AM
To: Chip Venable <cvenable@oldnorthstatemasonry.com>
Cc: Joe Anastasi <Janastasi@oldnorthstatemasonry.com>; Toby Holloway <tholloway@oldnorthstatemasonry.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Cossette, Jeno <JCossette@Balfourbeattyus.com>; Sandeen, Jeff <JSandeen@Balfourbeattyus.com>; Goodwin, Shelly <sgoodwin@balfourbeattyus.com>; Dooley, Alec <adooley@Balfourbeattyus.com>
Subject: RE: 13026000-20-2 Notice of Delay and Demand to Cure - 72 Hours - HMS
Importance: High

Chip,

See below updates from today's pull planning meeting that ONSM was not in attendance

1. Our team is unaware if Toby is back onsite. Jeno and Toby were supposed to meet yesterday re hoisting for crane, but this did not happen. We have a RT 90T crane and cherry picker for the roof showing up Thursday afternoon / Friday AM for cast stone. ONSM has the RT crane for a minimum 8 hours a day and needs to set, at minimum, 8 pieces per day. If this is not hit, ONSM will pay for the rental and operator at a prorated rate.
a. Before we order additional hoisting, we need Toby back onsite to review with Jeno. Our intention is to have 3-4 hooks on site to average setting 30 piece per week over the next 4 months.
2. Multiple locations where grout is not in walls as indicated on the contract documents. BBC determining the best way to test and proceed, but all identified areas need to be correct within 72 hours.
a. Parapet clean outs with no grout
b. Window headers and jambs not grouted.
3. SW front entry – ONSM 1.24.17 Response Letter ("ONSM RL") indicated it would be complete 2.3.17. Still not complete, need radius windows cut and lintels installed.
4. L3 Low Grout Break – not complete
5. All other low grout breaks – not complete
6. Stair 3– will not be complete today as indicated
7. L3 angels not complete, not started. We will supplement this activity, but need confirmation that all headers and jambs are grouted.
a. There will be a back charge for MSI attempting to install the lintel in the mock ups. Which they were unable to complete because the header and jambs were not grouted.

We have also not seen a response with dates for the CMU based on our conversation last Thursday. Please advise.

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Chip Venable [mailto:cvenable@oldnorthstatemasonry.com]
Sent: Friday, January 27, 2017 4:41 PM
To: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>
Cc: Joe Anastasi <Janastasi@oldnorthstatemasonry.com>; Toby Holloway <tholloway@oldnorthstatemasonry.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Cossette, Jeno <JCossette@Balfourbeattyus.com>; Sandeen, Jeff <JSandeen@Balfourbeattyus.com>; Goodwin, Shelly <sgoodwin@balfourbeattyus.com>; Dooley, Alec <adooley@Balfourbeattyus.com>
Subject: RE: 13026000-20-2 Notice of Delay and Demand to Cure - 72 Hours - HMS

Nick,

We are going get the CMU completed as quickly as possible. Your responses below still fail to acknowledge items we have told your team and documented in our daily reports, notices and emails. The complete evaluation of time lost and cost associated will be conducted at a later time. it is Friday evening and I don't feel like arguing. This is the last email that I will reply to you today about the schedule.

Best Regards,

Chip Venable

Project Manager
Old North State Masonry

From: Starcevic, Nicholas [mailto:NStarcevic@Balfourbeattyus.com]
Sent: Friday, January 27, 2017 4:18 PM
To: Chip Venable <cvenable@oldnorthstatemasonry.com>
Cc: Joe Anastasi <Janastasi@oldnorthstatemasonry.com>; Toby Holloway <tholloway@oldnorthstatemasonry.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Cossette, Jeno <JCossette@Balfourbeattyus.com>; Sandeen, Jeff <JSandeen@Balfourbeattyus.com>; Goodwin, Shelly <sgoodwin@balfourbeattyus.com>; Dooley, Alec <adooley@Balfourbeattyus.com>
Subject: RE: 13026000-20-2 Notice of Delay and Demand to Cure - 72 Hours - HMS
Importance: High

Chip,

Manpower is onsite and has had time acclimate. The dates in your 1/24 response letter need to be updated on Monday and in line with the Notice to Cure dates set forth in our 1/23 demand.

There are few clarifications to your letter that need to be made...

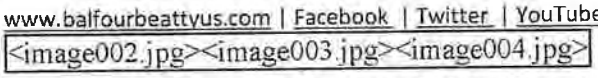
1. BBC has acknowledged the extended dates and change in scope. We have committed to pay every penny and give every requested schedule extension to ONSM for the sleeve issue, but ONSM has not committed to keep the schedule. 80% of that value was been paid, but we're grossly behind schedule AFTER incorporating your requested extensions. See below for ACTUAL dates this project has experienced.
   a. L1 – ONSM requested 6 additional days bringing activity to 20 total days. 7/11 S – 8/23F, 32 days to complete, 12 days over schedule
      i. <!--[if !supportLists]--><!--[endif]-->8/23 is substantial completion, but we're still chasing down punch issues so this floor is not complete.
   b. L2 – no additional days requested. We're starting fresh here since there were multiple issues on L1 that contributed to the 32 days to complete.
      i. <!--[if !supportLists]--><!--[endif]-->ONSM started 8/15 and "finished" 10/7 – 40 days, 26 days over schedule.
      ii. <!--[if !supportLists]--><!--[endif]-->10/7 is substantial completion, but we're still chasing down punch issues so this floor is not complete.
   c. L3 – ONSM requested 8 additional days (22 total days). Scheduled activity was 9/1 – 9/30. Actual was 10/10 - 11/15
      i. <!--[if !supportLists]--><!--[endif]-->32 days over schedule, we're still chasing down punch issues so this floor is not complete.
   d. L4 – ONSM requested 8 additional days. Scheduled activity was 10/3 - 10/26. Actual was 10/31 - 12/14?
      i. <!--[if !supportLists]--><!--[endif]--> +/-32 days behind schedule, we're still chasing down punch issues so this floor is not complete.
2. L5 is an anomaly and we can admit that we were not prepared for the precast band. However, you start on 12/15 and it is 1/27. That's 35 working days and you're projecting completion by 2/3, *40 days*. The slow down on this floor was lack of sleeves in the cast stone for rebar. ONSM admittedly missed this detail, but made no provisions to core the precast to keep schedule (i.e. coring 12 hours a day, bringing additional machines, etc). You have had 2 lifting mechanisms here for 4 weeks, but just finished with precast Monday. 24 days of setting ~130 precast pieces, or 2.5 per day per hook. That's nowhere near the 10 per hook that ONSM committed to.
3. L6 started 12/16 and you're projecting a 2/20 completion. This makes no sense given your requesting more than the 10 days per contract and you're already 60% complete with CMU.
4. L7 can start where you topped out which is enough to start. ONSM needs to top on East, West, and North walls on L7 by end of next week so it can start setting precast on L8 by 2/6.

The 1/24 response shows no commitment by Old North State Masonry to cure the schedule. We're now +/- 50 days behind schedule mostly, in part to masonry, **after** we acknowledge and pay for the added time on L1, L3 and L4. We

have tried to be team players on this project and understood the difficultly of the logistics on this project; however, ONSM bid a job that had tight logistics, no lay down, an aggressive schedule, and tiered coordination. Old North State needs to provide, in writing, a commitment to finishing the CMU on this project by 2/24. That includes all punch, rework, topping out, misc walls, stairs, etc.

Thank you,

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn


From: Chip Venable [mailto:cvenable@oldnorthstatemasonry.com]
Sent: Wednesday, January 25, 2017 9:01 AM
To: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>
Cc: Joe Anastasi <Janastasi@oldnorthstatemasonry.com>; Toby Holloway <tholloway@oldnorthstatemasonry.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Cossette, Jeno <JCossette@Balfourbeattyus.com>; Sandeen, Jeff <JSandeen@Balfourbeattyus.com>; Goodwin, Shelly <sgoodwin@balfourbeattyus.com>
Subject: RE: 13026000-20-2 Notice of Delay and Demand to Cure - 72 Hours - HMS

Nick,

Let us get the additional manpower on-site and let Toby distribute them. Once we have them rolling we will be able to discuss.

Best Regards,

Chip Venable
Project Manager
Old North State Masonry

From: Starcevic, Nicholas [mailto:NStarcevic@Balfourbeattyus.com]
Sent: Tuesday, January 24, 2017 6:24 PM
To: Chip Venable <cvenable@oldnorthstatemasonry.com>
Cc: Joe Anastasi <Janastasi@oldnorthstatemasonry.com>; Toby Holloway <tholloway@oldnorthstatemasonry.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Cossette, Jeno <JCossette@Balfourbeattyus.com>; Sandeen, Jeff <JSandeen@Balfourbeattyus.com>; Goodwin, Shelly <sgoodwin@balfourbeattyus.com>
Subject: Re: 13026000-20-2 Notice of Delay and Demand to Cure - 72 Hours - HMS

Chip -

This isn't going to work as there is no plan on recovering L5, L6, L7, and L8. The durations you are proposing are longer than contractual and egregious. There appears to be no sense of urgency and acknowledgment that you need to accelerate.

Are you available to discuss tomorrow morning at 9:30?

Nick Starcevic | Balfour Beatty Construction
Cell: 704.361.3265

On Jan 24, 2017, at 6:07 PM, Chip Venable <cvenable@oldnorthstatemasonry.com> wrote:

Nick,

Please see the attached letter in response to your Notice of Delay and Demand for Cure dated 1.23.2017.

Best Regards,

Chip Venable
Project Manager
Old North State Masonry

From: Starcevic, Nicholas [mailto:NStarcevic@Balfourbeattyus.com]
Sent: Monday, January 23, 2017 5:26 PM
To: Joe Anastasi <Janastasi@oldnorthstatemasonry.com>
Cc: Chip Venable <cvenable@oldnorthstatemasonry.com>; Toby Holloway <tholloway@oldnorthstatemasonry.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Cossette, Jeno <JCossette@Balfourbeattyus.com>; Sandeen, Jeff <JSandeen@Balfourbeattyus.com>; Goodwin, Shelly <sgoodwin@balfourbeattyus.com>
Subject: 13026000-20-2 Notice of Delay and Demand to Cure - 72 Hours - HMS

Joe,

See attached 72 hour Notice to Cure. Below is a detailed breakout of areas that are in delay, mostly based on the attached 12/13 schedule and conversation onsite. We feel we have been more than lenient with Old North State and given ample opportunity for ONSM to cure their deficiencies. We have requested additional manpower to maintain the schedule, but have seen no substantial increase to the current production. Provide a recovery schedule with adequate manpower addressed to each activity by COB 1/24/17. This schedule needs to provide a plan for all deficient areas listed below to be complete by 1/28/17 and Level 7 complete by 2/3/17.

Southwest Front Entry – still incomplete. Was scheduled to complete in November 16.
Arches – notified to start 1/13/17. Scaffold still not complete and no masonry started. Needs to be complete by 1/27/17.
L3 Low Grout Break – identified on 11/28. ONSM denied responsibility, SM&E performed core test and ONSM maintains not a grout issue. ONSM verbally proposed fix on 1/18, BBC RFId and gave direction to ONSM on 1/19. Activity still not started, causing delay.
All low breaks – direction provided on 11/19, still no action by ONSM.
Window in 309 - still wrong and in delay. Identified in November.
Control Joints – identified in October and November, multiple wrong, will slow down stucco if fixed on scaffold.
Stair 3 – not complete, in delay
Stair 4 – not complete, in delay
Level 3 Windows – opening 4" too large. Not complete and fix not started, in delay.
Level 5 – not complete, in delay. 12/13/16 schedule included precast activity completing on 1/16/17 and CMU finishing 1/23/17.
Level 6 – not complete, in delay. 12/13/16 schedule showed 1/11/17 completion.
Level 7 – not started, in delay. 12/13/16 schedule showed activity 1/12/17-1/25/17.
Level 8 – not started, not yet in delay. 12/13/16 schedule shows this activity starting 1/26/17.

See link for 1 23 17 Masonry Progress Photos
https://bbcus.egnyte.com/fl/hOTgdZIPnm

Thanks,

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

<image001.jpg><image002.jpg><image003.jpg>

<1259-ONSM Response to Notice of Delay and Demand for Cure dated 1.23.2017.pdf>

Message

From: Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]
Sent: 2/14/2017 6:56:51 AM
To: Leonce Vidal [lvidal@pasco-inc.com]
CC: Dale, Marty [mdale@balfourbeattyus.com]
Subject: Manpower and Scope Add - HMS

Importance: High

Leonce,

Pasco is falling being schedule and we need a few things addressed. The intent was to hang drywall ceilings on L1 yesterday, but we still do not have fire protection finals. What is going on here?

We also reached out to Jack about providing the flange at the basement fire line. He said you guys could do this, can you take a look and provide a price to complete this work?

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

Message

From: Morgan, Troy [tmorgan@precisionwalls.com]
Sent: 3/2/2017 8:50:44 PM
To: Sandeen, Jeff [JSandeen@Balfourbeattyus.com]
Subject: Marion

Jeff

Gathered intel from our troops today and here is our position:

1. 9th floor we are behind schedule
2. Tidying up loose ends on 1st and 2nd. Some we own, majority we don't.
3. We have been stopped hanging some ceilings on 1st due to other trades
4. Hanging on 3rd full tilt but still leaving loose ends behind out of our control such as pocket doors.
6. Framed up to 7th for the most part except for areas out of our control.
7. 8th is laid out 100% and ready to frame but not yet on schedule. We are getting metal to jump this floor and frame it.

Our plan is to have 9, 1 and 2 complete with what is available by end of next week. Start framing on 8 next week. We will hang on 4 on up but leaving behind areas around windows because they are not in and pocket doors.

Your team is on us to close up shafts that are not on critical path. We will close those up as we go up. This is a loose end but unavoidable.

Next week we will up our manpower a bit and by the end of next week all the mechanics on 1,2 and 9 can concentrate on 3-8.

Electrician seems to be blaming us for holding him up but from what I gather that is not the case. When 8 is framed he will be exposed.

Anything you can do to let us hang ceilings on 1 and 2 would be appreciated.

Apologies for not calling you back today but we can talk tomorrow.

Have a good evening

Thanks Troy

Troy Morgan
Precision Walls Inc.
843-860-6647

Message

From: Cossette, Jeno [JCossette@Balfourbeattyus.com]
Sent: 3/4/2017 6:28:27 AM
To: Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]; Ledford, Ryan [RLedford@Balfourbeattyus.com]; Dale, Marty [mdale@balfourbeattyus.com]; Dooley, Alec [adooley@Balfourbeattyus.com]; Waterfield, Peter [PWaterfield@Balfourbeattyus.com]; Eldridge, Johnny [JEldridge@Balfourbeattyus.com]
Subject: RE: Stair #3 block/concrete alignment issues

Carla has been sending them to Ryan, I've asked to be copied as well but they have not so Ryan is forwarding to me, on these they are
noting any reason/excuse for not being able to set stone. I guess we need to respond to each report that they send to offset the incomplete or incorrect
Part of her report, will catch that up on Monday.

I have been reluctant to get in an e-mail war with ONS because I'm trying to take the approach with these guys of help them help us but obviously we are not getting the same in return, all they are doing at this point is making excuses (in addition to any legitimate reasons which we are addressing as they surface) as to why they can't install stone at a reasonable pace.

This past week is an example of why ONS is failing and averaging 3 to 4 pieces installed a day:

1. 2 to 3 people setting stone at the East side got the 2nd floor stone that sits on the angle done as much as scaffold allows but did not move forward to door surrounds on the SE end of East side which we need to install to complete 2nd floor cornice to the SE corner to raise scaffold to 6th floor here.
2. The South side stone began at the beginning of the week with (2) men setting and went to (1) man setting on Wednesday then he was gone Thursday and Friday. No attempt was made by ONS to correct (1) of the (3) door surrounds that is so badly out of plumb we cannot put wood blocking here, been asking them to do that for a week. Crane sitting idle while they have no manpower to set here. ONS waited a week to set the bearing block at the SW entry which would have given them that stone to set and made no attempt to install anchors to keep us going with hot mop to prep for base stone at the West elevation.
3. ONS brought in a truck load of stone last week that had pieces we could set in line with our sequence, that was a lot of stone and if manpower and prep had been applied this at the end of last week and this week we could have installed some of it and we would not have what we have now, stone unusable for the short term schedule and laying in the way. In addition to this ONS decided to ship an entire truck load of stone to send the (2) pieces of cornice stone needed to complete at the East elevation. This stone included some base stone West but a lot of the 2nd floor West 2nd level cornice stone that should not have been on-site yet, was not asked for and now is embassingly clogging up the site. In addition to this ONS has laid (2) pallets at the NW elevation which cuts off our access road around the West elevation. I have asked ONS to organize this stone to the order of erection but ONS has requested to store some of this stone at the 6th floor terrace, clogging up the terraces (because they have no good method to move this stone around once on the terrace) along with the South elevation and I've told them no way at this point as scizzor lift work is getting ready to begin up there at the West terrace.

I talked to Toby Thursday and just said that ONS has to want to set stone to make production but just like Tim says, any looking forward and pre-planning work is not happening by ONS even though I am sending them a heads up for the next day each day. Instead of doing what they need to do, add qualified manpower, preplan their work and be sensible and organized with their deliveries at this point they are not heading in any kind of positive direction, compounded by the stair 3 debacle.

I anticipate Monday for Toby to be on-site, the other (2) stone setters to be on-site and door surrounds started at the East side South end. At this point ONS just needs to keep Toby on-site along with manpower and start getting ahead on prep for stone, even if the cap flashing was installed last week by Baker, ONS had no one on site to install.

Time to require this of ONS or we will just continue to lose time against our schedule,

Thanks guys, I'm as frustrated with this as you are,

Jeno Cossette | General Superintendent
office: 919-840-7936 |mobile: 919-291-1683 | email: jcossette@balfourbeattyus.com
Balfour Beatty Construction
www.balfourbeattyus.com

From: Starcevic, Nicholas
Sent: Friday, March 03, 2017 7:38 PM
To: Ledford, Ryan <RLedford@Balfourbeattyus.com>; Cossette, Jeno <JCossette@Balfourbeattyus.com>; Dale, Marty <mdale@balfourbeattyus.com>; Dooley, Alec <adooley@Balfourbeattyus.com>; Waterfield, Peter <PWaterfield@Balfourbeattyus.com>; Eldridge, Johnny <JEldridge@Balfourbeattyus.com>
Subject: Fwd: Stair #3 block/concrete alignment issues

Where are the daily reports he mentions?

Nick Starcevic | Balfour Beatty Construction
Cell: 704.361.3265

Begin forwarded message:

From: Toby Holloway <tholloway@oldnorthstatemasonry.com>
Date: March 3, 2017 at 5:00:07 PM EST
To: "Starcevic, Nicholas" <NStarcevic@Balfourbeattyus.com>
Cc: Chip Venable <cvenable@oldnorthstatemasonry.com>, "Cossette, Jeno" <JCossette@Balfourbeattyus.com>, "Spano, Tim" <timspano@Balfourbeattyus.com>, "Dooley, Alec" <adooley@Balfourbeattyus.com>, Joe Anastasi <Janastasi@oldnorthstatemasonry.com>
Subject: Re: Stair #3 block/concrete alignment issues

You obviously forgot the conversation we had on Wednesday as well as you are not looking at any of our daily reports as a relates to the precast setting I will formally respond to you on Monday I suggest you go through our daily reports before writing an email like this, as well we could be setting all of the parapet Stone had you had the flashing that you you committed to have two months ago while we are correcting the deficiencies in the concrete on the lower floor where your shelf has no consistency in elevation

Toby Holloway
Old North State Masonry
Vice President of operations
Mobile:704-622-0803

On Mar 3, 2017, at 3:39 PM, Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com> wrote:

Toby,

Per the below email and attached survey from Jeno, see attached notice to cure the masonry defects in stair 3 They walls out of plumb are to be demoed, rebuilt, and cleaned up by 3/17/17.

We also need to address the lack of manpower and efficiency in stone setting. I have attached daily and weekly summaries from Jeno. There were difficulties getting started, but 0 pieces set in consecutive days with the RT crane and <10 all week is a failure. ONSM has set 20 piece of precast in 15 days with the RT crane. ONSM has set 14 pieces of precast in 8 days with the deck crane. At this pace, we will literally still be setting stone in 2018. Our agreement was that ONSM would have a 4 man crew per hook (2 guys prepping and rigging, 2 guys setting) setting 8 piece per day. We counted 10 people working for ONSM onsite yesterday for both CMU and precast work.

We are back in the same position with ONSM when we sent the first two letters to cure. Your presence is needed on site for us to have any chance of success. Unfortunately, when you are not here the production and quality suffer. If there are ways we are holding you up that are not addressed in Jeno's attached pre-cast summary, please advise.

Thanks,

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com<mailto:NStarcevic@Balfourbeattyus.com>
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com<http://www.balfourbeattyus.com/> | Facebook <http://www.facebook.com/BalfourBeattyUS> | Twitter <https://twitter.com/balfourbeattyus> | YouTube <http://www.youtube.com/balfourbeattyus> | LinkedIn <https://www.linkedin.com/company/balfour-beatty-construction>
[Balfour Beatty Construction][Build to Last: Lean. Expert. Trusted. Safe]

From: Cossette, Jeno
Sent: Friday, March 03, 2017 9:19 AM
To: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>
Subject: Fwd: Stair #3 block/concrete alignment issues

Sent from my iPhone

Begin forwarded message:
From: "Cossette, Jeno" <JCossette@Balfourbeattyus.com<mailto:JCossette@Balfourbeattyus.com>>
To: "'Toby Holloway'" <tholloway@oldnorthstatemasonry.com<mailto:tholloway@oldnorthstatemasonry.com>>
Cc: "Spano, Tim" <timspano@Balfourbeattyus.com<mailto:timspano@Balfourbeattyus.com>>, "Ledford, Ryan" <RLedford@Balfourbeattyus.com<mailto:RLedford@Balfourbeattyus.com>>, "'cdharwell@gmail.com<mailto:cdharwell@gmail.com>'" <cdharwell@gmail.com<mailto:cdharwell@gmail.com>>
Subject: Stair #3 block/concrete alignment issues

Toby,

As discussed yesterday we surveyed stair #3 today for out of plumb block and concrete. The survey is attached, note that the dimensions shown are estimated. We would ask that

ONS provide a lift and operator and we can put a tape measure to each level to confirm but it is quite obvious that the block face is not workable with the finish surface which is stucco (5/8" thick).

We can verify tomorrow but the remedy appears to be that this stair will have to be taken down from level 2 to 5 to match the block faces adjacent to it.

If you have any questions please do not hesitate to call,

Jeno Cossette | General Superintendent

office: 919-840-7936 |mobile: 919-291-1683 | email: jcossette@balfourbeattyus.com<mailto:tjohnson@balfourbeattyus.com>

Balfour Beatty Construction

www.balfourbeattyus.com<http://www.balfourbeattyus.com/>

<Stair 3 CMU Survey (3-2-17).pdf>

<Pre-cast summary to date Marion Square.eml>

<13026000-20-03 ONSM Notice of Delay and Demand for Cure.pdf>

Message

From: Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]
Sent: 3/6/2017 3:17:28 PM
To: Leonce Vidal [lvidal@pasco-inc.com]; Todd Jeffers [TJeffers@pasco-inc.com]
CC: Eldridge, Johnny [JEldridge@Balfourbeattyus.com]; Spano, Tim [timspano@Balfourbeattyus.com]; Dooley, Alec [adooley@Balfourbeattyus.com]; Cossette, Jeno [JCossette@Balfourbeattyus.com]; Dale, Marty [mdale@balfourbeattyus.com]
Subject: RE: Manpower and Scope Add - HMS

Please review with Todd tomorrow and confirm you'll hit the scheduled inspection date by COB tomorrow. Waiting until the end of the week will be too late to address the issue.

Thanks,

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Leonce Vidal [mailto:lvidal@pasco-inc.com]
Sent: Monday, March 06, 2017 4:18 PM
To: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Todd Jeffers <TJeffers@pasco-inc.com>
Cc: Eldridge, Johnny <JEldridge@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Dooley, Alec <adooley@Balfourbeattyus.com>; Cossette, Jeno <JCossette@Balfourbeattyus.com>; Dale, Marty <mdale@balfourbeattyus.com>
Subject: RE: Manpower and Scope Add - HMS

Nicholas
This should be achievable with the men we have out there. Todd and I will reevaluate at the end of this week and if more crews are needed we will send them out there.

From: Starcevic, Nicholas [mailto:NStarcevic@Balfourbeattyus.com]
Sent: Monday, March 06, 2017 2:00 PM
To: Leonce Vidal <lvidal@pasco-inc.com>
Cc: Eldridge, Johnny <JEldridge@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Dooley, Alec <adooley@Balfourbeattyus.com>; Cossette, Jeno <JCossette@Balfourbeattyus.com>; Dale, Marty <mdale@balfourbeattyus.com>
Subject: RE: Manpower and Scope Add - HMS
Importance: High

Leonce,

We're back in the same position of being behind on L4 and up the building. We need to man up and get through L7 by 3/20. In my opinion, you need 3 crews out here working on all 3 floors to hit these dates. Please respond with your plan to get caught back up and finished OH rough in by 3/20 thru L7.

L5 OH Rough In Act ID 8814 – 2/28 to 3/8
L6 OH Rough In Act ID 9264 - 2/27 – 3/20
L7 OH Rough In Act ID 9714 – 2/22 - 3/15

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Leonce Vidal [mailto:lvidal@pasco-inc.com]
Sent: Tuesday, February 14, 2017 9:29 AM
To: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>
Subject: Re: Manpower and Scope Add - HMS

Level one is getting air and water starting Friday last week. Yesterday the had caught all air leaks and was putting water on. Once confirmed there is no leaks a final will be called in. We will have to make adjustments in the oval shaped room now that lights are being installed.
L6 is about to be started. We have had an illness running through our crews the last two weeks. We will meet schedule with finishing L6.

Sent from my iPad

On Feb 14, 2017, at 9:21 AM, Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com> wrote:

Also, L6 was scheduled to start yesterday, please confirm you have adequate manpower to meet these dates.

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Starcevic, Nicholas
Sent: Tuesday, February 14, 2017 7:57 AM
To: 'Leonce Vidal' <lvidal@pasco-inc.com>
Cc: Marty Dale (mdale@balfourbeattyus.com) <mdale@balfourbeattyus.com>
Subject: Manpower and Scope Add - HMS
Importance: High

Leonce,

Pasco is falling being schedule and we need a few things addressed. The intent was to hang drywall ceilings on L1 yesterday, but we still do not have fire protection finals. What is going on here?

We also reached out to Jack about providing the flange at the basement fire line. He said you guys could do this, can you take a look and provide a price to complete this work?

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit http://www.mimecast.com

This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit http://www.mimecast.com

To: Dooley, Alec[adooley@Balfourbeattyus.com]; Dale, Marty[mdale@balfourbeattyus.com]; Eldridge, Johnny[JEldridge@Balfourbeattyus.com]; Cossette, Jeno[JCossette@Balfourbeattyus.com]
From: Starcevic, Nicholas[/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=65F22BA2C54F4D0F843FDB8B842E3115-NICHOLAS ST]
Sent: Tue 3/7/2017 10:31:29 PM (UTC)
Subject: Fwd: Marion - Manpower needed

Nick Starcevic | Balfour Beatty Construction
Cell: 704.361.3265

Begin forwarded message:

From: "Zinna, Michael" <MZinna@precisionwalls.com>
Date: March 7, 2017 at 5:25:39 PM EST
To: "Spano, Tim" <timspano@Balfourbeattyus.com>, "Williams, Troy" <TWilliams@precisionwalls.com>
Cc: "Starcevic, Nicholas" <NStarcevic@Balfourbeattyus.com>, "Vega, Navor" <NVega@precisionwalls.com>
Subject: RE: Marion - Manpower needed

Tim

Your assessment of available work is correct which is in line with the concerns of our schedule activities being stacked and accelerated which we brought up in previous correspondence. Please keep the following in mind as we do our best to build this project with quality and minimal loose ends:

- While we are actively working on framing out the missing shaftwalls at the vertical chases it is a much more labor intensive for our scope of work that the duct insulator. It is unrealistic to expect us to keep pace with the insulator on this activity. In speaking with Troy we do have two men working on these however he moved them off this task for today only to take care of another pressing issue regarding the 5th floor electrical rough-in. We will continue utilizing our two man crew for this work starting back tomorrow and progress them up from level 4 to levels 5 & 6 as they complete a floor.
- The loose ends of level 5 other than the duct chases will be complete today and this same crew will move up to 6 after the build the 2 missing walls on level 4 and work on any framing loose ends not related to the duct chases.
- Level 7 has missing layout due to various reasons. We will be actively working on completing the layout today and tomorrow. We also noted many locations where cleanup of other trades materials and trash is in the way of completing our work. Please make sure this is taken care of and we will schedule framers to start on level 7 once the layout is complete and our work areas are clean.
- Level 8 framing is not yet scheduled and as you mention below not 100% available. The rest of our material for this floor will be delivered tomorrow and we will start per the schedule update.
- Level 3 insulation failed due to all of the voids in the exterior rigid insulation. The vast majority of these issues are related to rigid insulation we installed either being cut out for electrical or removed from the wall by others. We found one instance of a piece of rigid that we cut short during installation and will go through each room and make sure any other issue regarding this is addressed by 11:30am tomorrow. In the mean time we will continue insulating all available walls.
- Level 2 has a vast list of loose ends and unanswered issues that were not created by Precision Walls. While we do not disagree there is work available on this floor we do not believe adding man power is justified due to the below list of issues:
    - Missing and unpunched steel members delaying operable wall track installation which is required to complete soffit framing. Precision Walls had installers onsite for the operable wall tracks but had to leave due to the incomplete and unpunched steel. We need a date on when we can return to complete that track after the steel is corrected.
    - Missing board room ceiling feature framing due to lack of information that was answered in an RFI. This material is now custom and has been ordered through radius track. I will provide a ship date

once I receive one.

- The design was changed for the gable end framing of the 3rd floor terraces causing a delay to this framing because new clips had to be ordered. These will be in next week and we will complete this framing. The delay to this work will delay the start to the barrel vault framing.
- There are numerous pipes that are out of the plane of fire walls on level 2 that PWI has brought to BBC's attention for months. We still do not have clear direction on how to proceed here. These are listed in the plan grid reports we send periodically.
- The 2nd floor overhead inspection failed again today and from what we walked with Marty there was no evidence of any issues related to Precision Walls causing this inspection to fail. The only issue pointed out to us was a hole In a finished wall above ceiling where temporary power was removed. The delays to the 2nd floor overhead are costly to Precision Walls as we have a boom lift in the front area which has been sitting idle waiting to hang/finish the high ceilings.

Precision Walls can work extended hours Monday through Saturday to catch up the areas where loose ends have been left behind but is requesting that our premium time be picked up by Balfour Beatty. It is our position that adding man power for these tasks is unnecessary and the increase in man power would not be able to be sustained once the framing is caught up. By working longer hours with the crew we have we can accomplish the same results you are looking for without adding men and avoiding spikes in man power. Please confirm if Balfour Beatty is willing to pay for the premium time to work our crews extended hours and we will get that plan in place to catch up the activities that have been stacked or accelerated.

Thanks

Michael Zinna
Project Manager
PRECISION WALLS, INC.
Partners in driving your job.
mzinna@precisionwalls.com
P: (843) 793-6020
M: (843) 991-0528
7317 Peppermill Pkwy
N. Charleston, SC 29418

"Our Passion is Building Strong Customer Relationships and Being the Partner that Helps Drive Your Job"

Confidentiality Notice: *This email is intended for the sole use of the intended recipient(s) and may contain confidential, proprietary or privileged information. If you are not the intended recipient, you are notified that any use, review, dissemination, copying or action taken based on this message or its attachments, if any, is prohibited. If you are not the intended recipient, please contact the sender by reply*

From: Spano, Tim [mailto:timspano@Balfourbeattyus.com]
Sent: Tuesday, March 07, 2017 2:33 PM
To: Zinna, Michael <MZinna@precisionwalls.com>; Williams, Troy <TWilliams@precisionwalls.com>
Cc: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>
Subject: Marion - Manpower needed

Michael, Per our walk today. Framing on floors 5 & 6 needs to have framing punched including shaft walls to be completed by Friday for MEP's starting Monday on floor 6. Floor seven is wide open and has been for a week and the 8th floor is ready for framing in all areas except the horse shoe that will be complete by close of business tomorrow giving P-walls the entire floor. There are some random RFI's and missing frames affecting some areas that BBC is expediting resolution on.

We also have allot of areas available on floor two for ceiling framing, ISO rod install, AC framing, Barrel ceiling etc.. BBC removed the tower crane a month ago so P-walls could get these areas and we are not taking advantage of it with a few guys working ceilings on 2. There is allot of open areas ready to run and we need P-wall to attack them with more men and stay ahead of all other trades. I am fully aware of areas that you are still held up for some decisions or door dimensions that BBC is working to resolve ASAP. I look forward to next Tuesdays walk to see all the

progress that was made the rest of this week but please send me a manpower report for floors 1,2,3,4,5,6,7,8 & 9 as soon as you get with Troy so that I can relay that information to the rest of the subs to plan their manpower accordingly. We need the Roof dried Monday as Conditioned air will be running next week for paint and millwork to start on the lower floors. We are behind schedule on floors 1-5 and have a chance to pull a few days back on the upper floors and streamline the process on floors 5-9. Thanks

Tim Spano | Sr. Project Manager **Carolina's**
office: 843.974.4590 | mobile: 813.917.1656 | email:timspano@balfourbeattyus.com
Balfour Beatty Construction | www.balfourbeattyus.com
306 Meeting St., Suite 300, Charleston, SC 29401
Connect with us: Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

Message

Sent: 3/7/2017 4:39:25 PM
To: Zinna, Michael [MZinna@precisionwalls.com]; Williams, Troy [TWilliams@precisionwalls.com]
CC: Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]; Vega, Navor [NVega@precisionwalls.com]
Subject: RE: Marion - Manpower needed

Tim Spano | Sr. Project Manager Carolina's
office: 843.974.4590 | mobile: 813.917.1656 | email: timspano@balfourbeattyus.com
Balfour Beatty Construction | www.balfourbeattyus.com
306 Meeting St., Suite 300, Charleston, SC 29401
Connect with us: Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Zinna, Michael [mailto:MZinna@precisionwalls.com]
Sent: Tuesday, March 07, 2017 5:26 PM
To: Spano, Tim <timspano@Balfourbeattyus.com>; Williams, Troy <TWilliams@precisionwalls.com>
Cc: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Vega, Navor <NVega@precisionwalls.com>
Subject: RE: Marion - Manpower needed

Tim

Your assessment of available work is correct which is in line with the concerns of our schedule activities being stacked and accelerated which we brought up in previous correspondence. Please keep the following in mind as we do our best to build this project with quality and minimal loose ends:

- While we are actively working on framing out the missing shaftwalls at the vertical chases it is a much more labor intensive for our scope of work that the duct insulator. It is unrealistic to expect us to keep pace with the insulator on this activity. I don't expect pace of the insulator In speaking with Troy we do have two men working on these however he moved them off this task for today only to take care of another pressing issue regarding the 5th floor electrical rough-in. We will continue utilizing our two man crew for this work starting back tomorrow and progress them up from level 4 to levels 5 & 6 as they complete a floor.
- The loose ends of level 5 other than the duct chases will be complete today and this same crew will move up to 6 after the build the 2 missing walls on level 4 and work on any framing loose ends not related to the duct chases. How many men on this crew?
- Level 7 has missing layout due to various reasons. We will be actively working on completing the layout today and tomorrow. We also noted many locations where cleanup of other trades materials and trash is in the way of completing our work. Please make sure this is taken care of and we will schedule framers to start on level 7 once the layout is complete and our work areas are clean. Our men cleaned today
- Level 8 framing is not yet scheduled and as you mention below not 100% available. The rest of our material for this floor will be delivered tomorrow and we will start per the schedule update. This is the unwillingness to pull a schedule back that has pushed before and my biggest concern.
- Level 3 insulation failed due to all of the voids in the exterior rigid insulation. The vast majority of these issues are related to rigid insulation we installed either being cut out for electrical or removed from the wall by others. We found one instance of a piece of rigid that we cut short during installation and will go through each room and make sure any other issue regarding this is addressed by 11:30am tomorrow. In the mean time we will continue insulating all available walls. P-walls was a part of the failure today and I appreciate the quick response.

- Level 2 has a vast list of loose ends and unanswered issues that were not created by Precision Walls. While we do not disagree there is work available on this floor we do not believe adding man power is justified due to the below list of issues: Totally disagree with Ballrooms & barrel ceiling.
  - Missing and unpunched steel members delaying operable wall track installation which is required to complete soffit framing. Precision Walls had installers onsite for the operable wall tracks but had to leave due to the incomplete and unpunched steel. We need a date on when we can return to complete that track after the steel is corrected.
  - Missing board room ceiling feature framing due to lack of information that was answered in an RFI. This material is now custom and has been ordered through radius track. I will provide a ship date once I receive one.
  - The design was changed for the gable end framing of the 3rd floor terraces causing a delay to this framing because new clips had to be ordered. These will be in next week and we will complete this framing. The delay to this work will delay the start to the barrel vault framing. This design change is 6 months old. BBC has been asking for the completion of that framing for Months
  - There are numerous pipes that are out of the plane of fire walls on level 2 that PWI has brought to BBC's attention for months. We still do not have clear direction on how to proceed here. These are listed in the plan grid reports we send periodically. BBC walked that area last week and today for Pwalls to box around on T&M. You said you want to bid it.
  - The 2nd floor overhead inspection failed again today and from what we walked with Marty there was no evidence of any issues related to Precision Walls causing this inspection to fail. The only issue pointed out to us was a hole In a finished wall above ceiling where temporary power was removed. The delays to the 2nd floor overhead are costly to Precision Walls as we have a boom lift in the front area which has been sitting idle waiting to hang/finish the high ceilings.

Precision Walls can work extended hours Monday through Saturday to catch up the areas where loose ends have been left behind but is requesting that our premium time be picked up by Balfour Beatty. It is our position that adding man power for these tasks is unnecessary and the increase in man power would not be able to be sustained once the framing is caught up. By working longer hours with the crew we have we can accomplish the same results you are looking for without adding men and avoiding spikes in man power. Please confirm if Balfour Beatty is willing to pay for the premium time to work our crews extended hours and we will get that plan in place to catch up the activities that have been stacked or accelerated. You are talking out of both sides of your mouth. Thanks

Michael Zinna
Project Manager
PRECISION WALLS, INC.
Partners in driving your job.
mzinna@precisionwalls.com
P: (843) 793-6020
M: (843) 991-0528
7317 Peppermill Pkwy
N. Charleston, SC 29418

"Our Passion is Building Strong Customer Relationships and Being the Partner that Helps Drive Your Job"

Confidentiality Notice: *This email is intended for the sole use of the intended recipient(s) and may contain confidential, proprietary or privileged information. If you are not the intended recipient, you are notified that any use, review, dissemination, copying or action taken based on this message or its attachments, if any, is prohibited. If you are not the intended recipient, please contact the sender by reply*

From: Spano, Tim [mailto:timspano@Balfourbeattyus.com]
Sent: Tuesday, March 07, 2017 2:33 PM
To: Zinna, Michael <MZinna@precisionwalls.com>; Williams, Troy <TWilliams@precisionwalls.com>
Cc: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>
Subject: Marion - Manpower needed

Michael, Per our walk today. Framing on floors 5 & 6 needs to have framing punched including shaft walls to be completed by Friday for MEP's starting Monday on floor 6. Floor seven is wide open and has been for a week and the 8th floor is ready for framing in all areas except the horse shoe that will be complete by close of business tomorrow giving P-walls the entire floor. There are some random RFI's and missing frames affecting some areas that BBC is expediting resolution on.

We also have allot of areas available on floor two for ceiling framing, ISO rod install, AC framing, Barrel ceiling etc.. BBC removed the tower crane a month ago so P-walls could get these areas and we are not taking advantage of it with a few guys working ceilings on 2. There is allot of open areas ready to run and we need P-wall to attack them with more men and stay ahead of all other trades. I am fully aware of areas that you are still held up for some decisions or door dimensions that BBC is working to resolve ASAP. I look forward to next Tuesdays walk to see all the progress that was made the rest of this week but please send me a manpower report for floors 1,2,3,4,5,6,7,8 & 9 as soon as you get with Troy so that I can relay that information to the rest of the subs to plan their manpower accordingly. We need the Roof dried Monday as Conditioned air will be running next week for paint and millwork to start on the lower floors. We are behind schedule on floors 1-5 and have a chance to pull a few days back on the upper floors and streamline the process on floors 5-9. Thanks

Tim Spano | Sr. Project Manager **Carolina's**
office: 843.974.4590 | mobile: 813.917.1656 | email: timspano@balfourbeattyus.com
Balfour Beatty Construction | www.balfourbeattyus.com
306 Meeting St., Suite 300, Charleston, SC 29401
Connect with us: Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

Message

From: Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]
Sent: 3/14/2017 8:00:03 AM
To: Leonce Vidal [lvidal@pasco-inc.com]; Todd Jeffers [TJeffers@pasco-inc.com]
CC: Eldridge, Johnny [JEldridge@Balfourbeattyus.com]; Spano, Tim [timspano@Balfourbeattyus.com]; Dooley, Alec [adooley@Balfourbeattyus.com]; Cossette, Jeno [JCossette@Balfourbeattyus.com]; Dale, Marty [mdale@balfourbeattyus.com]
Subject: RE: Manpower and Scope Add - HMS
Importance: High

Leonce,

L6 is a 2 weeks behind with no available manpower and we also need guys in the basement and L5. It was agreed with your superintendent that you need two additional crews onsite to get caught up and stay up to speed through your testing through 8. Consider this a notice to cure and get additional manpower onsite within 48 hours.

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Leonce Vidal [mailto:lvidal@pasco-inc.com]
Sent: Monday, March 06, 2017 4:18 PM
To: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Todd Jeffers <TJeffers@pasco-inc.com>
Cc: Eldridge, Johnny <JEldridge@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Dooley, Alec <adooley@Balfourbeattyus.com>; Cossette, Jeno <JCossette@Balfourbeattyus.com>; Dale, Marty <mdale@balfourbeattyus.com>
Subject: RE: Manpower and Scope Add - HMS

Nicholas
This should be achievable with the men we have out there. Todd and I will reevaluate at the end of this week and if more crews are needed we will send them out there.

From: Starcevic, Nicholas [mailto:NStarcevic@Balfourbeattyus.com]
Sent: Monday, March 06, 2017 2:00 PM
To: Leonce Vidal <lvidal@pasco-inc.com>
Cc: Eldridge, Johnny <JEldridge@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Dooley, Alec <adooley@Balfourbeattyus.com>; Cossette, Jeno <JCossette@Balfourbeattyus.com>; Dale, Marty <mdale@balfourbeattyus.com>
Subject: RE: Manpower and Scope Add - HMS
Importance: High

Leonce,

We're back in the same position of being behind on L4 and up the building. We need to man up and get through L7 by 3/20. In my opinion, you need 3 crews out here working on all 3 floors to hit these dates. Please respond with your plan to get caught back up and finished OH rough in by 3/20 thru L7.

L5 OH Rough In Act ID 8814 – 2/28 to 3/8
L6 OH Rough In Act ID 9264 - 2/27 – 3/20
L7 OH Rough In Act ID 9714 – 2/22 - 3/15

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Leonce Vidal [mailto:lvidal@pasco-inc.com]
Sent: Tuesday, February 14, 2017 9:29 AM
To: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>
Subject: Re: Manpower and Scope Add - HMS

Level one is getting air and water starting Friday last week. Yesterday the had caught all air leaks and was putting water on. Once confirmed there is no leaks a final will be called in. We will have to make adjustments in the oval shaped room now that lights are being installed.
L6 is about to be started. We have had an illness running through our crews the last two weeks. We will meet schedule with finishing L6.

Sent from my iPad

On Feb 14, 2017, at 9:21 AM, Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com> wrote:

Also, L6 was scheduled to start yesterday, please confirm you have adequate manpower to meet these dates.

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Starcevic, Nicholas
Sent: Tuesday, February 14, 2017 7:57 AM
To: 'Leonce Vidal' <lvidal@pasco-inc.com>
Cc: Marty Dale (mdale@balfourbeattyus.com) <mdale@balfourbeattyus.com>
Subject: Manpower and Scope Add - HMS
Importance: High

Leonce,

Pasco is falling being schedule and we need a few things addressed. The intent was to hang drywall ceilings on L1 yesterday, but we still do not have fire protection finals. What is going on here?

We also reached out to Jack about providing the flange at the basement fire line. He said you guys could do this, can you take a look and provide a price to complete this work?

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit http://www.mimecast.com

This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit http://www.mimecast.com

Message

From: Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]
Sent: 3/15/2017 9:19:01 AM
To: Leonce Vidal [lvidal@pasco-inc.com]
CC: Spano, Tim [timspano@Balfourbeattyus.com]; Dooley, Alec [adooley@Balfourbeattyus.com]; Sandeen, Jeff [JSandeen@Balfourbeattyus.com]; Dale, Marty [mdale@balfourbeattyus.com]; Cossette, Jeno [JCossette@Balfourbeattyus.com]; Sandeen, Jeff [JSandeen@Balfourbeattyus.com]; dsmith@pasco-inc.com
Subject: 13026000-004-02 PASCO Demand for Cure
Attachments: CONSTRUCTION LOGISTICS PLAN 3.14.17.pdf; 13026000-004-02 PASCO Demand for Cure.pdf

Leonce,

See attached Notice of Demand for Cure for the Hotel at Marion Square. Per yesterday's meeting onsite, there are a handful of issues that need to be addressed, see below.

1. Clean Up –
a. Clean all working spaces daily. All areas you are currently working need to be broom swept and trash disposed of daily. No exceptions.
b. Neatly organize, stacked, and locate material as indicated on the attached logistics plan. This is mandatory and must be strictly adhered to.
c. Remove all excess material from the site by COB 3/17/17.
d. Only bring material that will be used in the next two weeks to the project, all other material will be rejected.
2. Schedule –
a. It is evident that PASCO needs additional manpower onsite. Please provide a manpower count and recovery schedule to show your plan to get back on schedule.
i. Include all rough in, testing and inspection dates through L9.
3. Material Delivery
a. All material deliveries are to be coordinated with Jeno Cossette or Marty Dale.
b. Any rigging, equipment, etc needed for the deliveries is to be provided by PASCO. BBC does not provide rigging, equipment, or labor to assist with material deliveries.

Do not hesitate to contact me if you have any questions or concerns.

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

Message

From: Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]
Sent: 3/15/2017 11:48:07 AM
To: Chip Venable [cvenable@oldnorthstatemasonry.com]
CC: Joe Anastasi [Janastasi@oldnorthstatemasonry.com]; Toby Holloway [tholloway@oldnorthstatemasonry.com]; Cossette, Jeno [JCossette@Balfourbeattyus.com]; Spano, Tim [timspano@Balfourbeattyus.com]; Sandeen, Jeff [JSandeen@Balfourbeattyus.com]; Goodwin, Shelly [sgoodwin@balfourbeattyus.com]; Dale, Marty [mdale@balfourbeattyus.com]; Dooley, Alec [adooley@Balfourbeattyus.com]
Subject: 13026000-20-04 ONSM Demand for Cure
Attachments: 13026000-20-04 ONSM Demand for Cure.pdf; CONSTRUCTION LOGISTICS PLAN 3.14.17.pdf

Chip,

See attached Notice of Demand for Cure for the Hotel at Marion Square. Per yesterday and multiple coordination meetings onsite, these issues remain deficient and need to be addressed, see below.

1. Clean Up –

a. Overall cleanup, material storage, staging, etc, needs to be improved immediately. For clarity, Old North State Masonry is to clean all working spaces, remove mortar, remove grout, broom sweep, and dispose of trash **daily.** No exceptions.

b. Neatly organize, stack, and locate material as indicated on the attached logistics plan. This is mandatory and must be strictly adhered to.

c. Remove all excess material from the site by COB 3/17/17.

d. Only bring material that will be used in the next two weeks to the project, all other material will be rejected.

2. Schedule –

a. The exterior skin continues to slip. It is evident that we are not achieving the agreed to rate of installation due to a multitude of issues (BBC acknowledges not all issues are 100% ONSM). BBC has gone above and beyond to coordinate with ONSM on the precast setting and provide the hooks necessary for installation. If precast needs to be cut, modified, repaired, etc it needs to be done in a manner that does not delay the installation. It is clear that the necessary manpower is not onsite as Toby Holloway promised an expert crew onsite 3/13/17 to speed up installation and that crew is not onsite as of 3/15/17.

b. Due to lack of production, ONSM is directed to work on L9 Parapet, Southeast Door Surrounds, and L2 Cornice. Provide completion dates for these activities so we can plan accordingly.

1. Southeast Door Surrounds
2. L2 Band
3. L9 Parapet Cap
4. L8 Band

c. All open SME discrepancies

d. L6 grout fix – confirm 3/22/17 completion

e. L3 stair completion

f. L3 stair repair (see 13026000-20-03 Demand for Cure)

g. Control Lines fixed (scaffold will not be used). All float in schedule has been removed due to delays by ONSM so provide hoisting to fix deficient control lines.

h. Repair any damage caused to other trades

i. Mock Up completion

j. See BBC daily masonry reports at the following link. BBC Masonry Daily Report https://bbcus.egnyte.com/fl/xaqYqgPp2G

3. Material Delivery

a. All material deliveries are to be coordinated with Jeno Cossette or Marty Dale.

b. Provide a forklift to move material.

c. Any rigging, equipment, etc needed for the deliveries is to be provided by ONSM. BBC does not provide rigging, equipment, or labor to assist with material deliveries.

4. Quality Control

a. Provide a written quality control plan for review. BBC remains concerned about the lack of protection on the precast and ONSM's ability to repair.
b. BBC has witnessed chips in precast that need repaired or replaced.
c. BBC has witnessed discolored precast that needs to be cleaned or replaced
d. Walls out of tolerance need to be addressed.

Do not hesitate to contact me should you have any question or concerns

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

Message

From: Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]
Sent: 3/15/2017 10:02:44 AM
To: Winovich, Dale (DWinovich@watsonelec.com) [DWinovich@watsonelec.com]
CC: Lewis, Everette [ELewis@watsonelec.com]; Brittelli, William [WBrittelli@watsonelec.com]; Spano, Tim [timspano@Balfourbeattyus.com]; Sandeen, Jeff [JSandeen@Balfourbeattyus.com]; Dooley, Alec [adooley@Balfourbeattyus.com]; Dale, Marty [mdale@balfourbeattyus.com]; Cossette, Jeno [JCossette@Balfourbeattyus.com]; Farmer, David (DFarmer@watsonelec.com) [DFarmer@watsonelec.com]
Subject: 13026000-003-01 Watson Demand for Cure
Attachments: 13026000-003-01 Watson Demand for Cure.pdf; CONSTRUCTION LOGISTICS PLAN 3.14.17.pdf

Dale,

See attached Notice of Demand for Cure for the Hotel at Marion Square. Per yesterday's meeting onsite, there are a handful of issues that need to be addressed, see below.

1. Clean Up –
a. Clean all working spaces daily. All areas you are currently working need to be broom swept and trash disposed of daily. No exceptions.
b. Neatly organize, stack, and locate material as indicated on the attached logistics plan. This is mandatory and must be strictly adhered to.
c. Remove all excess material from the site by COB 3/17/17.
d. Only bring material that will be used in the next two weeks to the project, all other material will be rejected.
2. Schedule –
a. Per our meeting last week, Watson was to complete L5 guestrooms by 3/10/17 and start L6 guestrooms on 3/13/17. Neither of these dates were accomplished. We also failed multiple overhead inspection on L2 and L3 partly due to Watson deficiencies. Provide a manpower count and recovery schedule to show your plan to get back on schedule.
i. Include all rough in, testing and inspection dates through L9.
ii. Completion of all loose ends, fire caulking, punch on L1-L5.
iii. Repair any damage caused to other trades (i.e. holes in walls, removed insulation, etc).
3. Material Delivery
a. All material deliveries are to be coordinated with Jeno Cossette or Marty Dale.
b. Any rigging, equipment, etc needed for the deliveries is to be provided by Watson. BBC does not provide rigging, equipment, or labor to assist with material deliveries.

Do not hesitate to contact me should you have any question or concerns,

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

Message

From: Scott Shiner [sshiner@bernhardmcc.com]
Sent: 4/7/2017 12:47:35 PM
To: Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]; Eric Stoehr [estoehr@bernhardmcc.com]
CC: Scott Delbridge [sdelbridge@bernhardmcc.com]; Spano, Tim [timspano@Balfourbeattyus.com]; Dale, Marty [mdale@balfourbeattyus.com]; Eldridge, Johnny [JEldridge@Balfourbeattyus.com]; Michael Schneida [mschneida@bernhardmcc.com]; Stanton, David [DStanton@Balfourbeattyus.com]; Dooley, Alec [adooley@Balfourbeattyus.com]
Subject: RE: HMS - L5 Completion - Cure Notice

Mr. Starcevic , Thank you for taking the time to discuss the Marion Square project and I look forward to meeting you Monday. BMCC is committed to bring the schedule back to where it needs to be and moving forward we are complying a schedule in house to meet or either bet the Construction Schedule issued with the run date of 3/6/17. We were able to have the insulation Sub Contractor man up and work this weekend in an effort to possibly beat the Wednesday inspection for 5th floor. I'm also having our General Superintendent ,Rusty Williams onsite for the next several weeks to assist the project TEAM and provide additional supervision along with adding six Plumbers Monday. I myself will be on site next week for however long it takes to assure BBC moving forward you have our full attention. As requested during our conversation I would like until the end of the day Monday 4/10/17 to provide you with our detailed recovery plan. This will allow me along with the project Team to regroup and compile completion dates for the remaining activities on levels 6,7, and 8th floor.

Scott Shiner
Operations Manager

Bernhard MCC
Mechanical

9233 Forsyth Park Drive
Charlotte, NC 28273

(704) 817-1800 tel
(704) 587-0774 fax
(704) 817-1828 direct
(865) 323-0050 mobile
www.bernhard.com

From: Starcevic, Nicholas [mailto:NStarcevic@Balfourbeattyus.com]
Sent: Wednesday, April 05, 2017 3:11 PM
To: Eric Stoehr
Cc: Scott Delbridge; Spano, Tim; Dale, Marty; Eldridge, Johnny; Michael Schneida; Scott Shiner; Stanton, David; Dooley, Alec
Subject: HMS - L5 Completion - Cure Notice

Eric,

It was brought to our attention that BMCC will not be ready for the framing inspection on L5 until next Wednesday, April 12. This is a 15+ day delay to the framing inspection on L5 and must be cured immediately. We need a plan from BMCC by COB Friday, April 7 for completion of L5 and how you intend to make up the lost time on L6, L7, and L8. Call me with questions.

Thanks,

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

Disclaimer

The information contained in this communication from the sender is confidential. It is intended solely for use by the recipient and others authorized to receive it. If you are not the recipient, you are hereby notified that any disclosure, copying, distribution or taking action in relation of the contents of this information is strictly prohibited and may be unlawful.

This email has been scanned for viruses and malware, and may have been automatically archived by **Mimecast Ltd**, an innovator in Software as a Service (SaaS) for business. Providing a **safer** and **more useful** place for your human generated data. Specializing in; Security, archiving and compliance. To find out more Click Here.

Message

From: Stoneking, Tony [tstoneking@balfourbeattyus.com]
Sent: 5/1/2017 6:03:16 AM
To: Sandeen, Jeff [JSandeen@Balfourbeattyus.com]
Subject: RE: Marion Square Contacts

Added #10 sorry

Tony Stoneking
Balfour Beatty Construction, LLC
phone: 919-795-4954
email: tstoneking@balfourbeattyus.com
mailing address: 406 South McDowell St.; Suite 200, Raleigh, NC 27601

From: Stoneking, Tony
Sent: Monday, May 01, 2017 6:50 AM
To: Sandeen, Jeff <JSandeen@Balfourbeattyus.com>
Subject: RE: Marion Square Contacts

Jeff – see below my notes from Friday and fix anything you see and send out to group.....I added Bakers list below

Notes from Friday

1. Jeff/Pat/Shelly/Tony to contact higher executives of subcontractors to make sure project has support and to use as a resource when David feels his leadership meeting needs support
2. David's excutive meeting needs to increase manpower for Precision and Watson
3. Jeff to confirm Mike Janson is coming on May 15
4. David to make recommended staffing revisions with Jeff

a. Tim Spano = skin and hardscape
i. Add an hourly person / PE / intern for support to Tim

b. Ryan Ledford = move him to 9th floor under Mike Janson
c. Mike Janson to manage floors 3-9
i. Johnny and Pete to fall under Mike now
ii. Will support all floors with Marty is out for surgery

d. Marty Dale
i. Having both knee surgeries this year
ii. Move Alec Dooley to field under Marty to shore that up with all details

e. Add new PE or interns to help Nick in office with paperwork/closeout so Alec can go to field

5. Leave material hoist up to help move men and materials under July 4th when skin scaffold comes around
6. Joe L is making colored floor plan for turnover dates to match schedule, and adhere too
7. Joe L and David need to look at schedule for tile to make sure manpower is okay and we are giving them areas. Joe L is updating sub sort for David Allen
8. Joe L needs to fly up to NY to get Hope Glass here.....get with Tim on frequency. We need job team to stay on project site.
9. Do we need hourly folks to do room punch / need to develop a plan to punch rooms.
10. We need to start doing following on pending changes:

a. If owner wants or thinking a change, we need to send out immediately a "best guess impact notice" cost/delay to job with Joe L....don't wait until we price formal change.

Tony Stoneking
Balfour Beatty Construction, LLC
phone: 919-795-4954
email: tstoneking@balfourbeattyus.com

mailing address: 406 South McDowell St.; Suite 200, Raleigh, NC 27601

From: Sandeen, Jeff
Sent: Friday, April 28, 2017 2:47 PM
To: Goodwin, Shelly <sgoodwin@balfourbeattyus.com>; Stoneking, Tony <tstoneking@balfourbeattyus.com>; Dean, Pat <pdean@balfourbeattyus.com>; Stanton, David <DStanton@Balfourbeattyus.com>
Subject: Marion Square Contacts

Subcontractor	Executive/Owner	Local Contact	BBC
Watson	Billy Brittelli	Billy Brittelli	Shelly/Tony
MCC	Mike Cooper	Scott Delbridge	David
David Allen	Martin Howard	Clovise Locure	Shelly/Tony
Baker	Prentiss Baker	Matt	Shelly/Tony
ONSM	Scott Griffen	Toby	Jeff
Precision Wall	Brian Allen	Troy Morgan	Shelly/Tony
Otis	Jim Atkins	Ben Synder	Jeff

Jeffrey Sandeen | Vice President / Business Unit Leader, Carolinas
office: 704.319.4029 |mobile: 704.534.8522 | email: JSandeen@balfourbeattyus.com
Balfour Beatty Construction | 1930 Camden Road, Suite 280, Charlotte, NC 28203|www.balfourbeattyus.com
Connect with us: Facebook | Twitter | YouTube| Linkedin

Message

From: Ledford, Ryan [RLedford@Balfourbeattyus.com]
Sent: 9/19/2017 3:31:44 PM
To: Eldridge, Johnny [JEldridge@Balfourbeattyus.com]
CC: Pieniak, Shanti [SPieniak@Balfourbeattyus.com]
Subject: FW: MHS Walk Through Feedback
Attachments: Watson_Open_Issues_List_(9-19-17).pdf

FYI

Ryan Ledford | Sr. Project Engineer
mobile: (828)545-7759| email: rledford@balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401
ZERO HARM Make Safety Personal

Balfour Beatty Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Ledford, Ryan
Sent: Tuesday, September 19, 2017 4:25 PM
To: Stanton, David <DStanton@Balfourbeattyus.com>
Cc: Spano, Tim <timspano@Balfourbeattyus.com>; Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>
Subject: RE: MHS Walk Through Feedback

David,

See attached BIM360 list for Watson's open items. There are probably a few items on the lower floors that can be marked as complete, but I know 6th and 7th floor are up to date as of 3pm today. While Kevin does attempt to stay on top of the issues, it is obvious that Watson, and other trades are overwhelmed by the amount of work to complete they simply don't have enough manpower to handle the activities at hand.

As you know, It's a red herring to state that design issues are holding up work. The design issues are probably less than 10% of the list. The bulk of the list contains issues like fire caulking, moving outlets or lights that were not installed per the dimensions on the contract drawings, missing (or covered up) devices. there are over 66 issues (that we have caught so far) just on level 7, just to allow us to get an overhead inspection.

It is due to poor QC that we are in the position now where multiple trades must be involved to fix these issues and disrupt the flow of work. BBC has tried to help by going above and beyond, logging literally thousands of issues into BIM360 trying to spoon feed these guys and help push the job. Johnny and I have been on 6th and 7th floor constantly trying to help work these items off the list, but it's clear more qualified help is needed by Watson.

Please let me know if you need anything else.

Thanks,
Ryan Ledford | Sr. Project Engineer
mobile: (828)545-7759| email: rledford@balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401
ZERO HARM Make Safety Personal

Balfour Beatty

Build to Last
Lean. Expert. Trusted. Safe

From: Stanton, David
Sent: Tuesday, September 19, 2017 3:44 PM
To: Ledford, Ryan <RLedford@Balfourbeattyus.com>
Cc: Spano, Tim <timspano@Balfourbeattyus.com>; Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>
Subject: FW: MHS Walk Through Feedback

Ryan – can you send me all open items that Watson has on BIM 360.

David Stanton CHC,
office: 704.295-4746 | cell: 704.506-0977 | fax: 704.319.4001 | email:dstanton@balfourbeattyus.com
Balfour Beatty Construction | 1930 Camden Road, Suite 280, Charlotte, NC 28203
Connect with us: Facebook | Twitter | YouTube | LinkedIn
ZERO HARM Make Safe It, Forever.

From: Winovich, Dale [mailto:DWinovich@watsonelec.com]
Sent: Tuesday, September 19, 2017 3:28 PM
To: Stanton, David <DStanton@Balfourbeattyus.com>
Cc: Brittelli, William <WBrittelli@watsonelec.com>; Farmer, David <DFarmer@watsonelec.com>; Sloan, Kevin <KSloan@watsonelec.com>; Lewis, Everette <ELewis@watsonelec.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>
Subject: MHS Walk Through Feedback

David,
Per my walk through this morning it is clear that the project is still struggling to establish a work flow and sequence. We continue to be re-tasked to multiple different areas when changes, design detail clarifications, or predecessor work is completed or clarified.

As far as the Level 6, we have had our overhead and in wall inspection since the beginning of September. I'm not sure how the feedback is that we continue to fail inspections. That is inaccurate. We received an RFI on 09-16-17 to demo downlights in the manager's apartment which as of today is still being framed. We also received and priced SI 54 which will rework electrical in the kitchen of the manager's apartment. These are just typical and common examples of the work disruptions we are encountering every week, and are expected to accommodate with unplanned manpower.

Level 9 in wall is complete and as discussed and planned we are working on finishing overhead light fixtures and mechanical equipment.

In walking L9-L6 there is still incomplete or missing framing, as well as continual changes. There is FCU rework on going, soffit and miscellaneous wall framing/rework on going.

David, we can continue to go in circles as to who caused what issue but to say that we are lacking manpower and are responsible for incorrect work is over generalized. We continually reworking due to incorrect framing, design clarification and changes. After today's walk I have about a dozen pictures of work the was installed that is now hanging or removed with no notice. I also respectfully disagree with the notion that the schedule has activities over due by 30 days as change orders and rolling design issues are not effectively accounted for in the schedule.

If you would like to walk the jobsite Thursday after our executive meeting we can do so. I do agree that there are loose ends everywhere but I think we are ignoring the reasons why, and IF we can even complete the work with the information we have. And when I reference work flow and sequence it's not an accusation against BBC but reinforcement that the owner and design team have left loose ends of their own and disrupted ours, and BBC's work. Just let me know if you'll be in town Thursday to walk.

Respectfully,

Dale J Winovich, *LEED AP BD & C*
Project Manager
dwinovich@watsonelec.com
843-414-0700 Office
843-371-2265-Cell
Watson Electrical Construction Company



This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit http://www.mimecast.com

If you would like to walk the jobsite Thursday after our executive meeting we can do so. I do agree that there are loose ends everywhere but I think we are ignoring the reasons why, and IF we can even complete the work with the information we have. And when I reference work flow and sequence it's not an accusation against BBC but reinforcement that the owner and design team have left loose ends of their own and disrupted ours, and BBC's work. Just let me know if you'll be in town Thursday to walk.

Respectfully,

Dale J Winovich, *LEED AP BD & C*
Project Manager
dwinovich@watsonelec.com
843-414-0700 Office
843-371-2265-Cell
Watson Electrical Construction Company



This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit http://www.mimecast.com

Message

From: Morgan, Troy [tmorgan@precisionwalls.com]
Sent: 10/5/2017 8:38:04 AM
To: Stanton, David [DStanton@Balfourbeattyus.com]
CC: Zinna, Michael [MZinna@precisionwalls.com]; Spano, Tim [timspano@Balfourbeattyus.com]; Vega, Navor [NVega@precisionwalls.com]
Subject: Re: Grae Framers

28

Framers are in stairs need a few answers before we can complete

Hangers are on 6. Will be done with ceilings today

Finishers are coming behind them

Two on BIM 360 on 7th tidying up for tile guys

Hangers on roof one siding

Insulating on 2 and will move to roof tomorrow

8th floor is insulated

Framers on eight finishing up loose ends at ceiling framing 95% complete

One guy fixing vanity issue

Thanks Troy

Troy Morgan
Precision Walls Inc.
843-860-6647

On Oct 5, 2017, at 9:13 AM, Stanton, David <DStanton@Balfourbeattyus.com> wrote:

Can you give us a breakdown of your total manpower on site and show the areas that they will be working.

David Stanton, VP/Operations
O: (704) 295-4746 | C: (704) 506-0977 | www.balfourbeattyus.com
1930 Camden Road, Suite 280, Charlotte, NC 28203

Facebook | Twitter | LinkedIn



Confidentiality Notice: The contents of this e-mail are confidential and are intended only for the use of the recipient(s) unless otherwise indicated. If you have received this e-mail in error, please notify the sender(s) immediately by telephone. Please destroy and delete the message from your computer. Any form of reproduction, dissemination, copying, disclosure, modification, distribution and/or publication of this e-mail is strictly prohibited unless expressly authorized by the sender(s). No person without written confirmation of the contents of this e-mail, should rely on it. While this e-mail and the information it contains are supplied in good faith, no member of the Balfour Beatty plc group of companies shall be under any liability in respect of the contents of this e-mail or for any reliance the recipient may place on it. This e-mail is sent for information purposes only and shall not have the effect of creating a contract between the parties.

From: Zinna, Michael [mailto:MZinna@precisionwalls.com]
Sent: Thursday, October 05, 2017 9:11 AM
To: Spano, Tim <timspano@Balfourbeattyus.com>; Morgan, Troy <tmorgan@precisionwalls.com>
Cc: Vega, Navor <NVega@precisionwalls.com>; Stanton, David <DStanton@Balfourbeattyus.com>
Subject: RE: Grae Framers

David/Tim

Thanks for passing along this information. I finally had the opportunity to speak to Grae yesterday and he was under the impression that he would be dealing directly with Balfour Beatty and was never expecting a call from Precision Walls. He also mentioned that he was approached by Mike Bennett about providing labor for not only our scope but others as well and even was asked to furnish a superintendent to help out. Grae was very receptive to the conversation and very helpful, however I told him we are comfortable with the number of men we are currently working onsite.

We added 4 framers last week, 4 more framers this week, as well as 2 finishers to address the loose ends that have been left behind on this project for various reasons. It is our plan to start at least one crew in the basement level and progressively work them up through the building to catch all remaining loose ends. We would appreciate Balfour's help in making sure this crew is productive and can complete everything possible as they move up. If there are any cost issues involved with these loose ends we will need to work together to resolve them quickly so we do not continue to leave incomplete areas behind.

Your willingness to help is apparent and we certainly appreciate it. If you guys have any further questions or concerns please let us know.

Thanks

Michael Zinna
Project Manager
<image001.jpg>
mzinna@precisionwalls.com
P: (843) 793-6020
M: (843) 991-0528
7317 Peppermill Pkwy
N. Charleston, SC 29418

"Our Passion is Building Strong Customer Relationships and Being the Partner that Helps Drive Your Job"

Confidentiality Notice: *This email is intended for the sole use of the intended recipient(s) and may contain confidential, proprietary or privileged information. If you are not the intended recipient, you are notified that any use, review, dissemination, copying or action taken based on this message or its attachments, if any, is prohibited. If you are not the intended recipient, please contact the sender by reply*

From: Spano, Tim [mailto:timspano@Balfourbeattyus.com]
Sent: Tuesday, October 03, 2017 8:00 AM
To: Morgan, Troy <tmorgan@precisionwalls.com>
Cc: Zinna, Michael <MZinna@precisionwalls.com>; Vega, Navor <NVega@precisionwalls.com>; Stanton, David <DStanton@Balfourbeattyus.com>
Subject: Re: Grae Framers

10-4, Thanks for the info. Keep us posted.

Sent from my iPhone

On Oct 3, 2017, at 7:13 AM, Morgan, Troy <tmorgan@precisionwalls.com> wrote:

Good morning Tim

I forwarded the message to Navor who called them last week. He left a message and no one has returned the call yet. We discussed this again yesterday and Michael was going to call them today. I will as well. CPI is a general contractor who specializes in building hotels. I'm not sure how Trey could be much help. From what I have gathered he would pick out of the same limited labor pool that is out there now

Thanks troy

Troy Morgan
Precision Walls Inc.
843-860-6647

On Oct 3, 2017, at 7:06 AM, Spano, Tim <timspano@Balfourbeattyus.com> wrote:

Guys, We provided Pwalls a contact to Grae framing that the Marion Owner provided us and we heard they were contacted by Pwalls about working on another job, not Marion. We don't know if this is the case so can you comment on it? We currently lack framing completion on every floor of the hotel and need multiple framers. Thanks

Tim Spano | Sr. Project Manager **Carolina's**
office: 843.974.4590 | mobile: 813.917.1656 | email:timspano@balfourbeattyus.com
Balfour Beatty Construction | www.balfourbeattyus.com
306 Meeting St., Suite 300, Charleston, SC 29401
Connect with us: Facebook | Twitter | YouTube | LinkedIn
<image003.jpg>

Message

From: Sandeen, Jeff [JSandeen@Balfourbeattyus.com]
Sent: 10/18/2017 10:59:51 AM
To: Dean, Pat [pdean@balfourbeattyus.com]
Subject: RE: Marion Square
Attachments: Re: Change Orders

They have added additional folks (total count approx. 45) at MSH but not enough and have actually lost some of their framers which they need desperately. The team is telling me they have walked these areas with P-Wall and their management and they know what they need. I will be able to give additional specifics later.

With regards to 300... I spoke with Beth yesterday about the status of their changes and getting them into this month's billing. She reached out to their PM (attached) and copied myself and Troy on the correspondence for a wrap up by next Tuesday for their billing. She is also claiming that they have a number of B/C's that need to be cleaned up. Not certain the specifics around the B/C's but will follow up tomorrow when I am onsite. We are not all clean on the submission of these changes but I have been on Wick for months to get these approved and we are slowly getting them approved. We also negotiated a retainage reduction on their behalf last month to help with cash flow.

We can discuss further tomorrow – Thanks,

Jeffrey Sandeen | Vice President / Business Unit Leader, Carolinas
office: 704.319.4029 |mobile: 704.534.8522 | email: JSandeen@balfourbeattyus.com
Balfour Beatty Construction | 1930 Camden Road, Suite 280, Charlotte, NC 28203|www.balfourbeattyus.com
Connect with us: Facebook | Twitter | YouTube| Linkedin

From: Dean, Pat
Sent: Wednesday, October 18, 2017 11:31 AM
To: Sandeen, Jeff <JSandeen@Balfourbeattyus.com>
Subject: Fwd: Marion Square

Sent from my iPad

Begin forwarded message:

From: "Allen, Brian" <ballen@precisionwalls.com>
Date: October 18, 2017 at 11:24:51 AM EDT
To: "Dean, Pat" <pdean@balfourbeattyus.com>
Subject: Re: Marion Square

Update: We have added additional crews to get floor 8 moving along faster.

The change orders that we have been waiting on for several months now are mods 7 and 8.

Brian C. Allen, *LEED AP*
President

Precision Walls, Inc.
1230 NE Maynard Road
Cary, NC 27513-4174
919.832.0380 office
919.422.5865 cell

919.839.1402 fax
ballen@precisionwalls.com
www.precisionwalls.com

Raleigh - Greensboro - Charlotte - Wilmington - Greenville, NC - Columbia - Greenville/Spartanburg - Charleston, SC - Nashville, TN - Richmond, VA

On Oct 16, 2017, at 6:06 PM, Dean, Pat <pdean@balfourbeattyus.com> wrote:

Will do.

Thanks,

Pat Dean

On Oct 16, 2017, at 6:03 PM, Allen, Brian <ballen@precisionwalls.com> wrote:

Pat,

I spoke to our guys this afternoon. None them knows anything about a commitment to add 20 more workers to the job.

Troy Morgan talked to David Stanton this afternoon and David told him that the inspections on the 8th floor that we have been waiting on for 6-8 weeks were signed off late Friday afternoon.
That does free up more work for us and should give us more productive places to work.

We had 29 people there today and will work to get 4-6 more workers there by Wednesday. We will then look at what is available and plan any future manpower accordingly.

We are loosing $ on this job already based on all the owner delays and jumping around the job to try to keep our manpower productive. We can not afford to flood the job with workers any more without productive work out ahead of us.

Anything you can do to get the change orders moving on this job and 300 South Tryon would really help us. Cash is really upside down for us on both projects.

Thanks for your help.

Brian C. Allen, *LEED AP*
President

Precision Walls, Inc.
1230 NE Maynard Road
Cary, NC 27513-4174
919.832.0380 office
919.422.5865 cell
919.839.1402 fax
ballen@precisionwalls.com
www.precisionwalls.com

Raleigh - Greensboro - Charlotte - Wilmington - Greenville, NC - Columbia - Greenville/Spartanburg - Charleston, SC - Nashville, TN - Richmond, VA

On Oct 16, 2017, at 3:51 PM, Dean, Pat <pdean@balfourbeattyus.com> wrote:

Brian,
I hope you are doing well and thanks again for the invite to the race. I guess we were promised some additional manpower down at Marion Square today off around 20 people but got only 2? Can you jump in the middle of it and let us know.

Thanks

Pat Dean | Chief Operating Officer |Carolinas and Georgia
office: 704.295.4757 | mobile:704.840.4205 | email: pdean@balfourbeattyus.com
Balfour Beatty Construction |1930 Camden Rd Ste 280, Charlotte, NC 28203 |www.balfourbeattyus.com
Connect with us: Facebook | Twitter | YouTube | LinkedIn




Message

From: Starcevic, Nicholas [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=65F22BA2C54F4D0F843FDB8B842E3115-NICHOLAS ST]
Sent: 12/15/2017 12:30:25 PM
To: Zinna, Michael [MZinna@precisionwalls.com]; Morgan, Troy [tmorgan@precisionwalls.com]
CC: Spano, Tim [timspano@Balfourbeattyus.com]; Dooley, Alec [adooley@Balfourbeattyus.com]; Vega, Navor [NVega@precisionwalls.com]; Simonton, David [dsimonton@balfourbeattyus.com]; David Stanton (DStanton@Balfourbeattyus.com) [DStanton@Balfourbeattyus.com]
Subject: RE: MSH - Precision Walls Area of Concern

Mike / Troy,

It is very clear that Precision Walls needs more framers, hangers, and finishers on the project. We have walked this list twice now and they mostly remain status quo, and now we have already lost 2 days on hanging L8. If we don't see the appropriate actions taken in the next 48 hours, we bring in the necessary manpower to get this job finished.

Thanks,

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Starcevic, Nicholas
Sent: Tuesday, December 12, 2017 4:57 PM
To: 'Zinna, Michael' <MZinna@precisionwalls.com>; Morgan, Troy <tmorgan@precisionwalls.com>
Cc: Spano, Tim <timspano@Balfourbeattyus.com>; Dooley, Alec <adooley@Balfourbeattyus.com>; Vega, Navor <NVega@precisionwalls.com>
Subject: RE: MSH - Precision Walls Area of Concern

Mike – the agreement was to hit those 2 floors hard and get off of them in a week. We'll discuss the next steps tomorrow, but the walk tomorrow is to be focused on reviewing deficiencies and loose ends on L3-L8.

Thanks,

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Zinna, Michael [mailto:MZinna@precisionwalls.com]
Sent: Tuesday, December 12, 2017 4:08 PM
To: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Morgan, Troy <tmorgan@precisionwalls.com>
Cc: Spano, Tim <timspano@Balfourbeattyus.com>; Dooley, Alec <adooley@Balfourbeattyus.com>; Vega, Navor

<NVega@precisionwalls.com>
Subject: RE: MSH - Precision Walls Area of Concern

Nick

We may need some more time than COB tomorrow to get everything below addressed. Troy Williams is back onsite and is currently reviewing this list and will get what has not been addressed on the below list taken care of as we always do. Some of the change order items fall back on me as far as the delay to get them going however I will make sure Troy is caught up tomorrow and ready to move forward.

See you tomorrow morning.

Thanks

Michael Zinna
Project Manager
PRECISION WALLS, INC.
Partners in driving your job
mzinna@precisionwalls.com
P: (843) 793-6020
7317 Peppermill Pkwy
N. Charleston, SC 29418

"Our Passion is Building Strong Customer Relationships and Being the Partner that Helps Drive Your Job"

Confidentiality Notice: *This email is intended for the sole use of the intended recipient(s) and may contain confidential, proprietary or privileged information. If you are not the intended recipient, you are notified that any use, review, dissemination, copying or action taken based on this message or its attachments, if any, is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy or delete all copies of the original message and any attachments. Thank you.*

From: Starcevic, Nicholas [mailto:NStarcevic@Balfourbeattyus.com]
Sent: Tuesday, December 12, 2017 1:00 PM
To: Zinna, Michael <MZinna@precisionwalls.com>; Morgan, Troy <tmorgan@precisionwalls.com>
Cc: Spano, Tim <timspano@Balfourbeattyus.com>; Dooley, Alec <adooley@Balfourbeattyus.com>
Subject: RE: MSH - Precision Walls Area of Concern

Troy / Michael,

The below areas still have open issues, whether it be clean up, framing, executed change orders, finishers, etc. Most of these areas were walked Wednesday of last week and still have open Precision Walls issues. As agreed to last week, they need to be addressed by end of day tomorrow, December 13. If they are not complete by COB tomorrow, we will bring in additional help to close out these floors.

Patisserie
Spa Retail
Retail
Concierge
Foyer / Rotunda
Stair 3
Stair 4 / Dining
Plaster Ceilings (all 3 areas)
Hope's Pockets

Pump Room

Level 2
Back of House Corridor
Spa
Bridal
Spa Elevator
Boardroom Alcove
Won door (Layout)
IDF Closet
Ballroom
- Columns
- Arches Windows
- Modern fold Ceilings
- Dining Clean up

Hose Reel Cab
Storage 238

See you tomorrow after the PM Meeting.

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Zinna, Michael [mailto:MZinna@precisionwalls.com]
Sent: Tuesday, December 05, 2017 4:25 PM
To: Dooley, Alec <adooley@Balfourbeattyus.com>; Morgan, Troy <tmorgan@precisionwalls.com>
Cc: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>
Subject: RE: MSH - Precision Walls Area of Concern

I printed this out and will bring a copy with me tomorrow to review. Thanks for putting this together Alec.

Michael Zinna
Project Manager
PRECISION WALLS, INC.
Partners in driving your job.
mzinna@precisionwalls.com
P: (843) 793-6020
7317 Peppermill Pkwy
N. Charleston, SC 29418

"Our Passion is Building Strong Customer Relationships and Being the Partner that Helps Drive Your Job"

Confidentiality Notice: *This email is intended for the sole use of the intended recipient(s) and may contain confidential, proprietary or privileged information. If you are not the intended recipient, you are notified that any use, review, dissemination, copying or action taken based on this message or its attachments, if any, is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy or delete all copies of the original message and any attachments. Thank you.*

From: Dooley, Alec [mailto:adooley@Balfourbeattyus.com]
Sent: Tuesday, December 5, 2017 4:21 PM
To: Morgan, Troy <tmorgan@precisionwalls.com>; Zinna, Michael <MZinna@precisionwalls.com>
Cc: Starcevic, Nicholas <NStercevic@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>
Subject: MSH - Precision Walls Area of Concern

Troy,

Please see the attached list of incomplete items that are adversely affecting our completion schedule. We would like to walk these with you tomorrow. Please review with your team and we will discuss in depth during the 930 walk.

Thanks,

Alec Dooley | Assistant Project Manager
mobile: 704.614.4907 | email: adooley@balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting Street, Suite 300, Charleston, SC 29401| www.balfourbeattyus.com

Message

From: Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]
Sent: 1/8/2018 12:02:05 PM
To: Zinna, Michael [MZinna@precisionwalls.com]
CC: Dooley, Alec [adooley@Balfourbeattyus.com]; Spano, Tim [timspano@Balfourbeattyus.com]; Hotelat Marion [HotelatMarion@balfourbeattyus.com]
Subject: Schedule and Quality Concerns - HMS

Michael –this is not just an observation made over the last 3 weeks, but rather an ongoing concern that we routinely share with Precision Walls. The only schedule relief will be on holidays already built into the schedule and days received from the owner for inclement weather.

Nick Starcevic | Project Manager
mobile: 704-351-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Zinna, Michael [mailto:MZinna@precisionwalls.com]
Sent: Saturday, January 06, 2018 11:00 AM
To: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>
Cc: Dooley, Alec <adooley@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>
Subject: RE: Concealed Sprinkler Heads in Guestrooms - HMS

Nick

Precision Walls disagrees with your statement that we are struggling to staff our work on this project. The past three weeks were Christmas, New Years, and Winter Storm Grayson. This is the time of the year where many employees take time off to spend with their families and our branch was shutdown Tuesday January 2nd through Monday January 8th for the safety of our employees and subcontractors during Winter Storm Grayson. Precision Walls will have a full staff back onsite Monday January 8th to continue our work.

As far as our pricing for this work, it was reviewed on more than one occasion with our team and will not be changing.

Thanks

Michael Zinna
Project Manager
PRECISION WALLS, INC.
Partners in driving your job.
mzinna@precisionwalls.com
P: (843) 793-6020
7317 Peppermill Pkwy
N. Charleston, SC 29418

"Our Passion is Building Strong Customer Relationships and Being the Partner that Helps Drive Your Job"

Confidentiality Notice: This email is intended for the sole use of the intended recipient(s) and may contain confidential, proprietary or privileged information. If you are not the intended recipient, you are notified that any use, review, dissemination, copying or action taken based on this message or its attachments, if any, is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy or delete all copies of the original message and any attachments. Thank you.

From: Starcevic, Nicholas [mailto:NStarcevic@Balfourbeattyus.com]
Sent: Friday, January 5, 2018 1:54 PM
To: Zinna, Michael <MZinna@precisionwalls.com>
Cc: Dooley, Alec <adooley@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>
Subject: RE: Concealed Sprinkler Heads in Guestrooms - HMS

Mike,

Between the amount of work that you're struggling to staff already and the exorbitant pricing, we are not asking PWalls to perform this work currently. If you can reasonably price the scope and catch up your contracted work, we can reevaluate.

Thanks,

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Zinna, Michael [mailto:MZinna@precisionwalls.com]
Sent: Friday, January 05, 2018 1:01 PM
To: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>
Cc: Dooley, Alec <adooley@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>
Subject: RE: Concealed Sprinkler Heads in Guestrooms - HMS

Nick

I am told that Level 5 is doing the sprinkler head patching. Please confirm so I can void this change order request if that is the case.

Thanks

Michael Zinna
Project Manager

PRECISION WALLS, INC.
Partners in driving your job.

mzinna@precisionwalls.com
P: (843) 793-6020
7317 Peppermill Pkwy
N. Charleston, SC 29418

"Our Passion is Building Strong Customer Relationships and Being the Partner that Helps Drive Your Job"

Confidentiality Notice: *This email is intended for the sole use of the intended recipient(s) and may contain confidential, proprietary or privileged information. If you are not the intended recipient, you are notified that any use, review, dissemination, copying or action taken based on this message or its attachments, if any, is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy or delete all copies of the original message and any attachments. Thank you.*

From: Starcevic, Nicholas [mailto:NStarcevic@Balfourbeattyus.com]
Sent: Tuesday, December 26, 2017 4:00 PM
To: Zinna, Michael <MZinna@precisionwalls.com>
Cc: Dooley, Alec <adooley@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>
Subject: Re: Concealed Sprinkler Heads in Guestrooms - HMS

Really? Those 3 really told you it takes 12 hours to patch a 10x10 hole?

Nick Starcevic | Balfour Beatty Construction
Cell: 704.361.3265

On Dec 26, 2017, at 3:17 PM, Zinna, Michael <MZinna@precisionwalls.com> wrote:

12 man hours per patch X 350 locations. The man hours were revised and discussed in the field with Troy M, Navor, and Troy W.

Michael Zinna
Project Manager
<image001.png>
mzinna@precisionwalls.com
P: (843) 793-6020
7317 Peppermill Pkwy
N. Charleston, SC 29418

"Our Passion is Building Strong Customer Relationships and Being the Partner that Helps Drive Your Job"

Confidentiality Notice: *This email is intended for the sole use of the intended recipient(s) and may contain confidential, proprietary or privileged information. If you are not the intended recipient, you are notified that any use, review, dissemination, copying or action taken based on this message or its attachments, if any, is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy or delete all copies of the original message and any attachments. Thank you.*

From: Starcevic, Nicholas [mailto:NStarcevic@Balfourbeattyus.com]
Sent: Tuesday, December 26, 2017 3:15 PM
To: Zinna, Michael <MZinna@precisionwalls.com>
Cc: Dooley, Alec <adooley@Balfourbeattyus.com>
Subject: Re: Concealed Sprinkler Heads in Guestrooms - HMS

Please provide more detail on how you came up with 4,200 hours. I do not know where to start with evaluating this proposal.

Nick Starcevic | Balfour Beatty Construction
Cell: 704.361.3265

On Dec 26, 2017, at 3:06 PM, Zinna, Michael <MZinna@precisionwalls.com> wrote:

Nick

See attached change order request. Per your request we included clean up. Please note we believe there is going to be issues on the punch list with 350 patches in the room ceilings and we have accounted for that in our pricing. It is going to be very difficult to make a patch disappear in a level 4 ceiling. If you have any questions please let me know.

Thanks

Michael Zinna
Project Manager
<image001.png>
mzinna@precisionwalls.com
P: (843) 793-6020
7317 Peppermill Pkwy
N. Charleston, SC 29418

"Our Passion is Building Strong Customer Relationships and Being the Partner that Helps Drive Your Job"

Confidentiality Notice: *This email is intended for the sole use of the intended recipient(s) and may contain confidential, proprietary or privileged information. If you are not the intended recipient, you are notified that any use, review, dissemination, copying or action taken based on this message or its attachments, if any, is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy or delete all copies of the original message and any attachments. Thank you.*

From: Starcevic, Nicholas [mailto:NStarcevic@Balfourbeattyus.com]
Sent: Friday, December 15, 2017 8:04 AM
To: Zinna, Michael <MZinna@precisionwalls.com>; Scott McCormack <scottm@meritnow.com>
Cc: Dooley, Alec <adooley@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>
Subject: RE: Concealed Sprinkler Heads in Guestrooms - HMS

Not on this one. We only have 1 staff member that handles clean up and he's running around the building. Vacuum sanders and clean up after please.

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Zinna, Michael [mailto:MZinna@precisionwalls.com]
Sent: Thursday, December 14, 2017 12:26 PM
To: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Scott McCormack <scottm@meritnow.com>
Cc: Dooley, Alec <adooley@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>
Subject: RE: Concealed Sprinkler Heads in Guestrooms - HMS

Nick

Would BBC be willing to take care of the floor protection and clean up at all locations so PWI and Merit can focus on getting the work done and save on having to charge for those costs? Just a suggestion, let me know what you think.

Thanks

Michael Zinna
Project Manager
<image001.png>
mzinna@precisionwalls.com
P: (843) 793-6020
7317 Peppermill Pkwy
N. Charleston, SC 29418

"Our Passion is Building Strong Customer Relationships and Being the Partner that Helps Drive Your Job"

Confidentiality Notice: *This email is intended for the sole use of the intended recipient(s) and may contain confidential, proprietary or privileged information. If you are not the intended recipient, you are notified that any use, review, dissemination, copying or action taken based on this message or its attachments, if any, is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy or delete all copies of the original message and any attachments. Thank you.*

From: Starcevic, Nicholas [mailto:NStarcevic@Balfourbeattyus.com]
Sent: Thursday, December 14, 2017 9:19 AM
To: Zinna, Michael <MZinna@precisionwalls.com>; Scott McCormack <scottm@meritnow.com>
Cc: Dooley, Alec <adooley@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>
Subject: Concealed Sprinkler Heads in Guestrooms - HMS
Importance: High

Guys –

We have an issue with the sprinkler heads in the guestrooms and all will need to be replaced. Please price a small patch for each pendant (assume completing a floor at a time) in every guestroom. There is between 350 and 400 in total, but it should really be 1 trip to each room. We will need to execute this work as swiftly and cleanly as possible since we ARE NOT stopping with other activities.

Thanks,

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

<MSH - Concealed sprinkler head patching COR.pdf>

Message

From: Robert Weyer [rweyer@bernhardmcc.com]
Sent: 1/16/2018 1:58:40 PM
To: Dale, Marty [mdale@balfourbeattyus.com]
CC: Dooley, Alec [adooley@Balfourbeattyus.com]; Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]; Spano, Tim [timspano@Balfourbeattyus.com]; Eldridge, Johnny [JEldridge@Balfourbeattyus.com]; Paul Amend [pamend@bernhardmcc.com]; Demosthenis Stavrou [dstavrou@bernhardmcc.com]; Phil Garcia, Jr [pgarcia@bernhardmcc.com]; Judson Sanders [jsanders@bernhard.com]
Subject: RE: Mixing Valve installation at Marion Hotel

Marty, as I said earlier in today's meeting I am working on trying to put a team together to work this weekend to install the mixing valve. As far as the mixing valve being installed earlier, it is out of sequence but then again so is the rest of this job I'm dealing with what I'm dealt. Level 5 fixtures where on schedule per the delivery and install schedule I gave everybody and I had to stop because the painting and wall covering was not done on a third of the floor there was a week delay to fixture install due to this. I was just able to start back on five when you required me to be on three and directed me to move all the fixture setters to level 3. As far manpower Demo we'll be meeting with BBC, I believe Monday maybe earlier to discuss this.

From: Dale, Marty [mailto:mdale@balfourbeattyus.com]
Sent: Tuesday, January 16, 2018 1:34 PM
To: Robert Weyer <rweyer@bernhardmcc.com>
Cc: Dooley, Alec <adooley@Balfourbeattyus.com>; Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Eldridge, Johnny <JEldridge@Balfourbeattyus.com>
Subject: Mixing Valve installation at Marion Hotel

Just a follow up that the mixing valve installation is scheduled for this weekend and will be done on Saturday to minimize disruption of activities to other trades. Please take a minute to look at the areas we need you working in and try and get more manpower.
Items like the mixing valve probably needed to be installed a while back before everyone began using building water instead of temp water.
My earlier walk on level 5 shows installation of fixtures has started, but was interrupted to install valves and hook up plumbing on level 3.
We will be continuing at this pace so it is clear to us you need quite a few more people for the next little while.

Thanks,

Marty Dale | Senior Superintendent
office: 843-974-4590 | mobile: 803-201-3723 | email: mdale@balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting Street Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

Message

From: Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]
Sent: 1/23/2018 8:35:31 AM
To: Spano, Tim [timspano@Balfourbeattyus.com]; Michael McGregor [MMcGregor@pasco-inc.com]
CC: Derek Goodpaster [dgoodpaster@pasco-inc.com]; Dooley, Alec [adooley@Balfourbeattyus.com]; Dale, Marty [mdale@balfourbeattyus.com]; Todd Jeffers [TJeffers@pasco-inc.com]
Subject: PASCO - Need more manpower - HMS

Importance: High

Pasco team,

It is apparent the current manpower onsite cannot keep up with work available. You continue to hold up the critical path so maintaining a 4 man crew for 40 hours a week is not cutting it. Unfortunately, we're at the point of putting PASCO on default notice. We need to know what you're doing to cure this issue.

Thanks,

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Spano, Tim
Sent: Tuesday, January 23, 2018 6:43 AM
To: Michael McGregor <MMcGregor@pasco-inc.com>
Cc: Derek Goodpaster <dgoodpaster@pasco-inc.com>; Dooley, Alec <adooley@Balfourbeattyus.com>; Dale, Marty <mdale@balfourbeattyus.com>; Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>
Subject: front porch heads

Michael, The front porch heads not being set are delaying hanging that ceiling. That porch was cleared for access a week ago Monday. Make sure that Will gets these done today. I know that 5th floor portals are a hot item also that y'all started yesterday. We are working on the checklist you sent for startup. Thanks

Tim Spano | Sr. Project Manager **Carolina's**
office: 843.974.4590 | mobile: 813.917.1656 | email:timspano@balfourbeattyus.com
Balfour Beatty Construction | www.balfourbeattyus.com
306 Meeting St., Suite 300, Charleston, SC 29401
Connect with us: Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

Message

From: Robert Weyer [rweyer@bernhardmcc.com]
Sent: 1/24/2018 6:42:29 AM
To: Brafford, Heath [HBrafford@Balfourbeattyus.com]; Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]
CC: Demosthenis Stavrou [dstavrou@bernhardmcc.com]; Spano, Tim [timspano@Balfourbeattyus.com]; Dooley, Alec [adooley@Balfourbeattyus.com]; Ledford, Ryan [RLedford@Balfourbeattyus.com]; Eldridge, Johnny [JEldridge@Balfourbeattyus.com]; Paul Amend [pamend@bernhardmcc.com]; Zanowski, Steven [SZanowski@Balfourbeattyus.com]; Dale, Marty [mdale@balfourbeattyus.com]
Subject: RE: Water @ HMS

All, I've turned on rooms for the cleaners and have been in contact with them so as to stay in front of them. We were going to open rooms on the North and East side for them yesterday and when my guy talked with the cleaners she told him not to worry about it because she was told to stop by BBC. This morning I'm having my guy open three rooms in each hallway so they can continue if still on site. In order to install the mixing valve this weekend I will have to drain down the cold water which means we will have to go back to three and close all these valves so we are draining from the third floor down and not the entire building so it does not take all day to drain. This will insure that we are able to complete this work Saturday, providing we don't run into any unforeseen Issues.

-----Original Message-----
From: Brafford, Heath [mailto:HBrafford@Balfourbeattyus.com]
Sent: Wednesday, January 24, 2018 7:05 AM
To: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Robert Weyer <rweyer@bernhardmcc.com>
Cc: Demosthenis Stavrou <dstavrou@bernhardmcc.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Dooley, Alec <adooley@Balfourbeattyus.com>; Ledford, Ryan <RLedford@Balfourbeattyus.com>; Eldridge, Johnny <JEldridge@Balfourbeattyus.com>; Paul Amend <pamend@bernhardmcc.com>; Zanowski, Steven <SZanowski@Balfourbeattyus.com>; Dale, Marty <mdale@balfourbeattyus.com>
Subject: RE: Water @ HMS

In addition to level 3, level 5 will need water starting middle of next week 1/31, and 4th floor around 2/8.

Heath Brafford | Superintendent | Green Advantage Commercial Certified ®
office: 704.319.4000 | mobile: 704.309.1853 | email: hbrafford@balfourbeattyus.com Balfour Beatty Construction | 1930 Camden Rd, Ste 280, Charlotte, NC 28203 ZERO HARM Make Safety Personal
www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

-----Original Message-----
From: Starcevic, Nicholas
Sent: Tuesday, January 23, 2018 9:20 PM
To: Robert Weyer
Cc: dstavrou@bernhardmcc.com; Spano, Tim; Dooley, Alec; Ledford, Ryan; Eldridge, Johnny; Paul Amend; Brafford, Heath; Zanowski, Steven; Dale, Marty
Subject: Water @ HMS

Robert - it' s unacceptable that we don' t have water on L3. The cleaner has now demob' d and you guys are still messing around with water on L3. I know we discussed this yesterday but you need more manpower onsite.

Thanks

Nick Starcevic | Balfour Beatty Construction
Cell: 704.361.3265

Message

From: Pieniak, Shanti [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=53AC7990C8434A23A7891FD5265DFA03-PIENIAK, SH]
Sent: 1/27/2018 10:07:34 AM
To: Robert Weyer [rweyer@bernhardmcc.com]
CC: Dooley, Alec [adooley@Balfourbeattyus.com]; Johnny Eldridge (JEldridge@Balfourbeattyus.com) [JEldridge@Balfourbeattyus.com]
Subject: FW: Hotel at Marion Square - RFI:1164 - Guestroom 839 Duct Relocation
Attachments: RFI-1164.0-Guestroom_839_Duct_Reloca.htm; RFI 1164 - Supporting Documents.pdf

Robert,

I don't know where this RFI is with pricing, but Watson ripped up that wall a decent amount and the painter hasn't gotten up there yet. So it would be a good time to get GA up there to move this duct and get this finished.

Obviously I know you're super busy with all the valve stuff and have limited manpower, just trying to give you a heads up.

Thanks,

Shanti Pieniak
office: 843-764-9769 | email: spieniak@balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

-----Original Message-----
From: Shanti Pieniak [mailto:system@constructware.com]
Sent: Tuesday, November 28, 2017 4:33 PM
To: Dooley, Alec <adooley@Balfourbeattyus.com>; bayr@flooringservicesinc.com; benjamin.schneider@otis.com; wbrittelli@watsonelec.com; BKositz@flooringservicesinc.com; cdharwell@gmail.com; cclubb@watsonelec.com; c.hunnicut@lmisystemsinc.com; cvenable@oldnorthstatemasonry.com; clacour@davidallen.com; cfrancke@gulfstreamconstruction.com; DWinovich@watsonelec.com; davei@wondoor.com; daved@bernhardmcc.com; dfarmer@watsonelec.com; David@lccm.com; dtraub@bakerroofing.com; david@premierexteriorsllc.com; dsmith@pasco-inc.com; dkromel@bakerroofing.com; dcovert@bernhardmcc.com; doug.ford@skylinesteel.com; estoehr@bernhardmcc.com; gcerra@precisionwalls.com; greg@chesterpools.com; jkenna@heedesoutheast.com; jwarren@warcoconstruction.com; jbyrnes@ses-sc.com; Eldridge, Johnny <JEldridge@Balfourbeattyus.com>; jcagle@bakerroofing.com; josephheath@davidallen.com; beechj@lithko.com; jigga571978@gmail.com; jballard@gulfstreamconstruction.com; keithc@chesterpools.com; ktownley@tateornamental.com; kwcox@maxsonassociates.com; ken.hummel@kochcorporation.com; krogers@cookandboardman.com; larry.vihlidal@kochcorporation.com; ldarre@wondoor.com; lvidal@pasco-inc.com; lge@pleasantplaces.com; martin@seas-tr.com; marty@parkermarine.net; Dale, Marty <mdale@balfourbeattyus.com>; mayankdagliya@davidallen.com; MMcGregor@pasco-inc.com; mschneida@bernhardmcc.com; mzinna@precisionwalls.com; mike@mccallbro.com; npeak@warcoconstruction.com; Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; pamend@bernhardmcc.com; pauldustin@glass1st.net; peggy.grover@kochcorporation.com; pgarcia@bernhardmcc.com; robg@wsi-nc.com; nolenr@lithko.com; rweyer@bernhardmcc.com; rmkenney@rjkenney.com; rwilliams@bernhardmcc.com; Ledford, Ryan <RLedford@Balfourbeattyus.com>; sam@seas-tr.com; sbullock@trimarkusa.com; scottm@meritnow.com; Sharris@tateornamental.com; Pieniak, Shanti <SPieniak@Balfourbeattyus.com>; smuenow@maxsonassociates.com; Zanowski, Steven <SZanowski@Balfourbeattyus.com>; estimating@eliteawnings.net; Spano, Tim <timspano@Balfourbeattyus.com>; twilliams@precisionwalls.com; zcole@msikyle.com
Subject: Hotel at Marion Square - RFI:1164 - Guestroom 839 Duct Relocation

All,

The Architect/Engineer and/or Owner has issued the attached information in response to the referenced RFI. Should this result in a change of the Scope of your Work, please provide detailed pricing analysis and schedule impact within seven (7) calendar days of receipt of this letter. Failure to submit timely information will constitute a waiver of your right to a change order for the work and may result in the incorporation of the changed work into your subcontract at no cost.

Thank you,

Shanti Pieniak

office: 843-764-9769 | email: spieniak@balfourbeattyus.com Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401 www.balfourbeattyus.com

Message

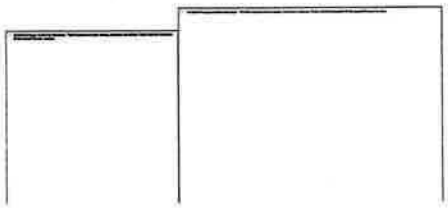
From: Derek Goodpaster [dgoodpaster@pasco-inc.com]
Sent: 2/17/2018 6:29:57 AM
To: Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]
CC: Mike Mcgregor [MMcGregor@pasco-inc.com]; Dooley, Alec [adooley@Balfourbeattyus.com]; Todd Jeffers [TJeffers@pasco-inc.com]; Dale, Marty [mdale@balfourbeattyus.com]; Spano, Tim [timspano@Balfourbeattyus.com]; Simonton, David [dsimonton@balfourbeattyus.com]
Subject: Re: Marion Square - Man Power

We'll be onsite Monday to walk again. We'll make our assessment and give you a plan to correct any deficiencies we have. We have been held up in several locations throughout this project too. We are all ready to put this project behind us.

Sincerely,

Derek Goodpaster
Senior Sales Manager
Palmetto Automatic Sprinkler Co. Inc.
118 Bee Street
Ladson, SC 29456
BL #: FSC.1810
PH: 843-879-9641
FAX: 843-879-9732
MOBILE: 843-296-1027

Check out our website: www.pasco-inc.com



DISCLAIMER: The information in this message is confidential and may be legally privileged. It is intended solely for the addressee. Access to this message by anyone else is unauthorized. If you are not the intended recipient, any disclosure, copying, or distribution of the message, or any action or omission taken by you in reliance on it, is prohibited and may be unlawful. Please immediately contact the sender if you have received this message in error.

On Feb 17, 2018, at 7:02 AM, Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com> wrote:

Michael -

Per our conversation, PASCO refuses to work overtime and does not think they are holding up the schedule. You would not commit to another crew, only that you are trying to put one together for next week.

As we discussed, this is unacceptable. You continue to hold up other trades and we are putting you on notice. We will supplement your manpower if you do not get increase manpower and work to cure the delay.

We'll send another list to you Monday with the areas you're deficient.

Thanks

Nick Starcevic | Balfour Beatty Construction
Cell: 704.361.3265

On Feb 15, 2018, at 9:31 AM, Mike Mcgregor <MMcGregor@pasco-inc.com> wrote:

Nick-

I have spoke with Todd and Derek. Todd is putting a plan together for extra manpower. One of us will reach out to you, once we have a plan.

Sent from my Verizon, Samsung Galaxy smartphone

-------- Original message --------
From: "Starcevic, Nicholas" <NStarcevic@Balfourbeattyus.com>
Date: 2/15/18 8:47 AM (GMT-05:00)
To: "Dooley, Alec" <adooley@Balfourbeattyus.com>
Cc: Mike Mcgregor <MMcGregor@pasco-inc.com>, Todd Jeffers <TJeffers@pasco-inc.com>, Derek Goodpaster <dgoodpaster@pasco-inc.com>, "Dale, Marty" <mdale@balfourbeattyus.com>, "Spano, Tim" <timspano@Balfourbeattyus.com>, "Simonton, David" <dsimonton@balfourbeattyus.com>
Subject: Re: Marion Square - Man Power

And we need confirmation that you'll be working Fridays and Saturday's.

Nick Starcevic | Balfour Beatty Construction
Cell: 704.361.3265

On Feb 15, 2018, at 8:45 AM, Dooley, Alec <adooley@Balfourbeattyus.com> wrote:

Michael,

During yesterday's meeting you told the team that you would need to check with Todd and Derek to discuss available manpower in order to have a separate crew in the stairwells versus splitting your guys time from different areas of the building. Has this meeting/conversation happened? Can we set up a call for this afternoon or tomorrow morning to discuss?

Thanks,

Alec Dooley | Assistant Project Manager
mobile: 704.614.4907 | email: adooley@balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting Street, Suite 300, Charleston, SC 29401| www.balfourbeattyus.com

This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit http://www.mimecast.com

This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit http://www.mimecast.com

Message

From: Mike Mcgregor [MMcGregor@pasco-inc.com]
Sent: 3/16/2018 3:26:57 PM
To: Simonton, David [dsimonton@balfourbeattyus.com]; Starcevic, Nicholas [NStarcevic@Balfourbeattyus.com]
CC: Spano, Tim [timspano@Balfourbeattyus.com]; Derek Goodpaster [dgoodpaster@pasco-inc.com]; Todd Jeffers [TJeffers@pasco-inc.com]; Scotty Mill [smill@pasco-inc.com]
Subject: Re: Manpower - HMS

David-

The work you reffer to as holding up other trades, is change order work. PASCO has thousands of dollars of outstanding change order work that have yet been paid, from months ago. PASCO has additional manpower onsite monday-wednesday above our regular crew. The additional crew only work till Wednesday due to prior engagements made when both PASCO and BBC thought the Marion Square project would be long finished. Unfortunately Marion Square has pushed far to the right and now we are feeling the repercussion. As my operation manager has clearly stated, if BBC is willing to cover our half time, PASCO is willing to work guys on overtime.

Sent from my Verizon, Samsung Galaxy smartphone
-------- Original message --------
From: "Simonton, David" <dsimonton@balfourbeattyus.com>
Date: 3/16/18 3:14 PM (GMT-05:00)
To: Mike Mcgregor <MMcGregor@pasco-inc.com>, "Starcevic, Nicholas" <NStarcevic@Balfourbeattyus.com>
Cc: "Spano, Tim" <timspano@Balfourbeattyus.com>, Derek Goodpaster <dgoodpaster@pasco-inc.com>, Todd Jeffers <TJeffers@pasco-inc.com>, Scotty Mill <smill@pasco-inc.com>
Subject: RE: Manpower - HMS

Mike and Team, I'm still waiting on PASCO's response to working adequate hours, days, crews that can stay focused on this project and stop holding up BBC and its subcontractors in completing this project and ultimate turnover to the Owner. It is hard to comprehend your off and on approach to managing and manning this project with all of your QA/QC issues and incomplete work in place. Please enlighten myself and my team.
ds

David Simonton, Vice President Operations
C: (512) 391-9273 | www.balfourbeattyus.com
306 Meeting Street, Suite 300, Charleston, SC. 29401

Facebook | Twitter | LinkedIn

From: Mike McGregor [mailto:MMcGregor@pasco-inc.com]
Sent: Friday, March 16, 2018 12:26 PM
To: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>
Cc: Spano, Tim <timspano@Balfourbeattyus.com>; Derek Goodpaster <dgoodpaster@pasco-inc.com>; Todd Jeffers <TJeffers@pasco-inc.com>; Simonton, David <dsimonton@balfourbeattyus.com>; Scotty Mill <smill@pasco-inc.com>
Subject: RE: Manpower - HMS

I understand they're allowable, but are they required? As I said in our meeting, We show heads at the bottom of the pits. Our fire marshal requires them. But the elevator inspector may not require them if the hoist way meets NFPA 101 or applicable building code. PASCO's question is, before we install heads at the bottom of the shaft, are they required? Will the elevator inspector allow them to stay?

Nick all I am trying to avoid is the elevator failing inspection and PASCO having to cut into this expensive ceiling to remove our pipe as I have done in the past. Otis says heads are allowed I am guessing this is BBC instructing PASCO to install them, heads will be install in the pits and ready for inspection, Tuesday.

From: Starcevic, Nicholas [mailto:NStarcevic@Balfourbeattyus.com]
Sent: Friday, March 16, 2018 11:54 AM
To: Mike Mcgregor <MMcGregor@pasco-inc.com>
Cc: Spano, Tim <timspano@Balfourbeattyus.com>; Derek Goodpaster <dgoodpaster@pasco-inc.com>; Todd Jeffers <TJeffers@pasco-inc.com>; Simonton, David <dsimonton@balfourbeattyus.com>; Scotty Mill <smill@pasco-inc.com>
Subject: Re: Manpower - HMS

Heads in the pits are allowable, per Otis.

Nick Starcevic | Balfour Beatty Construction
Cell: 704.361.3265

On Mar 16, 2018, at 11:51 AM, Mike Mcgregor <MMcGregor@pasco-inc.com> wrote:

Nick-

Before leaving Marion, yesterday. I spoke with Tim about PASCO's plan for 1st floor elevator lobby. PASCO will have a 4 man crew demoing and re-installing this branch line, Monday morning. Tim was going to reach out to the elevator contractor in regards to the heads at the bottom of the elevator pits, I have not yet received a response. PASCO will demo the branch line feeding the pits but not re-install until we have an answer if heads are needed. If the heads are needed in the pits PASCO will need one day to install. I understand your concerns for this work to be complete, PASCO will have our branch line demoed and re-installed for Tuesdays inspection.

Nick please feel free to reach out to me directly with any questions or concerns. I am available 24/7

From: Starcevic, Nicholas [mailto:NStarcevic@Balfourbeattyus.com]
Sent: Friday, March 16, 2018 11:33 AM
To: Mike Mcgregor <MMcGregor@pasco-inc.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Derek Goodpaster <dgoodpaster@pasco-inc.com>
Cc: Todd Jeffers <TJeffers@pasco-inc.com>; Simonton, David <dsimonton@balfourbeattyus.com>; Scotty Mill <smill@pasco-inc.com>
Subject: RE: Manpower - HMS
Importance: High

Mike –You told us multiple times that you would be starting on the L1 Elevator Lobby rework this week, but it has not started and no one is onsite today. The overhead inspection is called for Tuesday and you have more than 1 days' worth of work. You need a full crew here today, tomorrow and possibly Sunday to complete this work, let alone the other open areas on the project. If it is not ready by noon on Monday, we will call off the inspection and continue to hold PASCO liable for the delay. Do not damage that ceiling, it is extremely expensive and long lead time for the custom studs.

Below you state that PASCO understands what is needed to finish the project, but no one is onsite today and you do not plan to work on this project this weekend. We also did not know that you cut the crew's hours to 8hrs/day when you went to 5 days per week. This totally defeats the purposes of the conversations we had weeks ago about manning up

and completing the project. Not only did you go back and cut recessed heads into almost every guestroom, you have now gone back and cut over 100 holes in finished that we just patched for you, again. Pasco will be held responsible for the costs and delays.

Scotty – I'm not sure you understand the impact this has on the job, but Tim and I tried to call you. This has been going on for too long and someone at PASCO needs to make a decision to make this job a priority.

Thanks,

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn
<image005.jpg><image006.jpg><image007.jpg>

From: Mike Mcgregor [mailto:MMcGregor@pasco-inc.com]
Sent: Friday, March 09, 2018 10:25 AM
To: Spano, Tim <timspano@Balfourbeattyus.com>; Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Derek Goodpaster <dgoodpaster@pasco-inc.com>
Cc: Todd Jeffers <TJeffers@pasco-inc.com>; Simonton, David <dsimonton@balfourbeattyus.com>
Subject: RE: Manpower - HMS

Tim-

PASCO understands what we need to do to finish this project. We have guys working today and we have the man power we need to finish our scope onsite during the week.

From: Spano, Tim [mailto:timspano@Balfourbeattyus.com]
Sent: Friday, March 9, 2018 9:27 AM
To: Mike Mcgregor <MMcGregor@pasco-inc.com>; Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Derek Goodpaster <dgoodpaster@pasco-inc.com>
Cc: Todd Jeffers <TJeffers@pasco-inc.com>; Simonton, David <dsimonton@balfourbeattyus.com>
Subject: RE: Manpower - HMS

The grape vine says the other two crews have another job they went to that they can only work on Fridays, Saturdays and Sundays. This is the only job in town!

Tim Spano | Sr. Project Manager **Carolina's**
office: 843.974.4590 | mobile: 813.917.1656 | email:**timspano@balfourbeattyus.com**
Balfour Beatty Construction | www.balfourbeattyus.com
306 Meeting St., Suite 300, Charleston, SC 29401
Connect with us: Facebook | Twitter | YouTube | LinkedIn
<image008.jpg>

From: Mike Mcgregor [mailto:MMcGregor@pasco-inc.com]
Sent: Friday, March 09, 2018 8:55 AM
To: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>; Derek Goodpaster <dgoodpaster@pasco-inc.com>
Cc: Todd Jeffers <TJeffers@pasco-inc.com>; Spano, Tim <timspano@Balfourbeattyus.com>; Simonton, David <dsimonton@balfourbeattyus.com>
Subject: Re: Manpower - HMS

Nick-

I'm making some phone calls I'll get back with you shortly.

Sent from my Verizon, Samsung Galaxy smartphone

-------- Original message --------
From: "Starcevic, Nicholas" <NStarcevic@Balfourbeattyus.com>
Date: 3/9/18 8:48 AM (GMT-05:00)
To: Derek Goodpaster <dgoodpaster@pasco-inc.com>, Mike Mcgregor <MMcGregor@pasco-inc.com>
Cc: Todd Jeffers <TJeffers@pasco-inc.com>, "Spano, Tim" <timspano@Balfourbeattyus.com>, "Simonton, David" <dsimonton@balfourbeattyus.com>
Subject: Manpower - HMS

PASCO – There are only 3 people onsite. Why did we decrease and where are the other 7?

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn
<image009.jpg><image010.jpg><image011.jpg>

This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit http://www.mimecast.com

This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit http://www.mimecast.com

This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit http://www.mimecast.com

This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit http://www.mimecast.com

This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit http://www.mimecast.com

Message

From: Starcevic, Nicholas [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=65F22BA2C54F4D0F843FDB8B842E3115-NICHOLAS ST]
Sent: 4/6/2018 10:15:10 AM
To: Mike Mcgregor [MMcGregor@pasco-inc.com]
CC: Spano, Tim [timspano@Balfourbeattyus.com]; Todd Jeffers [TJeffers@pasco-inc.com]; Dale, Marty [mdale@balfourbeattyus.com]
Subject: RE: L2 chute room
Attachments: Hotel at Marion Square - Correspondence:00122 - Schedule Update 10/17/17

See the last one distributed. All scheduling adjustments are done in the pull planning meetings.

Nick Starcevic | Project Manager
mobile: 704-361-3265 | email: NStarcevic@Balfourbeattyus.com
Balfour Beatty Construction | 306 Meeting St. Suite 300, Charleston, SC 29401

www.balfourbeattyus.com | Facebook | Twitter | YouTube | LinkedIn

Balfour Beatty
Construction

Build to Last
Lean. Expert. Trusted. Safe.

From: Mike Mcgregor [mailto:MMcGregor@pasco-inc.com]
Sent: Friday, April 06, 2018 11:08 AM
To: Starcevic, Nicholas <NStarcevic@Balfourbeattyus.com>
Cc: Spano, Tim <timspano@Balfourbeattyus.com>; Todd Jeffers <TJeffers@pasco-inc.com>; Dale, Marty <mdale@balfourbeattyus.com>
Subject: Re: L2 chute room

Can you please send me the schedule.

Sent from my Verizon, Samsung Galaxy smartphone

-------- Original message --------
From: "Starcevic, Nicholas" <NStarcevic@Balfourbeattyus.com>
Date: 4/6/18 11:01 AM (GMT-05:00)
To: Mike Mcgregor <MMcGregor@pasco-inc.com>
Cc: "Spano, Tim" <timspano@Balfourbeattyus.com>, Todd Jeffers <TJeffers@pasco-inc.com>, "Dale, Marty" <mdale@balfourbeattyus.com>
Subject: Re: L2 chute room

PASCO is once again not working on a Friday and Saturday. This continues to be a problem and a major concern, and a commitment that you made to have pressure on the building this week. When is PASCO going to step up and put forth the necessary manpower to maintain the schedule?

Nick Starcevic | Balfour Beatty Construction
Cell: 704.361.3265

On Apr 6, 2018, at 10:55 AM, Mike Mcgregor <MMcGregor@pasco-inc.com> wrote:

Nick-

We are not going to start testing half way through a day. No one is onsite. We will start testing first thing Monday morning.

Sent from my Verizon, Samsung Galaxy smartphone

-------- Original message --------
From: "Starcevic, Nicholas" <NStarcevic@Balfourbeattyus.com>
Date: 4/6/18 10:52 AM (GMT-05:00)
To: Mike Mcgregor <MMcGregor@pasco-inc.com>
Cc: "Spano, Tim" <timspano@Balfourbeattyus.com>, Todd Jeffers <TJeffers@pasco-inc.com>, "Dale, Marty" <mdale@balfourbeattyus.com>
Subject: Re: L2 chute room

Ok, do it today.

Thanks,

Nick Starcevic
direct: 704.361.3265 | email:nstarcevic@balfourbeattyus.com
Sent from my iPad

On Apr 6, 2018, at 10:51 AM, Mike Mcgregor <MMcGregor@pasco-inc.com> wrote:

Portals, 844 change order, finishing the basement.

Sent from my Verizon, Samsung Galaxy smartphone

-------- Original message --------
From: "Starcevic, Nicholas" <NStarcevic@Balfourbeattyus.com>
Date: 4/6/18 10:38 AM (GMT-05:00)
To: Mike Mcgregor <MMcGregor@pasco-inc.com>
Cc: "Spano, Tim" <timspano@Balfourbeattyus.com>, Todd Jeffers <TJeffers@pasco-inc.com>, "Dale, Marty" <mdale@balfourbeattyus.com>
Subject: Re: L2 chute room

It was supposed to happen yesterday. What's the deal?

Nick Starcevic | Balfour Beatty Construction
Cell: 704.361.3265

On Apr 6, 2018, at 10:36 AM, Mike Mcgregor <MMcGregor@pasco-inc.com> wrote:

Not at this time.

Sent from my Verizon, Samsung Galaxy smartphone

-------- Original message --------
From: "Spano, Tim" <timspano@Balfourbeattyus.com>
Date: 4/6/18 10:29 AM (GMT-05:00)
To: Mike Mcgregor <MMcGregor@pasco-inc.com>
Cc: Todd Jeffers <TJeffers@pasco-inc.com>, "Dale, Marty" <mdale@balfourbeattyus.com>, "Starcevic, Nicholas" <NStarcevic@Balfourbeattyus.com>
Subject: Re: L2 chute room

Is air on the system to hold over the weekend and get water on it Next week before test?

Sent from my iPhone

On Apr 6, 2018, at 10:10 AM, Mike Mcgregor <MMcGregor@pasco-inc.com> wrote:

Pasco is not onsite. We will remove our material. Monday.

Sent from my Verizon, Samsung Galaxy smartphone

-------- Original message --------
From: "Spano, Tim" <timspano@Balfourbeattyus.com>
Date: 4/6/18 9:54 AM (GMT-05:00)
To: Mike Mcgregor <MMcGregor@pasco-inc.com>, twilliams@precisionwalls.com
Cc: "Dale, Marty" <mdale@balfourbeattyus.com>
Subject: L2 chute room

Clear materials and Baker today or I have to tomorrow. Painting tomorrow before epoxy next week.

This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit http://www.mimecast.com

This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit http://www.mimecast.com

This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit http://www.mimecast.com

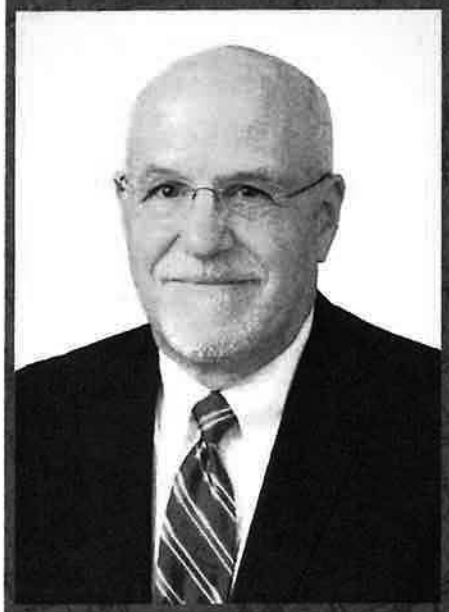
This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit http://www.mimecast.com

This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit http://www.mimecast.com

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

DEFENDANT LIBRARY ASSOCIATES, LLC'S

TRIAL EXHIBIT #92



MARK BOE, P.E., PSP
Vice President
Telephone: 267-464-1532
E-mail: mboe@cpmiteam.com

DEFENDANT'S EXHIBIT
92
for ID
PENGAD 800-631-6989

1777 Sentry Parkway West
VEVA Building 11, Suite 300
Blue Bell, PA 19422
Tel: 267-464-0500
Fax: 267-464-0400

Capital Project Management, Inc.

EDUCATION & PROFESSIONAL CERTIFICATIONS

Professional Engineer: Pennsylvania, Washington
AACEI, Planning & Scheduling Professional
University of Illinois, M.S., Civil Engineering/Construction Management
U.S. Coast Guard Academy, B.S., Civil Engineering

EXPERIENCE

Mark has more than 30 years of experience in planning, scheduling, design, engineering, construction, and project controls. He specializes in the use of critical path method (CPM) scheduling techniques for the analysis of intricate delay and disruption claims. Mark has evaluated disputes over a wide variety of domestic and overseas construction, including medical facilities, prisons, and aircraft in the U.S., and high-profile projects in Singapore, Mumbai, and the Republic of Palau. Mark has assisted countless clients, including government agencies, contractors, private owners, and national law firms. Prior to his consulting work, he spent 10 years managing construction for the U.S. Coast Guard. Mark has spoken on construction scheduling topics as part of a national series of educational webinars, and has presented at the Construction SuperConference and to the CMAA and other professional organizations.

AREAS OF EXPERTISE

Contract Dispute Resolution ▪ CPM Schedule and delay analysis ▪ Labor productivity analysis ▪ Damages resulting from delay and disruption ▪ CPM Scheduling

PROFESSIONAL AFFILIATIONS

Society of American Military Engineers
Association for the Advancement of Cost Engineering International
Construction Management Association of America
American Bar Association

PUBLICATIONS

"Can a Subcontractor have a Critical Path Delay when the GC does not?", Cost Engineering, December 2011.
"Identifying Concurrent Delay", CPMI Cause & Effect Newsletter, Winter 2004

RECENT SEMINARS/SPEAKING ENGAGEMENTS

"Construction Delay, Acceleration and Inefficiency Claims," Federal Publications Seminars, Arlington, VA, November 2016.
"Resolving and Avoiding Schedule and Delay Issues," American Conference Institute, New York, February 2015.
"Construction Delay, Acceleration and Inefficiency Claims," Federal Publications Seminars, Las Vegas, NV, October 2013.
"Using Your Expert Like an Expert," Construction SuperConference, San Francisco, CA, December 2012.
"Choosing a Delay Analysis Methodology," Construction Management Association of America (CMAA) Webinar, May 2009.
"Deceptive Schedules," PMI College of Scheduling Conference, May 2009.
"Minimizing Expert Witness Mistakes" and "Deceptive Schedules," PMI College of Scheduling Conference, May 2009.
"Early Completion Schedules," Construction Management Association of America (CMAA), January 2009.
"Development of a Recovery Schedule," Construction Management Association of America (CMAA), June 2008.
"Total Float—Longest Path? Mastering the New Scheduling Software Technology," Construction SuperConference, San Francisco, CA, December 2006.
"Baseline Scheduling I and II," Construction Management Association of America (CMAA), August & October 2006.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

MARK BOE, P.E., PSP

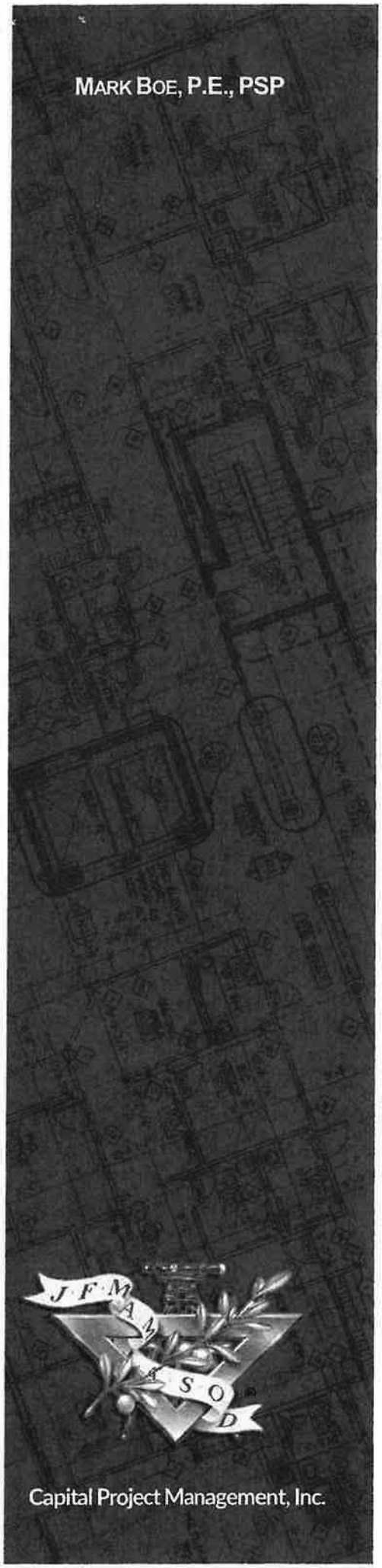
"One Slice in Time—Two Competing Perspectives for Analyzing Project Delay, Contractor and Construction Manager," PMI College of Scheduling Conference, April 2006.
"One Slice in Time—Two Competing Perspectives for Analyzing Project Delay, Contractor and Construction Manager," Construction SuperConference, San Francisco, CA, December 2005.
"Construction Scheduling Revealed—Preparing & Assessing Construction Schedules and Delay Claims," Construction Management Association of America (CMAA), May & September 2006; April, June & October 2005.
"Change Orders," Lorman Education Services, Pennsylvania, May 2005.
"Tricks, Traps and Ploys used in Construction Scheduling," Lorman Education Services, Maryland, September 2004.

SELECTED PROJECT EXPERIENCE

- 2019-2020, National Institutes of Health, Building 10 E-Wing Laboratory Building Renovation, Bethesda, Maryland
- 2019, US Army, Air National Guard Fire Station, Gabreski Air Force Base, New York
- 2019, Bowman Properties, Mixed Use Facility, Philadelphia, Pennsylvania
- 2019 – 2020, Library Associates, Luxury Hotel Building, Charleston, South Carolina
- 2019 – 2020, US State Department, New Consulate Compound, Hermosillo, Mexico
- 2019-2020, Wohlsen Construction, Delaware State University Dormitory, Dover, Delaware
- 2019-2020, Virginia Department of Transportation, Richmond, Virginia
- 2019-2020, US State Department, Madrid Embassy Security Upgrades, Madrid, Spain
- 2017-2020, US State Department, New Housing Compound, Port-au-Prince, Haiti
- 2018-2019, Court Appointed Expert, Ben Gurion Airport construction, Tel Aviv, Israel
- 2018-2019, US Department of Justice, Logistics Center, Jariyan al Batnah, Qatar
- 2018-2019, CID Group, Springfield High School construction, Springfield, PA
- 2018-2019, Private Contractor, Manufacturing Facility, Iowa
- 2018-2019, Glosten Naval Architects, Alaska State Ferry new construction, Seattle, WA
- 2018, US Army, Housing Renovation, Riyadh, Saudi Arabia
- 2018, JJID Construction, Bridge Construction project, West Fallowfield, PA
- 2018, Pottsgrove School District, High School Addition and Alteration, Pottstown, PA
- 2017-2019, Allied Painting, Bridge project, Delaware River, PA/NJ
- 2017-2018, Allied Painting, Bridge project, Burlington, NJ
- 2017-2018, National Institutes for Health, Building 10 F-Wing Lab renovation, Bethesda, MD
- 2017, US State Department, Embassy Construction, Port-au-Prince, Haiti
- 2016-2018, New York City Department of Law, Sludge Barge Construction, New York, NY
- 2016-2020, US State Department, New Consulate Complex, Dhahran, Saudi Arabia
- 2016-2019, US Department of Justice, Jetty construction, El Paso, TX
- 2016-2020, US Army, Saudi Air National Guard School Construction, Riyadh, Saudi Arabia
- 2016-2018, US Department of Justice, Pier construction, Bremerton, WA

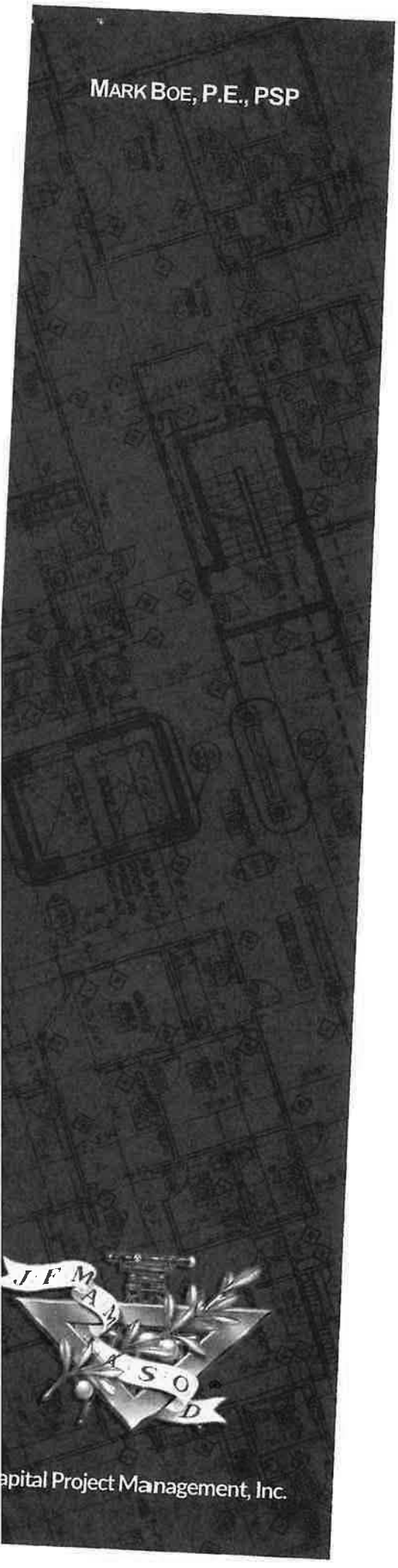
Capital Project Management, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108



- 2016-2019, US Department of Justice, Family Housing construction, Malmstrom AFB, Montana
- 2015-2017 Kone Elevators, Central Artery/Big Dig project, Boston, MA
- 2015-2018, Consigli Construction, Williams College Library, Williamstown, MA
- 2015-2016, Andron Construction, Psychiatric Facility, Rockland County, NY
- 2015-2016, US Department of Justice, Afghan Kandak Construction, Parwan Province, Afghanistan
- 2014-2015, Alaska Marine Highway, Ferry Renovation, Seward, AK
- 2014-2015, Consigli Construction, Temple Construction, Boston, MA
- 2013, O&G Industries, Heating CoGen Plant, Amherst, MA
- 2012-2014, New York City Dept. of Sanitation, Garage Facility, New York, NY
- 2012-2013, Hensel Phelps, State Correctional Facility, Benner Township, PA
- 2012, US Department of State, New Consulate Complex, Surabaya, Indonesia
- 2012, Virginia Department of Transportation, Confidential project
- 2011-2013, Allied Building Company, Laboratory Building, Bethlehem, PA
- 2011-2015, US Department of State, New Consulate Construction, Mumbai, India
- 2011-2014, US Department of State, New Embassy Annex construction, Abuja, Nigeria
- 2010-2014, National Institutes of Health, Clinical Research Lab renovation, Bethesda, MD
- 2010-2011, National Institutes of Health, Nuclear Research Center construction, Bethesda, MD
- 2010-2012, National Institutes of Health, Integrated Research Facility, Frederick, MD
- 2009-2013, National Institutes of Health, Bio-medical Research building, Baltimore, MD
- 2009, US Department of State, Housing renovation, Hong Kong
- 2009, Kelly Systems Inc., University Housing project, Bloomsburg, PA
- 2009-2010, US Department of Justice, Security Investigation Contract claim, Washington, DC
- 2009, Battaglia Electrical, Condominium Project, Wilmington, DE
- 2008-2009, US State Department, Embassy Project, Geneva
- 2008-2009, DJ Keating, Neumann College Gymnasium, Aston, PA
- 2008-2009, CG Schmidt, Hospital project, Milwaukee, WI
- 2007-2015, US Coast Guard, 123-ft. Patrol Boat, Washington, DC
- 2007, Shoemaker Co., 801 Market Street Project, Philadelphia, PA
- 2007, Marinette Shipbuilding, New Ferry Project, New York, NY
- 2007, Dept. of Homeland Security, Training Campus construction, Harpers Ferry, WV
- 2007, DJ Keating, George Washington Carver High School, Philadelphia, PA
- 2006-2008, Driscoll-Intech, Condominium Project, Philadelphia, PA
- 2006-2014, US Coast Guard, Deepwater Program, Washington, DC
- 2006-2007, US Coast Guard, National Security Cutter, Washington, DC
- 2006-2007, Archer-Western, ATF National Headquarters, Washington, DC
- 2006, DJ Keating, H.A. Brown Elementary School, Philadelphia, PA
- 2006, DJ Keating, Roxborough High School, Philadelphia, PA
- 2006, DJ Keating, School of the Future, Philadelphia, PA
- 2006, DJ Keating, Audenreid High School, Philadelphia, PA
- 2006, DJ Keating, Strawberry Mansion School, Philadelphia, PA

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108



- 2005-2007, J. Ray McDermott, Offshore Platform, Gulf of Mexico
- 2005, LF Driscoll, Piazza Building E, Philadelphia, PA
- 2005, Skanska USA, Biologic Products Manufacturing Facility, Boston, MA
- 2005-2007, Philadelphia Industrial Development Corporation, Steam Utility Rates, Philadelphia, PA
- 2005-2010, Shoemaker Co., Philadelphia University revitalization project, Philadelphia, PA
- 2005, Henderson Corp., Pharmaceutical lab building, Radnor, PA
- 2004-2005, Department of Justice, Navy Consolidation project, Philadelphia, PA
- 2004-2005, Shoemaker Co., Apartment project, Philadelphia, PA
- 2004-2005, Department of Justice, Jetty Construction, Matagorda, TX
- 2004-2005, Southern Steel, State Correctional Institution, Fayette, PA
- 2004, Department of Justice, Warehouse and Hangar heating renovation, Fort Lewis, WA
- 2004-2005, Shoemaker Co., Condominium project, Philadelphia, PA
- 2004, Department of Justice, Hurricane Protection Levee, Plaquemine Parish, LA
- 2004, Telesource, Adult Correctional Facility, Saipan, CNMI
- 2003-2004, Department of Justice, Radar Relocation, Cape Canaveral, FL
- 2003-2005, C. Pyramid Enterprises, C-17 Hangar, McGuire Air Force Base, NJ
- 2003-2005, Department of Justice, Compact Road, Palau
- 2003-2004, RM Shoemaker, Ellipse Dormitory, Princeton, NJ
- 2003, Department of Justice, Bachelor Enlisted Quarters, Nellis Air Force Base, NV
- 2003, Parkland School District, High School construction, Allentown, PA
- 2003, U.S. State Department, Embassy rehabilitation, Sao Paulo, Brazil
- 2002-2003, DMJM, Airport Terminal Construction, Edmonton, Alberta, Canada
- 2002-2003, U.S. Department of Justice, Shipyard renewal/rehabilitation, Quincy, MA
- 2002-2003, U.S. Department of Justice, Office rehabilitation, Norfolk, VA
- 2002, Fru-Con Constructors, Powder Coating Facility, NC
- 2002-2005, L.F. Driscoll Construction, St. James Place Apartments, Philadelphia, PA
- 2002-2003,U.S. Department of Justice, Piping Replacement, West Point, NY
- 2001-2003, U.S. Department of Justice, VA Cancer Research Unit, Portland, OR
- 2001-2002, U.S. Department of Justice, Weldon Springs Ordnance Works cleanup, Weldon Springs, MO
- 2001, U.S. Department of Justice, Kachess Dam, Snoqualmie, WA
- 2000-2002, U.S. Department of Justice, F-14B/A Weapons Systems Trainer, Oceana, VA
- 2000-2002 U.S. Dept of Justice, Roman ECD v. US, Barracks building, Fallon, NV
- 2000-2001, John E. Day Associates, Inc.: KinderCare Facility, Alexandria, VA
- 2000, Boston Properties: NIH Clinical Research Center, Bethesda, MD
- 2000-2003, C. Pyramid Enterprises: Visiting Student Quarters, McGuire AFB, NJ
- 1999-2002, Luzerne County Convention Center Authority: Northeast Pennsylvania Arena, Wilkes-Barre, PA

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

MARK BOE, P.E., PSP

- 1999-2001, U.S. Department of Justice, Federal Bureau of Prisons: Metropolitan Detention Center, Brooklyn, NY
- 1999-2001, R.M. Shoemaker Co.: Renaissance Corporate Park, King of Prussia, PA
- 1999-2003, U.S. Department of Justice: Naval Training Center, Great Lakes, IL
- 1999-2001, R.M. Shoemaker Co.: Philadelphia Geriatric Center, Horsham, PA
- 1999-2001, R.M. Shoemaker Co.: 5 Tower Bridge & 8 Tower Bridge, Conshohocken, PA
- 1999-2004, C. Pyramid Enterprises: Navy Medical Facility, Key West, FL
- 1999-2000, R.M. Shoemaker Co.: Lankenau Hospital, Wynnewood, PA
- 1999-2000, Department of Veterans Affairs: Animal Research Facility, Seattle, WA
- 1998-2000, R.M. Shoemaker Co.: Southwarks Housing Complex, Philadelphia, PA
- 1997-98, U.S. Department of Justice: U.S. Air Force AC-130U Gunship
- 1997-2003, U.S. Department of Justice: U.S. Embassy, Singapore
- 1997-98, U.S. Department of Justice: CDC Mycobacteriology Laboratory, Atlanta, GA
- 1997-98, Barton Mallow: Temple/Shriners Hospital, Philadelphia, PA
- 1996-99, R.M. Shoemaker Co.: Byrne Federal Courthouse and Green Federal Office Building Complex, Philadelphia, PA
- 1996-99, R.M. Shoemaker Co.: Delaware County Prison, PA
- 1996-99, R.M. Shoemaker Co.: NJ Transit Hamilton Transit Complex, Hamilton Township, NJ
- 1996-97, George Hyman Construction Company: 30th Street AMTRAK Station, Philadelphia, PA
- 1995-98, U.S. Department of Justice: T-AGOS Ocean Surveillance Vessel, Morgan City, LA
- 1995-98, U.S. Department of Justice: VA Medical Center, Albuquerque, NM
- 1995-97, R.M. Shoemaker Co.: VA Computer and Benefits Processing Center, Philadelphia, PA
- 1995-96, Research Cottrell, Illinois Power Electrostatic Precipitator,
- 1994-99, U.S. Department of Justice: YTT Torpedo Test Vessel, Morgan City, LA
- 1993-95, R. M. Shoemaker Company: Criminal Justice Center, Philadelphia, PA
- 1993-98, Pennsylvania Convention Center Authority: Convention Center, Philadelphia, PA
- 1993-94, U.S. General Services Administration: Federal Courthouse, Pittsburgh, PA
- 1992-93, U. S. Department of Transportation, Maritime Administration: Cape Ann and Cape Avinof Overhaul
- 1990-94, U.S. Department of Justice: VA Medical Center, Portland, OR
- 1990-92, Philadelphia International Airport: International Terminal, Philadelphia, PA
- 1989-90, Illinois Tollway Authority: I-84 & I-294 (North-South Tollway Extension), Oak Brook, IL
- 1989-90, Grumman: JOINT STARS Program, Melbourne, FL
- 1989-90, Department of Veterans Affairs: Medical Center, Palo Alto, CA
- 1979-89, U.S. Coast Guard: Various construction projects throughout California, Alaska, Washington and Oregon, two yard periods on 210' CG Cutter

EXPERT TESTIMONY

Capital Project Management, Inc.

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

MARK BOE, P.E., PSP

Nova Tutor Saliba v. United States, No. 15-885C, U.S. Court of Federal Claims (Deposition, Dec. 2017 and Feb. 2018; Testimony Sept. 2018)

Ultimate Concrete v. United States, No. 14-549C, U.S. Court of Federal Claims (Deposition, Feb. 2018)

James Talcott Construction v. United States, No. 14-427C, U.S. Court of Federal Claims (Testimony, Dec 2017)

Bollinger Shipyards Lockport, LLC v. The City of New York, Department of Environmental Protection, No. 650316/2015, Supreme Court of the State of New York County, New York. (Deposition)

Perini-Kiewit-Cashman, J.V. v. Montgomery Kone, Inc., and Federal Insurance Company, No. 13-0763-BLS1, Commonwealth of Massachusetts, Superior Court Department of the Trial Court, Suffolk, SS. (Deposition)

Seward Ship's Drydock, Inc. v. Alaska Marine Highway System, Alaska Office of Administrative Hearings No. 14-1305-CON. (Deposition)

Yates DesBuild J.V. v. U.S. Department of State, 3350 Civilian Board of Contract Appeals.

Shoemaker Construction Company v. Samuel Grossi & Sons, Inc., AAA Arbitration.

Daewoo Engineering & Construction Co., Ltd v. United States, No. 02-1914C U.S. Court of Federal Claims (Deposition and Testimony)

Weeks Marine, Inc. v. United States, No. 02-205C Court of Federal Claims (Deposition)

RLI v. United States, No. 01-172C, U.S. Court of Federal Claims (Deposition)

Dillingham Embassy Constructors v. United States, No. 98-393C, U.S. Court of Federal Claims (Deposition)

John E. Day Associates, Inc. v. KinderCare, AAA Arbitration

Morganti v. United States, No. 97-744C, U.S. Court of Federal Claims (Deposition and Testimony)

McDermott v. United States, Nos. 93-9C, 93-161C, 93-370C, and 95-72C, U.S. Court of Federal Claims (Deposition)

P.J. Dick vs. GSA, GSA Board of Contract Appeals

Capital Project Management, Inc.

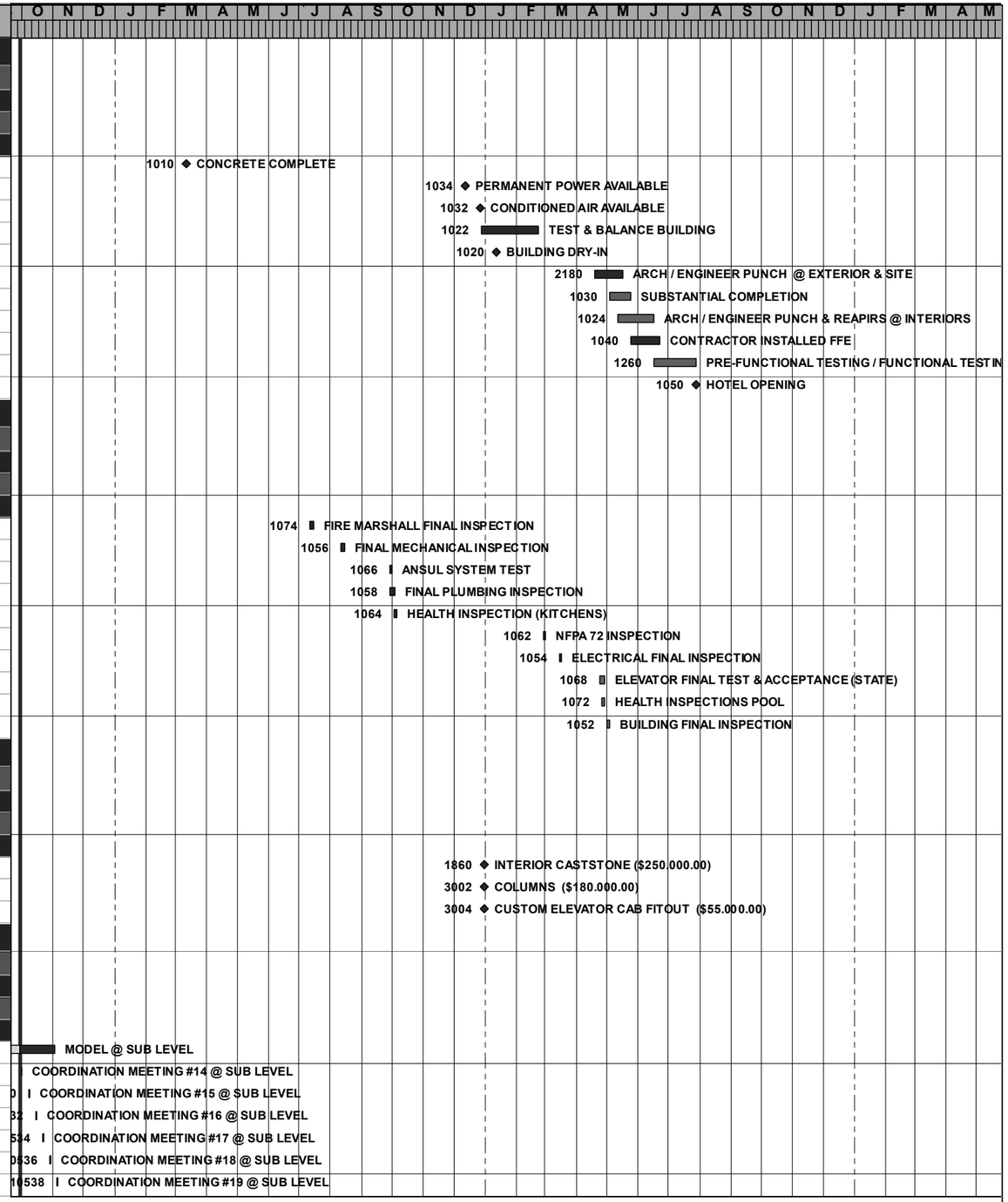
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

DEFENDANT LIBRARY ASSOCIATES, LLC'S

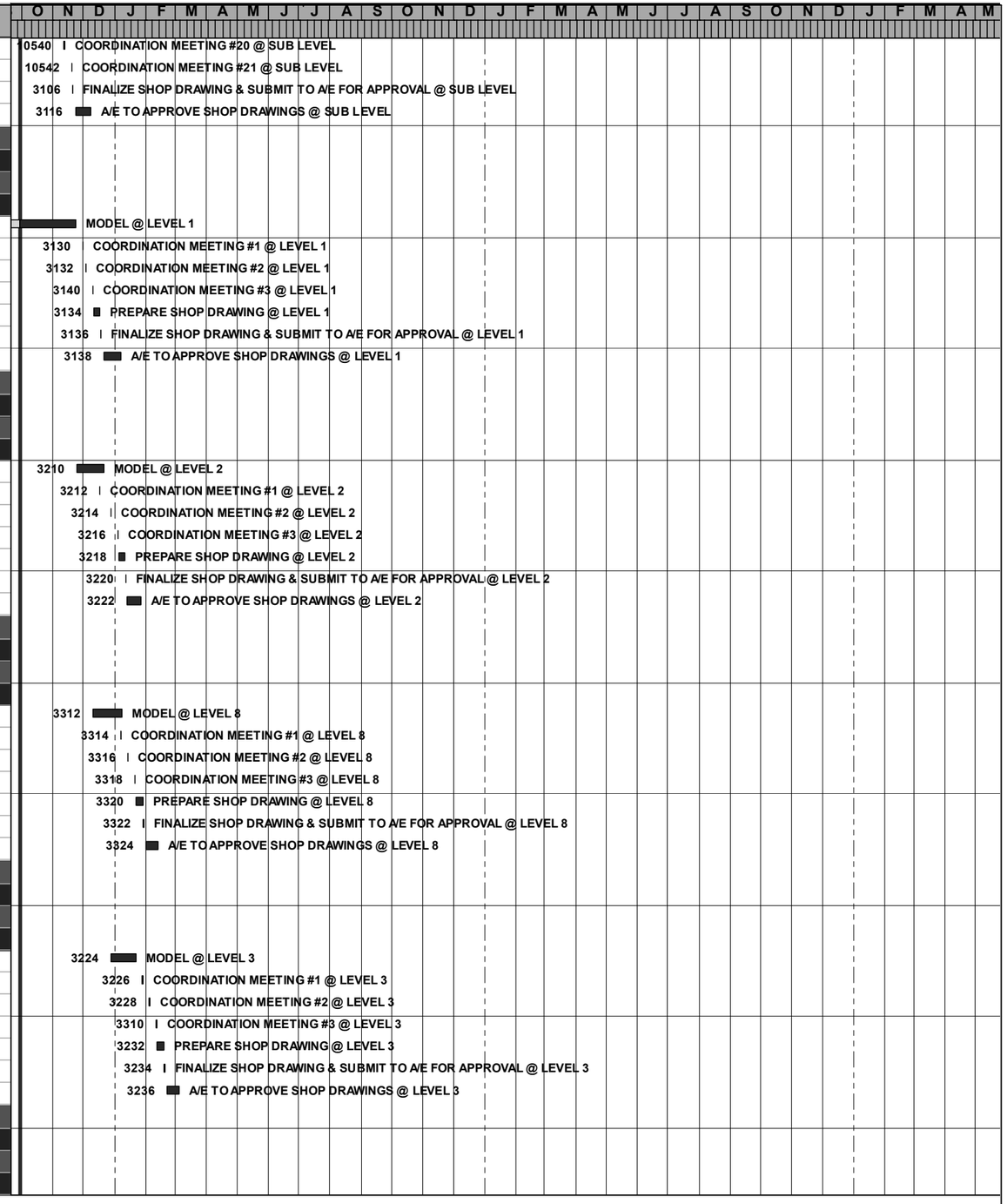
TRIAL EXHIBIT #93

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
	MILESTONES	351	11-Mar-16	28-Jul-17	0	
		351	11-Mar-16	28-Jul-17	0	
		351	11-Mar-16	28-Jul-17	0	
		351	11-Mar-16	28-Jul-17	0	
		351	11-Mar-16	28-Jul-17	0	
1010	CONCRETE COMPLETE	0		11-Mar-16*	0	
1034	PERMANENT POWER AVAILABLE	0		12-Dec-16	80	
1032	CONDITIONED AIR AVAILABLE	0		27-Dec-16	80	
1022	TEST & BALANCE BUILDING	40	28-Dec-16	22-Feb-17	80	
1020	BUILDING DRY-IN	0		11-Jan-17*	20	
2180	ARCH / ENGINEER PUNCH @ EXTERIOR & SITE	20	19-Apr-17	16-May-17	22	
1030	SUBSTANTIAL COMPLETION	15	04-May-17	24-May-17	15	
1024	ARCH / ENGINEER PUNCH & REAPIRS @ INTERIORS	25	12-May-17	16-Jun-17	0	
1040	CONTRACTOR INSTALLED FFE	20	25-May-17	22-Jun-17	25	
1260	PRE-FUNCTIONAL TESTING / FUNCTIONAL TESTING / COMMISSIONING	30	16-Jun-17	28-Jul-17	0	
1050	HOTEL OPENING	0		28-Jul-17*	0	7/28/17
	INSPECTIONS	208	11-Jul-16	03-May-17	15	
		208	11-Jul-16	03-May-17	15	
		208	11-Jul-16	03-May-17	15	
		208	11-Jul-16	03-May-17	15	
		208	11-Jul-16	03-May-17	15	
1074	FIRE MARSHALL FINAL INSPECTION	5	11-Jul-16	15-Jul-16	215	
1056	FINAL MECHANICAL INSPECTION	3	11-Aug-16	15-Aug-16	194	
1066	ANSUL SYSTEM TEST	2	29-Sep-16	30-Sep-16	158	
1058	FINAL PLUMBING INSPECTION	3	29-Sep-16	03-Oct-16	160	
1064	HEALTH INSPECTION (KITCHENS)	3	03-Oct-16	05-Oct-16	158	
1062	NFPA 72 INSPECTION	3	27-Feb-17	01-Mar-17	57	
1054	ELECTRICAL FINAL INSPECTION	3	15-Mar-17	17-Mar-17	45	
1068	ELEVATOR FINAL TEST & ACCEPTANCE (STATE)	5	24-Apr-17	28-Apr-17	15	
1072	HEALTH INSPECTIONS POOL	3	26-Apr-17	28-Apr-17	15	
1052	BUILDING FINAL INSPECTION	3	01-May-17	03-May-17	15	
	ALLOWANCES	0	30-Dec-16	30-Dec-16	147	
		0	30-Dec-16	30-Dec-16	147	
		0	30-Dec-16	30-Dec-16	147	
		0	30-Dec-16	30-Dec-16	147	
		0	30-Dec-16	30-Dec-16	147	
1860	INTERIOR CASTSTONE ($250.000.00)	0		30-Dec-16*	147	12/30/16
3002	COLUMNS ($180.000.00)	0		30-Dec-16*	147	12/30/16
3004	CUSTOM ELEVATOR CAB FITOUT ($55.000.00)	0		30-Dec-16*	147	12/30/16
	MEPS COORDINATION PROCESS	224	18-Jun-15 A	06-May-16	230	
	LOWER LEVEL	120	18-Jun-15 A	08-Dec-15	127	
		120	18-Jun-15 A	08-Dec-15	127	
		120	18-Jun-15 A	08-Dec-15	127	
		120	18-Jun-15 A	08-Dec-15	127	
3014	MODEL @ SUB LEVEL	95	18-Jun-15 A	02-Nov-15	122	6/18-10/30
10528	COORDINATION MEETING #14 @ SUB LEVEL	1	01-Oct-15	01-Oct-15	122	9/30SF
10530	COORDINATION MEETING #15 @ SUB LEVEL	1	08-Oct-15	08-Oct-15	122	10/7SF
10532	COORDINATION MEETING #16 @ SUB LEVEL	1	15-Oct-15	15-Oct-15	122	10/14SF
10534	COORDINATION MEETING #17 @ SUB LEVEL	1	22-Oct-15	22-Oct-15	122	10/21SF
10536	COORDINATION MEETING #18 @ SUB LEVEL	1	29-Oct-15	29-Oct-15	122	10/28SF
10538	COORDINATION MEETING #19 @ SUB LEVEL	1	05-Nov-15	05-Nov-15	122	11/4SF



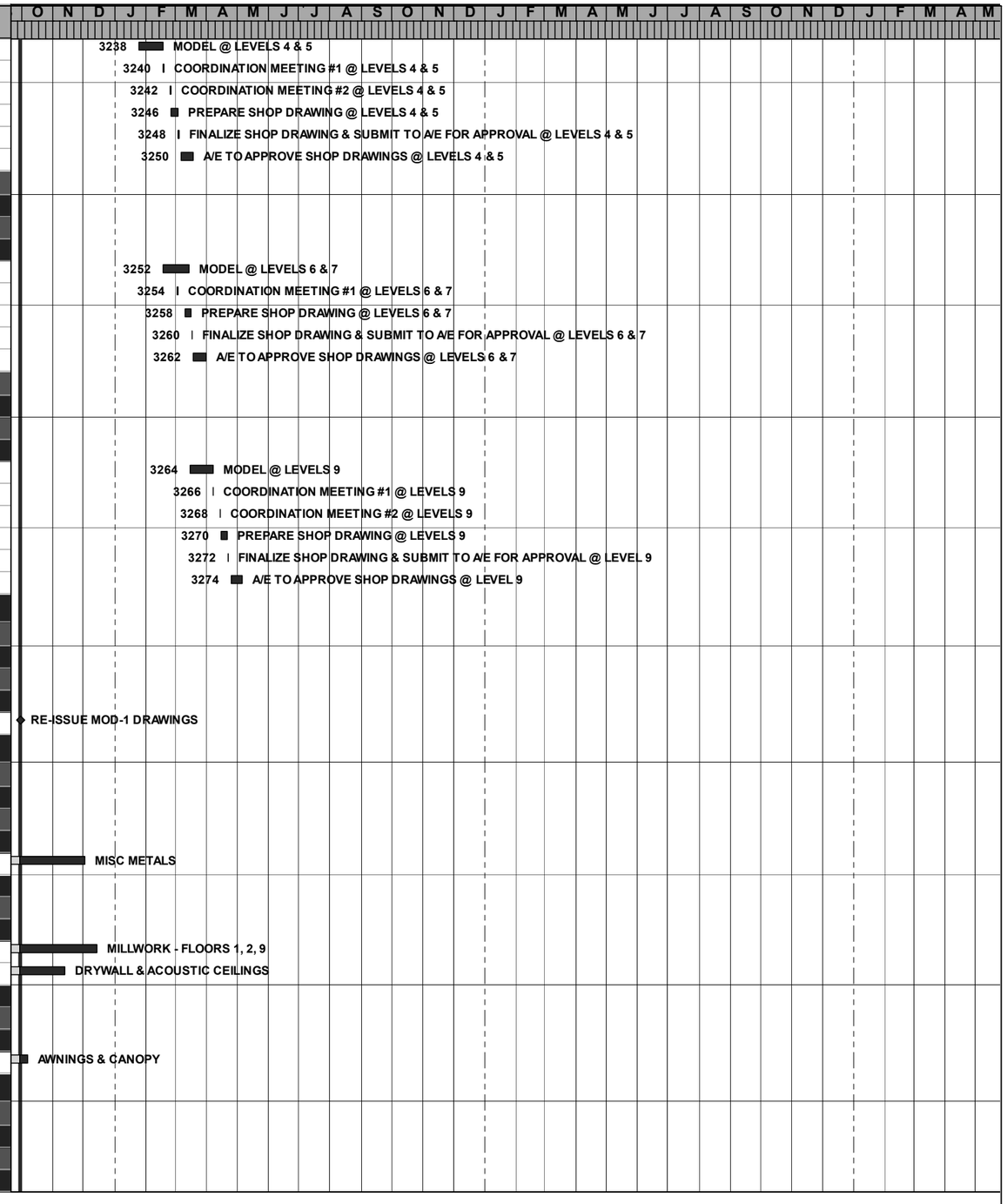
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
10540	COORDINATION MEETING #20 @ SUB LEVEL	1	12-Nov-15	12-Nov-15	122	11/11SF
10542	COORDINATION MEETING #21 @ SUB LEVEL	1	19-Nov-15	19-Nov-15	122	11/18SF
3106	FINALIZE SHOP DRAWING & SUBMIT TO A/E FOR APPROVAL @ SUB LEVEL	1	20-Nov-15	20-Nov-15	127	
3116	A/E TO APPROVE SHOP DRAWINGS @ SUB LEVEL	10	23-Nov-15	08-Dec-15	127	
LEVEL 1		121	14-Jul-15 A	07-Jan-16	241	
		121	14-Jul-15 A	07-Jan-16	241	
		121	14-Jul-15 A	07-Jan-16	241	
		121	14-Jul-15 A	07-Jan-16	241	
3128	MODEL @ LEVEL 1	94	14-Jul-15 A	23-Nov-15	125	7/13-11/20
3130	COORDINATION MEETING #1 @ LEVEL 1	1	30-Nov-15	30-Nov-15	122	11/25SF
3132	COORDINATION MEETING #2 @ LEVEL 1	1	03-Dec-15	03-Dec-15	122	
3140	COORDINATION MEETING #3 @ LEVEL 1	1	10-Dec-15	10-Dec-15	122	
3134	PREPARE SHOP DRAWING @ LEVEL 1	5	11-Dec-15	17-Dec-15	241	
3136	FINALIZE SHOP DRAWING & SUBMIT TO A/E FOR APPROVAL @ LEVEL 1	1	18-Dec-15	18-Dec-15	241	
3138	A/E TO APPROVE SHOP DRAWINGS @ LEVEL 1	10	21-Dec-15	07-Jan-16	241	
LEVEL 2		40	24-Nov-15	26-Jan-16	303	
		40	24-Nov-15	26-Jan-16	303	
		40	24-Nov-15	26-Jan-16	303	
		40	24-Nov-15	26-Jan-16	303	
3210	MODEL @ LEVEL 2	18	24-Nov-15	21-Dec-15	127	
3212	COORDINATION MEETING #1 @ LEVEL 2	1	17-Dec-15	17-Dec-15	122	
3214	COORDINATION MEETING #2 @ LEVEL 2	1	28-Dec-15	28-Dec-15	122	
3216	COORDINATION MEETING #3 @ LEVEL 2	1	04-Jan-16	04-Jan-16	122	
3218	PREPARE SHOP DRAWING @ LEVEL 2	5	05-Jan-16	11-Jan-16	122	
3220	FINALIZE SHOP DRAWING & SUBMIT TO A/E FOR APPROVAL @ LEVEL 2	1	12-Jan-16	12-Jan-16	122	
3222	A/E TO APPROVE SHOP DRAWINGS @ LEVEL 2	10	13-Jan-16	26-Jan-16	303	
LEVEL 8		43	10-Dec-15	12-Feb-16	228	
		43	10-Dec-15	12-Feb-16	228	
		43	10-Dec-15	12-Feb-16	228	
		43	10-Dec-15	12-Feb-16	228	
3312	MODEL @ LEVEL 8	18	10-Dec-15	08-Jan-16	187	
3314	COORDINATION MEETING #1 @ LEVEL 8	1	07-Jan-16	07-Jan-16	194	
3316	COORDINATION MEETING #2 @ LEVEL 8	1	14-Jan-16	14-Jan-16	194	
3318	COORDINATION MEETING #3 @ LEVEL 8	1	21-Jan-16	21-Jan-16	194	
3320	PREPARE SHOP DRAWING @ LEVEL 8	5	22-Jan-16	28-Jan-16	228	
3322	FINALIZE SHOP DRAWING & SUBMIT TO A/E FOR APPROVAL @ LEVEL 8	1	29-Jan-16	29-Jan-16	228	
3324	A/E TO APPROVE SHOP DRAWINGS @ LEVEL 8	10	01-Feb-16	12-Feb-16	228	
LEVEL 3		48	28-Dec-15	04-Mar-16	213	
		48	28-Dec-15	04-Mar-16	213	
		48	28-Dec-15	04-Mar-16	213	
		48	28-Dec-15	04-Mar-16	213	
3224	MODEL @ LEVEL 3	18	28-Dec-15	22-Jan-16	187	
3226	COORDINATION MEETING #1 @ LEVEL 3	1	28-Jan-16	28-Jan-16	194	
3228	COORDINATION MEETING #2 @ LEVEL 3	1	04-Feb-16	04-Feb-16	194	
3310	COORDINATION MEETING #3 @ LEVEL 3	1	11-Feb-16	11-Feb-16	194	
3232	PREPARE SHOP DRAWING @ LEVEL 3	5	12-Feb-16	18-Feb-16	213	
3234	FINALIZE SHOP DRAWING & SUBMIT TO A/E FOR APPROVAL @ LEVEL 3	1	19-Feb-16	19-Feb-16	213	
3236	A/E TO APPROVE SHOP DRAWINGS @ LEVEL 3	10	22-Feb-16	04-Mar-16	213	
LEVEL 4 & 5		40	25-Jan-16	18-Mar-16	203	
		40	25-Jan-16	18-Mar-16	203	
		40	25-Jan-16	18-Mar-16	203	
		40	25-Jan-16	18-Mar-16	203	



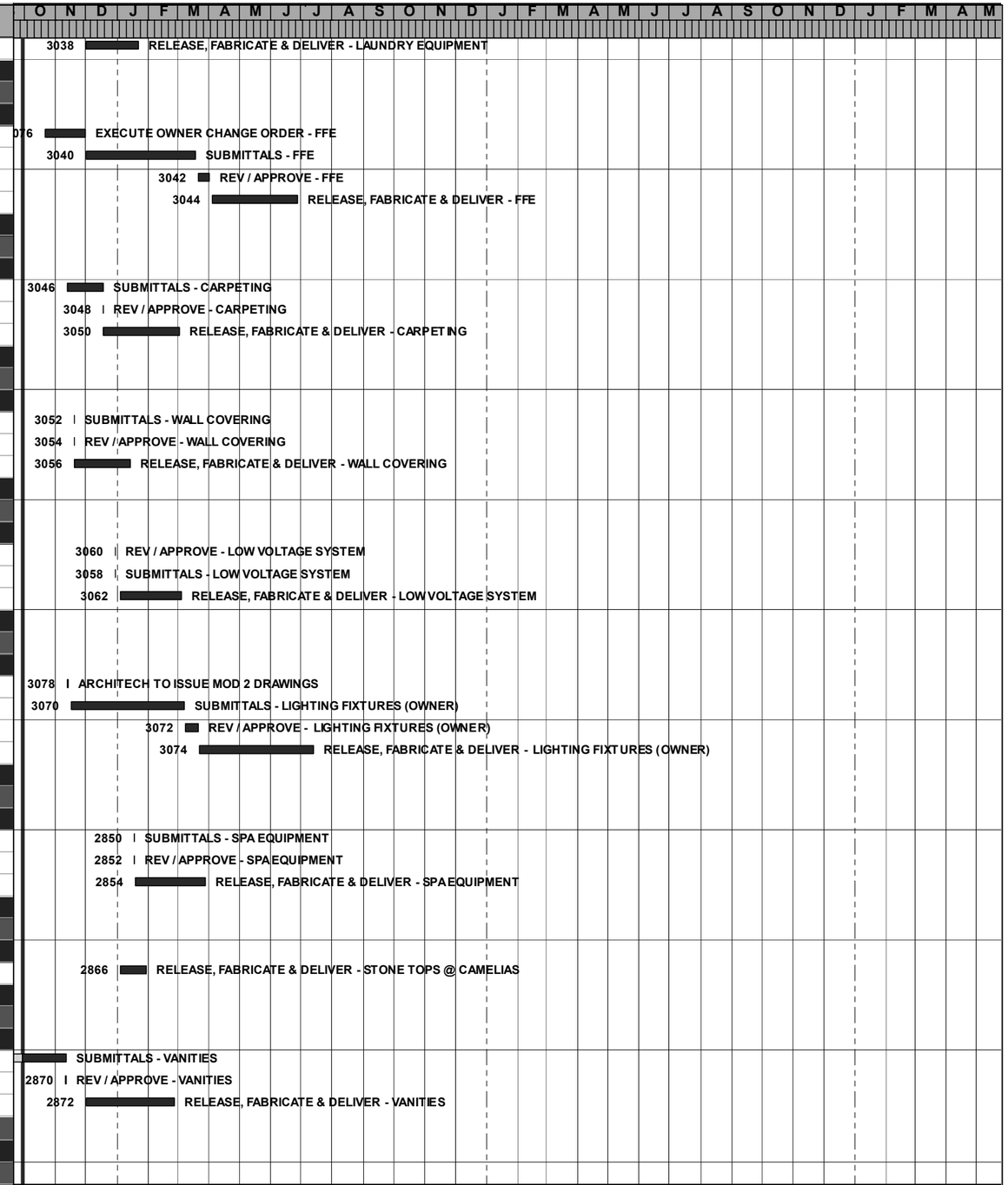
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
3238	MODEL @ LEVELS 4 & 5	18	25-Jan-16	17-Feb-16	187	
3240	COORDINATION MEETING #1 @ LEVELS 4 & 5	1	18-Feb-16	18-Feb-16	194	
3242	COORDINATION MEETING #2 @ LEVELS 4 & 5	1	25-Feb-16	25-Feb-16	194	
3246	PREPARE SHOP DRAWING @ LEVELS 4 & 5	5	26-Feb-16	03-Mar-16	203	
3248	FINALIZE SHOP DRAWING & SUBMIT TO A/E FOR APPROVAL @ LEVELS 4 & 5	1	04-Mar-16	04-Mar-16	203	
3250	A/E TO APPROVE SHOP DRAWINGS @ LEVELS 4 & 5	10	07-Mar-16	18-Mar-16	203	
LEVEL 6 & 7		31	18-Feb-16	31-Mar-16	194	
		31	18-Feb-16	31-Mar-16	194	
		31	18-Feb-16	31-Mar-16	194	
		31	18-Feb-16	31-Mar-16	194	
3252	MODEL @ LEVELS 6 & 7	18	18-Feb-16	14-Mar-16	187	
3254	COORDINATION MEETING #1 @ LEVELS 6 & 7	1	03-Mar-16	03-Mar-16	194	
3258	PREPARE SHOP DRAWING @ LEVELS 6 & 7	5	10-Mar-16	16-Mar-16	194	
3260	FINALIZE SHOP DRAWING & SUBMIT TO A/E FOR APPROVAL @ LEVELS 6 & 7	1	17-Mar-16	17-Mar-16	194	
3262	A/E TO APPROVE SHOP DRAWINGS @ LEVELS 6 & 7	10	18-Mar-16	31-Mar-16	194	
LEVEL 9		39	15-Mar-16	06-May-16	187	
		39	15-Mar-16	06-May-16	187	
		39	15-Mar-16	06-May-16	187	
		39	15-Mar-16	06-May-16	187	
3264	MODEL @ LEVELS 9	18	15-Mar-16	07-Apr-16	187	
3266	COORDINATION MEETING #1 @ LEVELS 9	1	07-Apr-16	07-Apr-16	187	
3268	COORDINATION MEETING #2 @ LEVELS 9	1	14-Apr-16	14-Apr-16	187	
3270	PREPARE SHOP DRAWING @ LEVELS 9	5	15-Apr-16	21-Apr-16	187	
3272	FINALIZE SHOP DRAWING & SUBMIT TO A/E FOR APPROVAL @ LEVEL 9	1	22-Apr-16	22-Apr-16	187	
3274	A/E TO APPROVE SHOP DRAWINGS @ LEVEL 9	10	25-Apr-16	06-May-16	187	
PRECONSTRUCTION		0	30-Sep-15	30-Sep-15	122	
		0	30-Sep-15	30-Sep-15	122	
		0	30-Sep-15	30-Sep-15	122	
		0	30-Sep-15	30-Sep-15	122	
		0	30-Sep-15	30-Sep-15	122	
1920	RE-ISSUE MOD-1 DRAWINGS	0		30-Sep-15*	122	9/30SF
BUYOUT PACKAGES		183	26-Mar-15 A	14-Dec-15	411	
SUBCONTRACTOR PROCUREMENT		183	26-Mar-15 A	14-Dec-15	411	
PHASE 2		171	01-Apr-15 A	02-Dec-15	241	
		171	01-Apr-15 A	02-Dec-15	241	
		171	01-Apr-15 A	02-Dec-15	241	
1530	MISC METALS	170	01-Apr-15 A	02-Dec-15	241	12/1F
PHASE 3		183	26-Mar-15 A	14-Dec-15	411	
		183	26-Mar-15 A	14-Dec-15	411	
		183	26-Mar-15 A	14-Dec-15	411	
10544	MILLWORK - FLOORS 1, 2, 9	182	26-Mar-15 A	14-Dec-15	411	12/11F
1680	DRYWALL & ACOUSTIC CEILINGS	125	18-May-15 A	12-Nov-15	273	11/11F
PHASE 5		70	29-Jun-15 A	06-Oct-15	458	
		70	29-Jun-15 A	06-Oct-15	458	
		70	29-Jun-15 A	06-Oct-15	458	
1810	AWNINGS & CANOPY	70	29-Jun-15 A	06-Oct-15	458	10/5F
PROCUREMENT		290	20-May-15 A	13-Jul-16	265	
OWNER FURISHED		208	16-Sep-15 A	13-Jul-16	206	
LAUNDRY EQUIPMENT		35	01-Dec-15	22-Jan-16	327	
		35	01-Dec-15	22-Jan-16	327	
		35	01-Dec-15	22-Jan-16	327	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

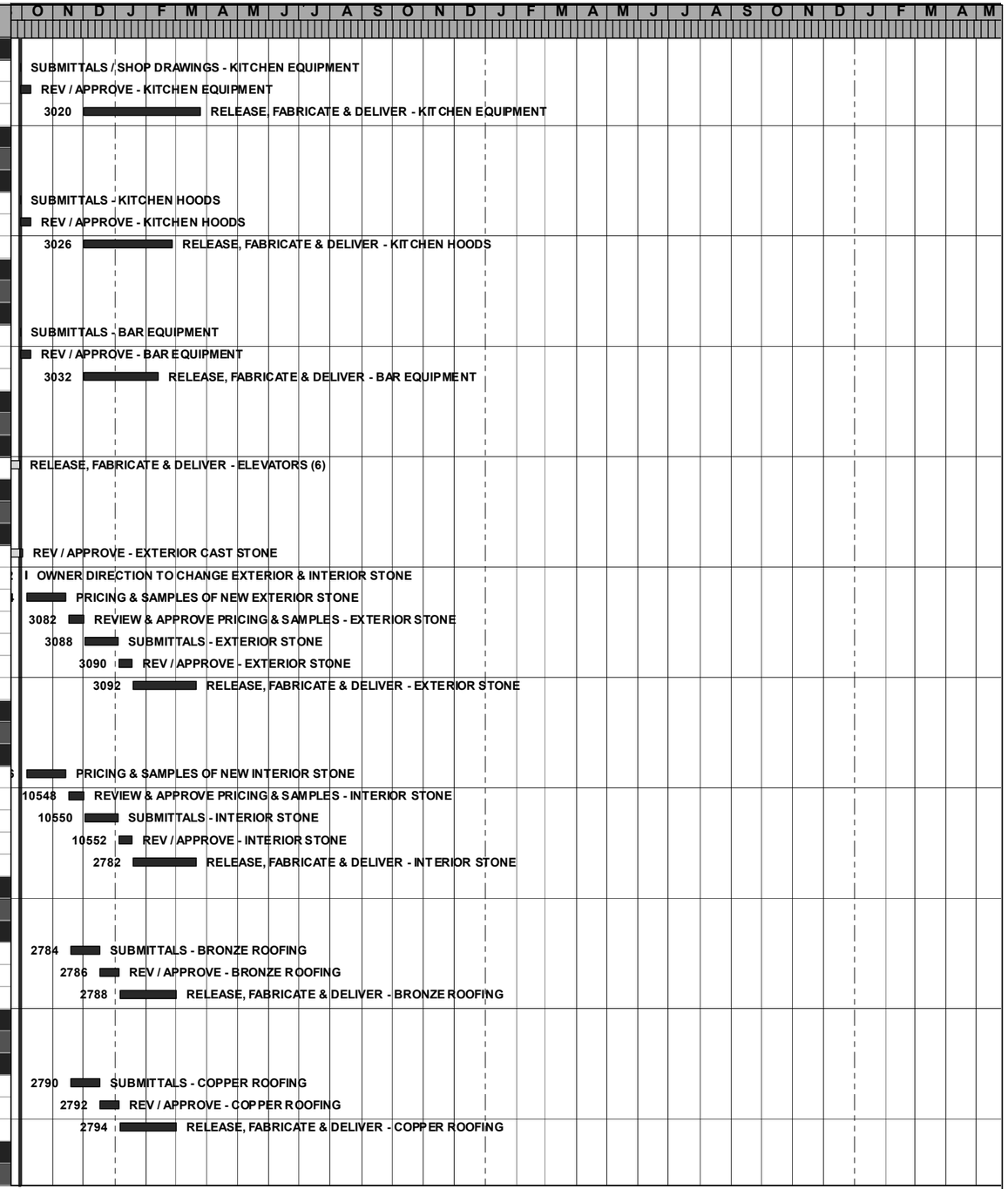
TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
3038	RELEASE, FABRICATE & DELIVER - LAUNDRY EQUIPMENT	35	01-Dec-15*	22-Jan-16	327	
FFE FOR INSTALL BY BBC		171	22-Oct-15	27-Jun-16	194	
		171	22-Oct-15	27-Jun-16	194	
		171	22-Oct-15	27-Jun-16	194	
3076	EXECUTE OWNER CHANGE ORDER - FFE	26	22-Oct-15*	30-Nov-15	194	10/22-11/30
3040	SUBMITTALS - FFE	75	01-Dec-15	18-Mar-16	194	12/1S
3042	REV / APPROVE - FFE	10	21-Mar-16	01-Apr-16	194	
3044	RELEASE, FABRICATE & DELIVER - FFE	60	04-Apr-16	27-Jun-16	194	
CARPETING		73	13-Nov-15	02-Mar-16	266	
		73	13-Nov-15	02-Mar-16	266	
		73	13-Nov-15	02-Mar-16	266	
3046	SUBMITTALS - CARPETING	24	13-Nov-15*	18-Dec-15	266	11/13-12/18 NB
3048	REV / APPROVE - CARPETING	1	18-Dec-15	18-Dec-15	266	12/18SF
3050	RELEASE, FABRICATE & DELIVER - CARPETING	50	18-Dec-15	02-Mar-16	266	
WALL COVERING		35	19-Nov-15	14-Jan-16	290	
		35	19-Nov-15	14-Jan-16	290	
		35	19-Nov-15	14-Jan-16	290	
3052	SUBMITTALS - WALL COVERING	1	19-Nov-15*	19-Nov-15	290	11/13-12/18 NB
3054	REV / APPROVE - WALL COVERING	1	19-Nov-15	19-Nov-15	290	12/18SF
3056	RELEASE, FABRICATE & DELIVER - WALL COVERING	35	19-Nov-15	14-Jan-16	290	
LOW VOLTAGE SYSTEM		46	30-Dec-15	04-Mar-16	221	
		46	30-Dec-15	04-Mar-16	221	
		46	30-Dec-15	04-Mar-16	221	
3060	REV / APPROVE - LOW VOLTAGE SYSTEM	1	30-Dec-15	30-Dec-15	221	12/30SF
3058	SUBMITTALS - LOW VOLTAGE SYSTEM	1	30-Dec-15*	30-Dec-15	221	12/30SF
3062	RELEASE, FABRICATE & DELIVER - LOW VOLTAGE SYSTEM	45	04-Jan-16	04-Mar-16	221	
LIGHT FIXTURE SUPPLIED BY OWNER		166	13-Nov-15	13-Jul-16	152	
		166	13-Nov-15	13-Jul-16	152	
		166	13-Nov-15	13-Jul-16	152	
3078	ARCHITECH TO ISSUE MOD 2 DRAWINGS	1	13-Nov-15*	13-Nov-15	152	
3070	SUBMITTALS - LIGHTING FIXTURES (OWNER)	75	16-Nov-15	07-Mar-16	152	NB
3072	REV / APPROVE - LIGHTING FIXTURES (OWNER)	10	08-Mar-16	21-Mar-16	152	
3074	RELEASE, FABRICATE & DELIVER - LIGHTING FIXTURES (OWNER)	80	22-Mar-16	13-Jul-16	152	
SPA EQUIPMENT		51	18-Jan-16	28-Mar-16	261	
		51	18-Jan-16	28-Mar-16	261	
		51	18-Jan-16	28-Mar-16	261	
2850	SUBMITTALS - SPA EQUIPMENT	1	18-Jan-16*	18-Jan-16	261	1/18SF NB
2852	REV / APPROVE - SPA EQUIPMENT	1	18-Jan-16	18-Jan-16	261	
2854	RELEASE, FABRICATE & DELIVER - SPA EQUIPMENT	50	19-Jan-16	28-Mar-16	261	
STONE TOPS		20	04-Jan-16	29-Jan-16	277	
		20	04-Jan-16	29-Jan-16	277	
		20	04-Jan-16	29-Jan-16	277	
2866	RELEASE, FABRICATE & DELIVER - STONE TOPS @ CAMELIAS	20	04-Jan-16*	29-Jan-16	277	
VANITIES		112	16-Sep-15 A	26-Feb-16	275	
		112	16-Sep-15 A	26-Feb-16	275	
		112	16-Sep-15 A	26-Feb-16	275	
2868	SUBMITTALS - VANITIES	41	16-Sep-15 A	11-Nov-15	287	11/10F
2870	REV / APPROVE - VANITIES	1	11-Nov-15	11-Nov-15	287	11/10SF
2872	RELEASE, FABRICATE & DELIVER - VANITIES	60	01-Dec-15*	26-Feb-16	275	CONFIRM LEAD
ARCHITECTURAL		209	07-Jul-15 A	03-May-16	314	
KITCHEN EQUIPMENT		122	30-Sep-15	25-Mar-16	254	
		122	30-Sep-15	25-Mar-16	254	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

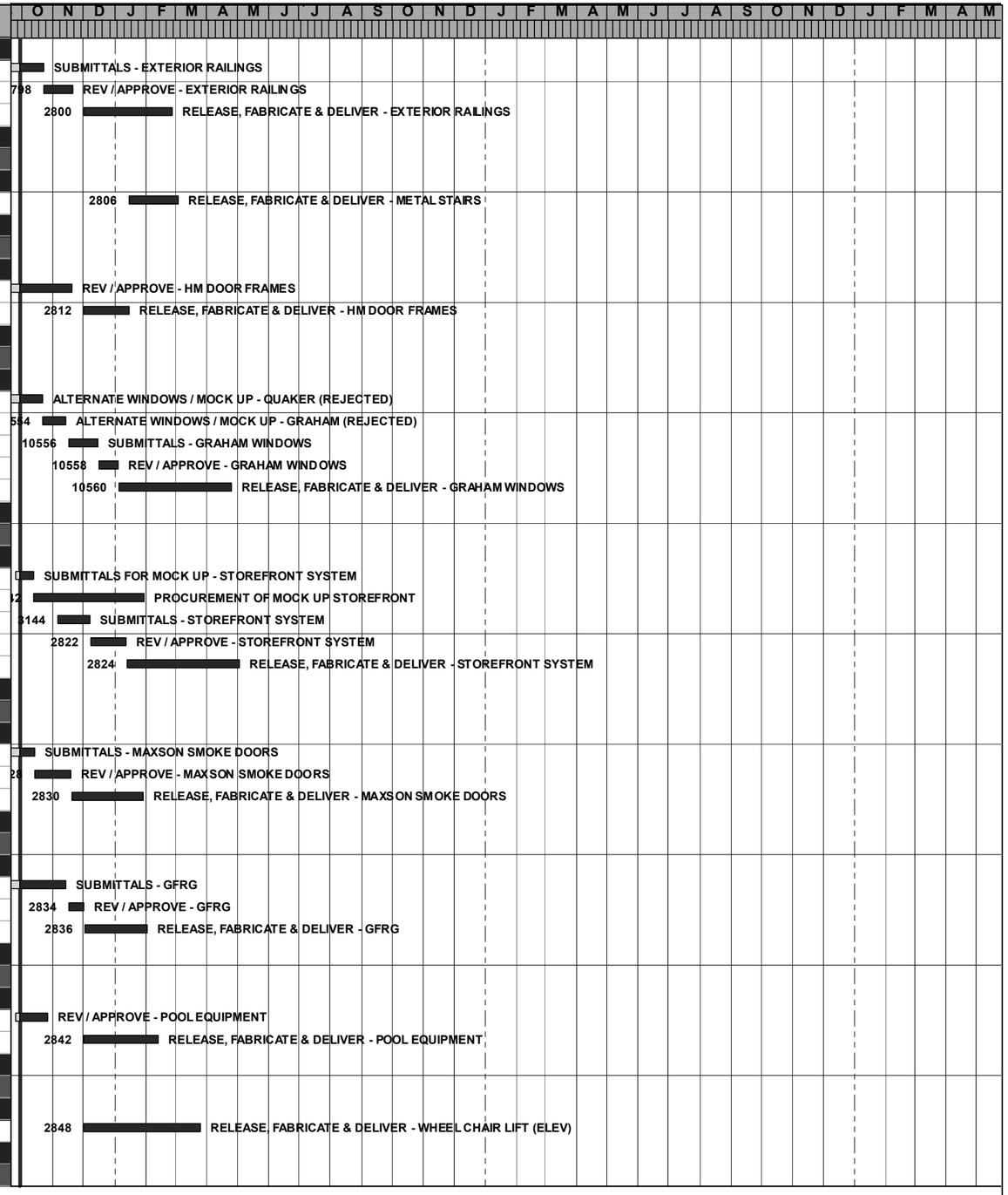
R - 16929

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
		122	30-Sep-15	25-Mar-16	254	
3016	SUBMITTALS / SHOP DRAWINGS - KITCHEN EQUIPMENT	1	30-Sep-15*	30-Sep-15	289	9/30SF
3018	REV / APPROVE - KITCHEN EQUIPMENT	8	30-Sep-15	09-Oct-15	289	9/30-10/9F
3020	RELEASE, FABRICATE & DELIVER - KITCHEN EQUIPMENT	80	01-Dec-15*	25-Mar-16	254	
KITCHEN HOODS		102	30-Sep-15	26-Feb-16	293	
		102	30-Sep-15	26-Feb-16	293	
		102	30-Sep-15	26-Feb-16	293	
3022	SUBMITTALS - KITCHEN HOODS	1	30-Sep-15*	30-Sep-15	328	9/30SF
3024	REV / APPROVE - KITCHEN HOODS	8	30-Sep-15	09-Oct-15	328	9/30-10/9F
3026	RELEASE, FABRICATE & DELIVER - KITCHEN HOODS	60	01-Dec-15*	26-Feb-16	293	
BAR EQUIPMENT		92	30-Sep-15	12-Feb-16	258	
		92	30-Sep-15	12-Feb-16	258	
		92	30-Sep-15	12-Feb-16	258	
3028	SUBMITTALS - BAR EQUIPMENT	1	30-Sep-15*	30-Sep-15	293	9/30SF
3030	REV / APPROVE - BAR EQUIPMENT	8	30-Sep-15	09-Oct-15	293	9/30-10/9F
3032	RELEASE, FABRICATE & DELIVER - BAR EQUIPMENT	50	01-Dec-15*	12-Feb-16	258	CONFIRM 2504 SUCC
ELEVATORS (6)		60	07-Jul-15 A	29-Sep-15	200	
		60	07-Jul-15 A	29-Sep-15	200	
		60	07-Jul-15 A	29-Sep-15	200	
2770	RELEASE, FABRICATE & DELIVER - ELEVATORS (6)	60	07-Jul-15 A	29-Sep-15	200	
EXTERIOR STONE		151	13-Aug-15 A	21-Mar-16	147	
		151	13-Aug-15 A	21-Mar-16	147	
		151	13-Aug-15 A	21-Mar-16	147	
2774	REV / APPROVE - EXTERIOR CAST STONE	36	13-Aug-15 A	02-Oct-15	147	8/12-10/1
2862	OWNER DIRECTION TO CHANGE EXTERIOR & INTERIOR STONE	1	05-Oct-15	05-Oct-15	147	10/2SF
2864	PRICING & SAMPLES OF NEW EXTERIOR STONE	29	06-Oct-15	13-Nov-15	147	10/5-11/12
3082	REVIEW & APPROVE PRICING & SAMPLES - EXTERIOR STONE	10	16-Nov-15	01-Dec-15	147	
3088	SUBMITTALS - EXTERIOR STONE	20	02-Dec-15	04-Jan-16	147	
3090	REV / APPROVE - EXTERIOR STONE	10	05-Jan-16	18-Jan-16	147	
3092	RELEASE, FABRICATE & DELIVER - EXTERIOR STONE	45	19-Jan-16	21-Mar-16	147	CONFIRM DUR
INTERIOR STONE		114	06-Oct-15	21-Mar-16	191	
		114	06-Oct-15	21-Mar-16	191	
		114	06-Oct-15	21-Mar-16	191	
10546	PRICING & SAMPLES OF NEW INTERIOR STONE	29	06-Oct-15	13-Nov-15	191	10/5-11/12
10548	REVIEW & APPROVE PRICING & SAMPLES - INTERIOR STONE	10	16-Nov-15	01-Dec-15	191	
10550	SUBMITTALS - INTERIOR STONE	20	02-Dec-15	04-Jan-16	191	
10552	REV / APPROVE - INTERIOR STONE	10	05-Jan-16	18-Jan-16	191	
2782	RELEASE, FABRICATE & DELIVER - INTERIOR STONE	45	19-Jan-16	21-Mar-16	191	CONFIRM DUR
BRONZE ROOFING		69	18-Nov-15	01-Mar-16	298	
		69	18-Nov-15	01-Mar-16	298	
		69	18-Nov-15	01-Mar-16	298	
2784	SUBMITTALS - BRONZE ROOFING	20	18-Nov-15*	17-Dec-15	234	11/18S NB
2786	REV / APPROVE - BRONZE ROOFING	10	17-Dec-15	05-Jan-16	298	11/4-11/18F
2788	RELEASE, FABRICATE & DELIVER - BRONZE ROOFING	40	06-Jan-16	01-Mar-16	298	
COPPER ROOFING		69	18-Nov-15	01-Mar-16	234	
		69	18-Nov-15	01-Mar-16	234	
		69	18-Nov-15	01-Mar-16	234	
2790	SUBMITTALS - COPPER ROOFING	20	18-Nov-15	17-Dec-15	234	11/18S NB
2792	REV / APPROVE - COPPER ROOFING	10	17-Dec-15	05-Jan-16	234	
2794	RELEASE, FABRICATE & DELIVER - COPPER ROOFING	40	06-Jan-16	01-Mar-16	234	
EXTERIOR RAILINGS		125	27-Aug-15 A	26-Feb-16	237	
		125	27-Aug-15 A	26-Feb-16	237	



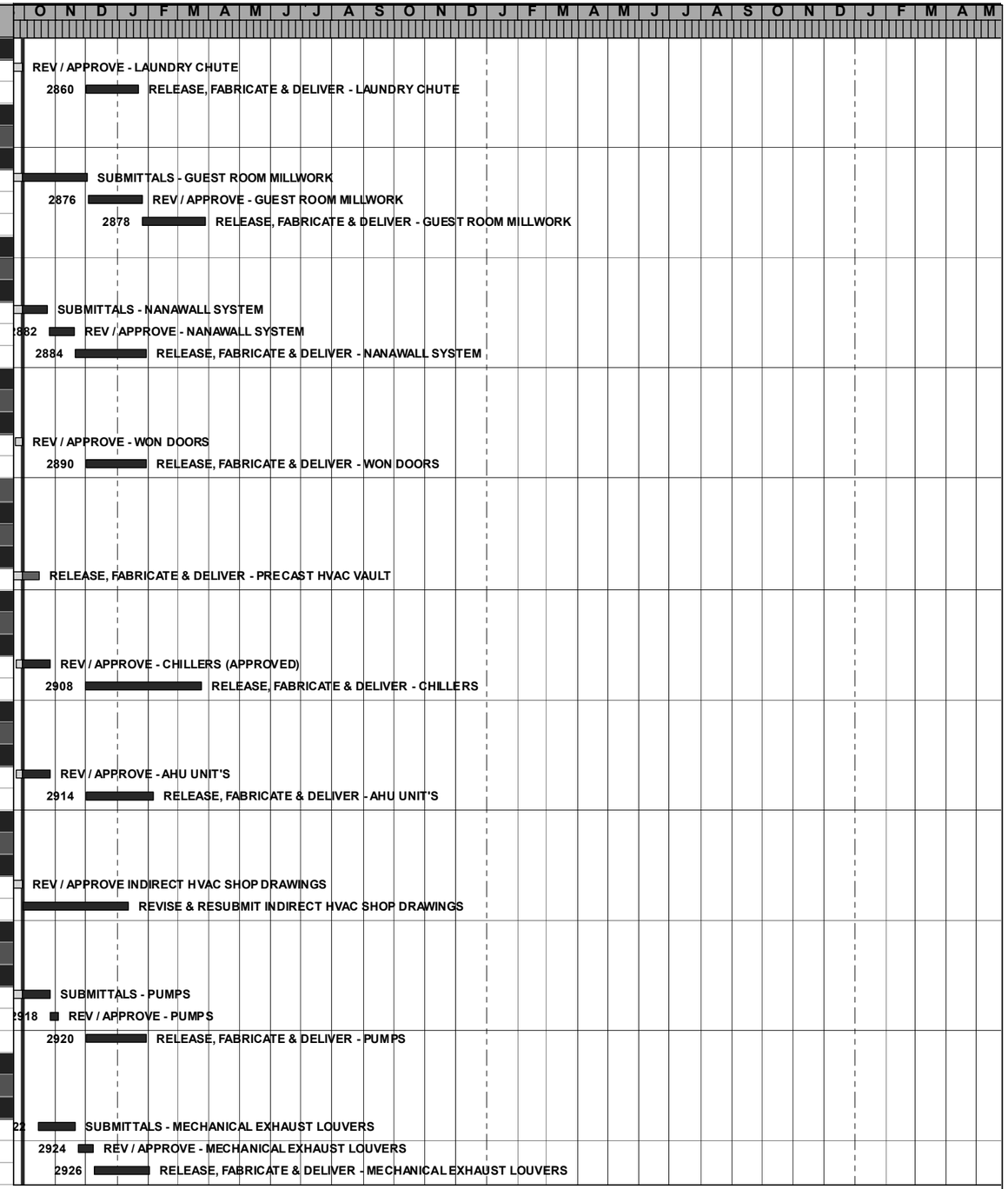
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
		125	27-Aug-15 A	26-Feb-16	237	
2796	SUBMITTALS - EXTERIOR RAILINGS	40	27-Aug-15 A	22-Oct-15	241	8/26-10/21
2798	REV / APPROVE - EXTERIOR RAILINGS	21	23-Oct-15	20-Nov-15	241	10/22-11/18
2800	RELEASE, FABRICATE & DELIVER - EXTERIOR RAILINGS	60	01-Dec-15*	26-Feb-16	237	CONFIRM DUR
METAL STAIRS		35	15-Jan-16	03-Mar-16	282	
		35	15-Jan-16	03-Mar-16	282	
		35	15-Jan-16	03-Mar-16	282	
2806	RELEASE, FABRICATE & DELIVER - METAL STAIRS	35	15-Jan-16*	03-Mar-16	282	
HOLLOW METAL DOOR FRAMES		95	27-Aug-15 A	15-Jan-16	78	
		95	27-Aug-15 A	15-Jan-16	78	
		95	27-Aug-15 A	15-Jan-16	78	
2810	REV / APPROVE - HM DOOR FRAMES	60	27-Aug-15 A	19-Nov-15	83	8/26-11/18
2812	RELEASE, FABRICATE & DELIVER - HM DOOR FRAMES	30	01-Dec-15*	15-Jan-16	78	
PEERLESS WINDOWS		154	15-Sep-15 A	25-Apr-16	115	
		154	15-Sep-15 A	25-Apr-16	115	
		154	15-Sep-15 A	25-Apr-16	115	
3098	ALTERNATE WINDOWS / MOCK UP - QUAKER (REJECTED)	27	15-Sep-15 A	21-Oct-15	115	9/14-10/20
10554	ALTERNATE WINDOWS / MOCK UP - GRAHAM (REJECTED)	17	22-Oct-15	13-Nov-15	115	10/21-11/12
10556	SUBMITTALS - GRAHAM WINDOWS	20	16-Nov-15	15-Dec-15	115	
10558	REV / APPROVE - GRAHAM WINDOWS	10	16-Dec-15	04-Jan-16	115	
10560	RELEASE, FABRICATE & DELIVER - GRAHAM WINDOWS	80	05-Jan-16	25-Apr-16	115	CONFIRM DUR
HOPES STOREFRONT		152	25-Sep-15 A	03-May-16	314	
		152	25-Sep-15 A	03-May-16	314	
		152	25-Sep-15 A	03-May-16	314	
2820	SUBMITTALS FOR MOCK UP - STOREFRONT SYSTEM	12	25-Sep-15 A	12-Oct-15	63	9/25-10/12F NB
3142	PROCUREMENT OF MOCK UP STOREFRONT	73	13-Oct-15	29-Jan-16	63	10/13-1/29
3144	SUBMITTALS - STOREFRONT SYSTEM	20	06-Nov-15*	07-Dec-15	314	11/6-12/7
2822	REV / APPROVE - STOREFRONT SYSTEM	22	08-Dec-15	12-Jan-16	314	12/8S
2824	RELEASE, FABRICATE & DELIVER - STOREFRONT SYSTEM	80	13-Jan-16	03-May-16	314	NEED INSTALL
MAXSON SMOKE DOORS		101	01-Sep-15 A	28-Jan-16	234	
		101	01-Sep-15 A	28-Jan-16	234	
		101	01-Sep-15 A	28-Jan-16	234	
2826	SUBMITTALS - MAXSON SMOKE DOORS	30	01-Sep-15 A	13-Oct-15	234	9/1-10/13
2828	REV / APPROVE - MAXSON SMOKE DOORS	26	14-Oct-15	18-Nov-15	234	10/14-11/18
2830	RELEASE, FABRICATE & DELIVER - MAXSON SMOKE DOORS	45	19-Nov-15	28-Jan-16	234	
GFRG		143	07-Jul-15 A	01-Feb-16	260	
		143	07-Jul-15 A	01-Feb-16	260	
		143	07-Jul-15 A	01-Feb-16	260	
2832	SUBMITTALS - GFRG	93	07-Jul-15 A	13-Nov-15	260	7/7 - 11/13
2834	REV / APPROVE - GFRG	10	16-Nov-15	01-Dec-15	260	11/16S
2836	RELEASE, FABRICATE & DELIVER - GFRG	40	02-Dec-15	01-Feb-16	260	CONFIRM 2010, 10494
POOL EQUIPMENT		95	25-Sep-15 A	12-Feb-16	295	
		95	25-Sep-15 A	12-Feb-16	295	
		95	25-Sep-15 A	12-Feb-16	295	
2840	REV / APPROVE - POOL EQUIPMENT	22	25-Sep-15 A	26-Oct-15	318	9/25-10/26
2842	RELEASE, FABRICATE & DELIVER - POOL EQUIPMENT	50	01-Dec-15*	12-Feb-16	295	
WHEEL CHAIR LIFT		80	01-Dec-15	25-Mar-16	123	
		80	01-Dec-15	25-Mar-16	123	
		80	01-Dec-15	25-Mar-16	123	
2848	RELEASE, FABRICATE & DELIVER - WHEEL CHAIR LIFT (ELEV)	80	01-Dec-15*	25-Mar-16	123	CONFIRM SUCC
LAUNDRY CHUTE		95	03-Sep-15 A	22-Jan-16	299	
		95	03-Sep-15 A	22-Jan-16	299	



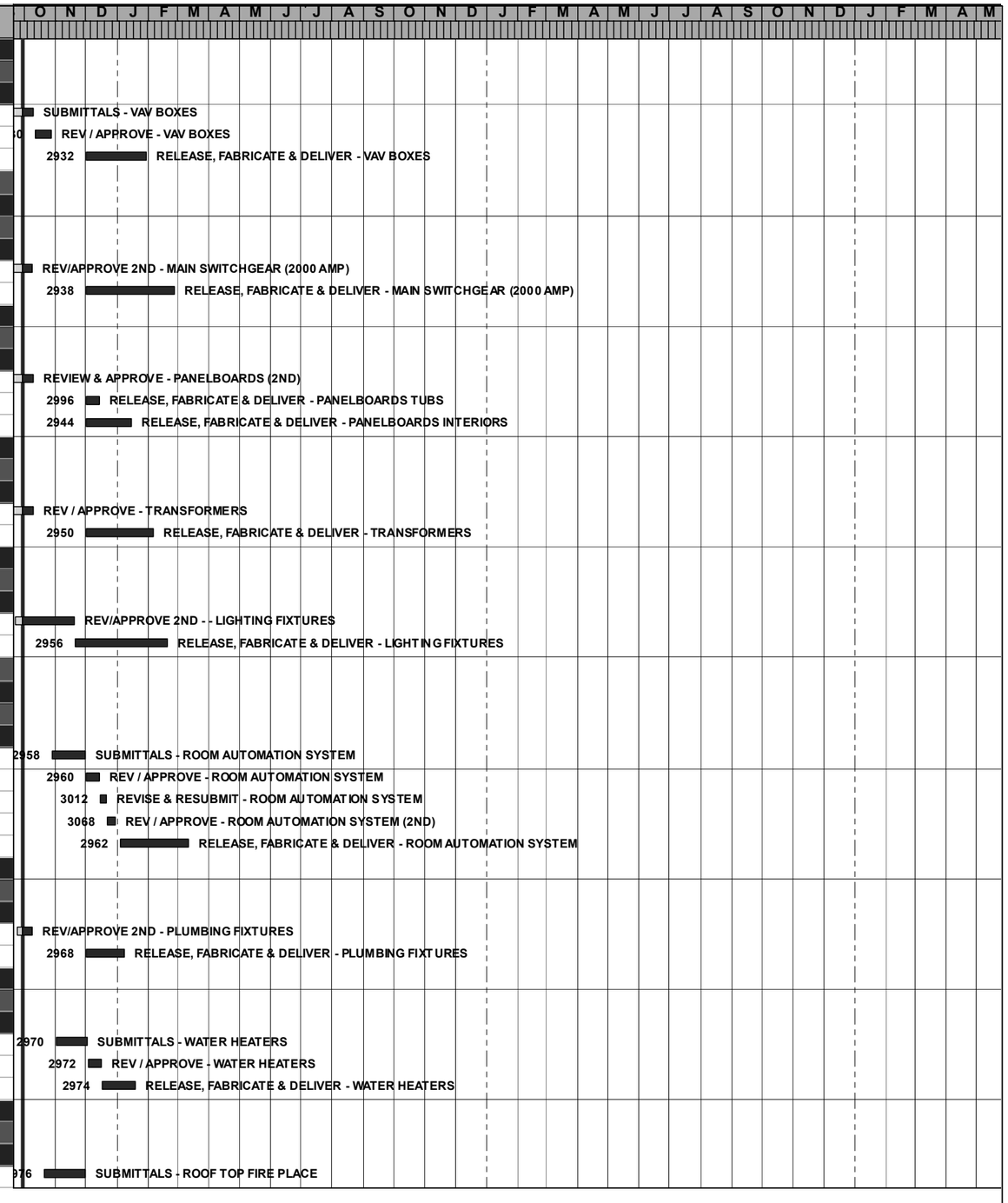
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
		95	03-Sep-15 A	22-Jan-16	299	
2858	REV / APPROVE - LAUNDRY CHUTE	18	03-Sep-15 A	29-Sep-15	342	9/3-9/29F
2860	RELEASE, FABRICATE & DELIVER - LAUNDRY CHUTE	35	01-Dec-15*	22-Jan-16	299	
GUEST ROOM MILLWORK		133	16-Sep-15 A	28-Mar-16	236	
		133	16-Sep-15 A	28-Mar-16	236	
		133	16-Sep-15 A	28-Mar-16	236	
2874	SUBMITTALS - GUEST ROOM MILLWORK	54	16-Sep-15 A	02-Dec-15	236	9/15 - 12/1
2876	REV / APPROVE - GUEST ROOM MILLWORK	34	03-Dec-15	25-Jan-16	236	
2878	RELEASE, FABRICATE & DELIVER - GUEST ROOM MILLWORK	45	26-Jan-16	28-Mar-16	236	
NANAWALL SYSTEM		122	04-Aug-15 A	29-Jan-16	284	
		122	04-Aug-15 A	29-Jan-16	284	
		122	04-Aug-15 A	29-Jan-16	284	
2880	SUBMITTALS - NANAWALL SYSTEM	58	04-Aug-15 A	23-Oct-15	284	8/3-10/22F
2882	REV / APPROVE - NANAWALL SYSTEM	19	26-Oct-15	19-Nov-15	284	10/23S
2884	RELEASE, FABRICATE & DELIVER - NANAWALL SYSTEM	45	20-Nov-15	29-Jan-16	284	
WON SMOKE DOORS		88	22-Sep-15 A	29-Jan-16	265	
		88	22-Sep-15 A	29-Jan-16	265	
		88	22-Sep-15 A	29-Jan-16	265	
2888	REV / APPROVE - WON DOORS	6	22-Sep-15 A	29-Sep-15	308	9/22-9/29F
2890	RELEASE, FABRICATE & DELIVER - WON DOORS	40	01-Dec-15*	29-Jan-16	265	
MECHANICAL		213	20-May-15 A	24-Mar-16	260	
CAST IN PLACE VAULT		40	20-Aug-15 A	15-Oct-15	1	
		40	20-Aug-15 A	15-Oct-15	1	
		40	20-Aug-15 A	15-Oct-15	1	
2902	RELEASE, FABRICATE & DELIVER - PRECAST HVAC VAULT	40	20-Aug-15 A	15-Oct-15	1	8/20-10/15F
CHILLERS		126	23-Sep-15 A	24-Mar-16	242	
		126	23-Sep-15 A	24-Mar-16	242	
		126	23-Sep-15 A	24-Mar-16	242	
2906	REV / APPROVE - CHILLERS (APPROVED)	24	23-Sep-15 A	26-Oct-15	264	9/22-10/23
2908	RELEASE, FABRICATE & DELIVER - CHILLERS	80	30-Nov-15*	24-Mar-16	242	
AHU UNITS		92	23-Sep-15 A	05-Feb-16	213	
		92	23-Sep-15 A	05-Feb-16	213	
		92	23-Sep-15 A	05-Feb-16	213	
2912	REV / APPROVE - AHU UNIT'S	24	23-Sep-15 A	26-Oct-15	236	9/22-10/23
2914	RELEASE, FABRICATE & DELIVER - AHU UNIT'S	45	01-Dec-15*	05-Feb-16	213	CONFIRM DUR
INDIRECT HVAC DESIGN		81	14-Sep-15 A	12-Jan-16	122	
		81	14-Sep-15 A	12-Jan-16	122	
		81	14-Sep-15 A	12-Jan-16	122	
10564	REV / APPROVE INDIRECT HVAC SHOP DRAWINGS	12	14-Sep-15 A	29-Sep-15	122	9/11-9/28
10566	REVISE & RESUBMIT INDIRECT HVAC SHOP DRAWINGS	69	30-Sep-15	12-Jan-16	122	9/30-1/12
PUMPS		174	20-May-15 A	29-Jan-16	284	
		174	20-May-15 A	29-Jan-16	284	
		174	20-May-15 A	29-Jan-16	284	
2916	SUBMITTALS - PUMPS	110	20-May-15 A	26-Oct-15	301	10/23F
2918	REV / APPROVE - PUMPS	6	27-Oct-15	03-Nov-15	301	10/26-11/2
2920	RELEASE, FABRICATE & DELIVER - PUMPS	40	01-Dec-15*	29-Jan-16	284	
MECHANICAL LOUVERS		72	15-Oct-15	01-Feb-16	298	
		72	15-Oct-15	01-Feb-16	298	
		72	15-Oct-15	01-Feb-16	298	
2922	SUBMITTALS - MECHANICAL EXHAUST LOUVERS	27	15-Oct-15*	20-Nov-15	298	10/15-11/20
2924	REV / APPROVE - MECHANICAL EXHAUST LOUVERS	10	23-Nov-15	08-Dec-15	298	
2926	RELEASE, FABRICATE & DELIVER - MECHANICAL EXHAUST LOUVERS	35	09-Dec-15	01-Feb-16	298	



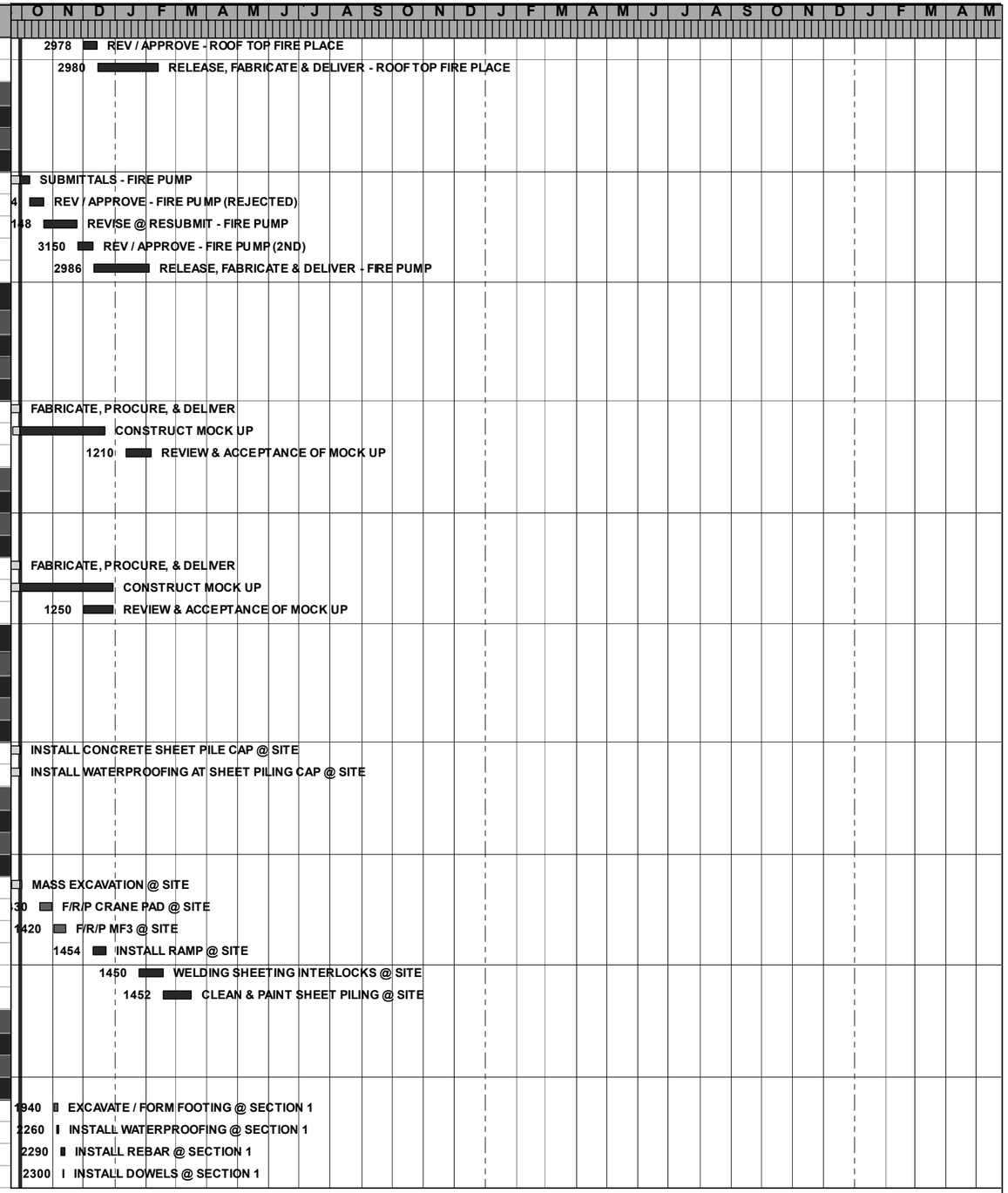
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
	VAV'S	174	20-May-15 A	29-Jan-16	109	
		174	20-May-15 A	29-Jan-16	109	
		174	20-May-15 A	29-Jan-16	109	
2928	SUBMITTALS - VAV BOXES	99	20-May-15 A	09-Oct-15	131	10/8F
2930	REV / APPROVE - VAV BOXES	12	12-Oct-15	27-Oct-15	131	10/9-10/26
2932	RELEASE, FABRICATE & DELIVER - VAV BOXES	40	01-Dec-15*	29-Jan-16	109	
	ELECTRICAL	143	03-Aug-15 A	26-Feb-16	248	
	MAIN SWITCHGEAR	114	14-Sep-15 A	26-Feb-16	241	
		114	14-Sep-15 A	26-Feb-16	241	
		114	14-Sep-15 A	26-Feb-16	241	
3008	REV/APPROVE 2ND - MAIN SWITCHGEAR (2000 AMP)	19	14-Sep-15 A	08-Oct-15	276	9/14-10/8F
2938	RELEASE, FABRICATE & DELIVER - MAIN SWITCHGEAR (2000 AMP)	60	01-Dec-15*	26-Feb-16	241	
	PANEL BOARDS	83	15-Sep-15 A	15-Jan-16	271	
		83	15-Sep-15 A	15-Jan-16	271	
		83	15-Sep-15 A	15-Jan-16	271	
3146	REVIEW & APPROVE - PANELBOARDS (2ND)	19	15-Sep-15 A	09-Oct-15	305	
2996	RELEASE, FABRICATE & DELIVER - PANELBOARDS TUBS	10	01-Dec-15*	14-Dec-15	291	
2944	RELEASE, FABRICATE & DELIVER - PANELBOARDS INTERIORS	30	01-Dec-15*	15-Jan-16	271	
	TRANSFORMERS	128	03-Aug-15 A	05-Feb-16	256	
		128	03-Aug-15 A	05-Feb-16	256	
		128	03-Aug-15 A	05-Feb-16	256	
2948	REV / APPROVE - TRANSFORMERS	49	03-Aug-15 A	09-Oct-15	291	8/13-10/8
2950	RELEASE, FABRICATE & DELIVER - TRANSFORMERS	45	01-Dec-15*	05-Feb-16	256	
	LIGHTING FIXTURES	103	22-Sep-15 A	19-Feb-16	253	
		103	22-Sep-15 A	19-Feb-16	253	
		103	22-Sep-15 A	19-Feb-16	253	
3064	REV/APPROVE 2ND - - LIGHTING FIXTURES	43	22-Sep-15 A	19-Nov-15	253	9/21-11/18F
2956	RELEASE, FABRICATE & DELIVER - LIGHTING FIXTURES	60	20-Nov-15	19-Feb-16	253	
	PLUMBING	116	24-Sep-15 A	11-Mar-16	267	
	ROOM AUTOMATION SYSTEM	91	29-Oct-15	11-Mar-16	208	
		91	29-Oct-15	11-Mar-16	208	
		91	29-Oct-15	11-Mar-16	208	
2958	SUBMITTALS - ROOM AUTOMATION SYSTEM	21	29-Oct-15*	30-Nov-15	208	10/29-11/30
2960	REV / APPROVE - ROOM AUTOMATION SYSTEM	10	01-Dec-15	14-Dec-15	208	12/1S
3012	REVISE & RESUBMIT - ROOM AUTOMATION SYSTEM	5	15-Dec-15	21-Dec-15	208	
3068	REV / APPROVE - ROOM AUTOMATION SYSTEM (2ND)	5	22-Dec-15	30-Dec-15	208	
2962	RELEASE, FABRICATE & DELIVER - ROOM AUTOMATION SYSTEM	50	04-Jan-16	11-Mar-16	208	
	PLUMBING FIXTURES	71	24-Sep-15 A	08-Jan-16	312	
		71	24-Sep-15 A	08-Jan-16	312	
		71	24-Sep-15 A	08-Jan-16	312	
3066	REV/APPROVE 2ND - PLUMBING FIXTURES	11	24-Sep-15 A	08-Oct-15	347	9/23-10/7F
2968	RELEASE, FABRICATE & DELIVER - PLUMBING FIXTURES	25	01-Dec-15*	08-Jan-16	312	
	WATER HEATERS	51	02-Nov-15	19-Jan-16	292	
		51	02-Nov-15	19-Jan-16	292	
		51	02-Nov-15	19-Jan-16	292	
2970	SUBMITTALS - WATER HEATERS	21	02-Nov-15*	02-Dec-15	292	11/2-12/2 NB
2972	REV / APPROVE - WATER HEATERS	10	03-Dec-15	16-Dec-15	292	
2974	RELEASE, FABRICATE & DELIVER - WATER HEATERS	20	17-Dec-15	19-Jan-16	292	
	ROOF TOP FIRE PLACE	77	21-Oct-15	12-Feb-16	232	
		77	21-Oct-15	12-Feb-16	232	
		77	21-Oct-15	12-Feb-16	232	
2976	SUBMITTALS - ROOF TOP FIRE PLACE	27	21-Oct-15*	30-Nov-15	232	10/21-11/30F NB



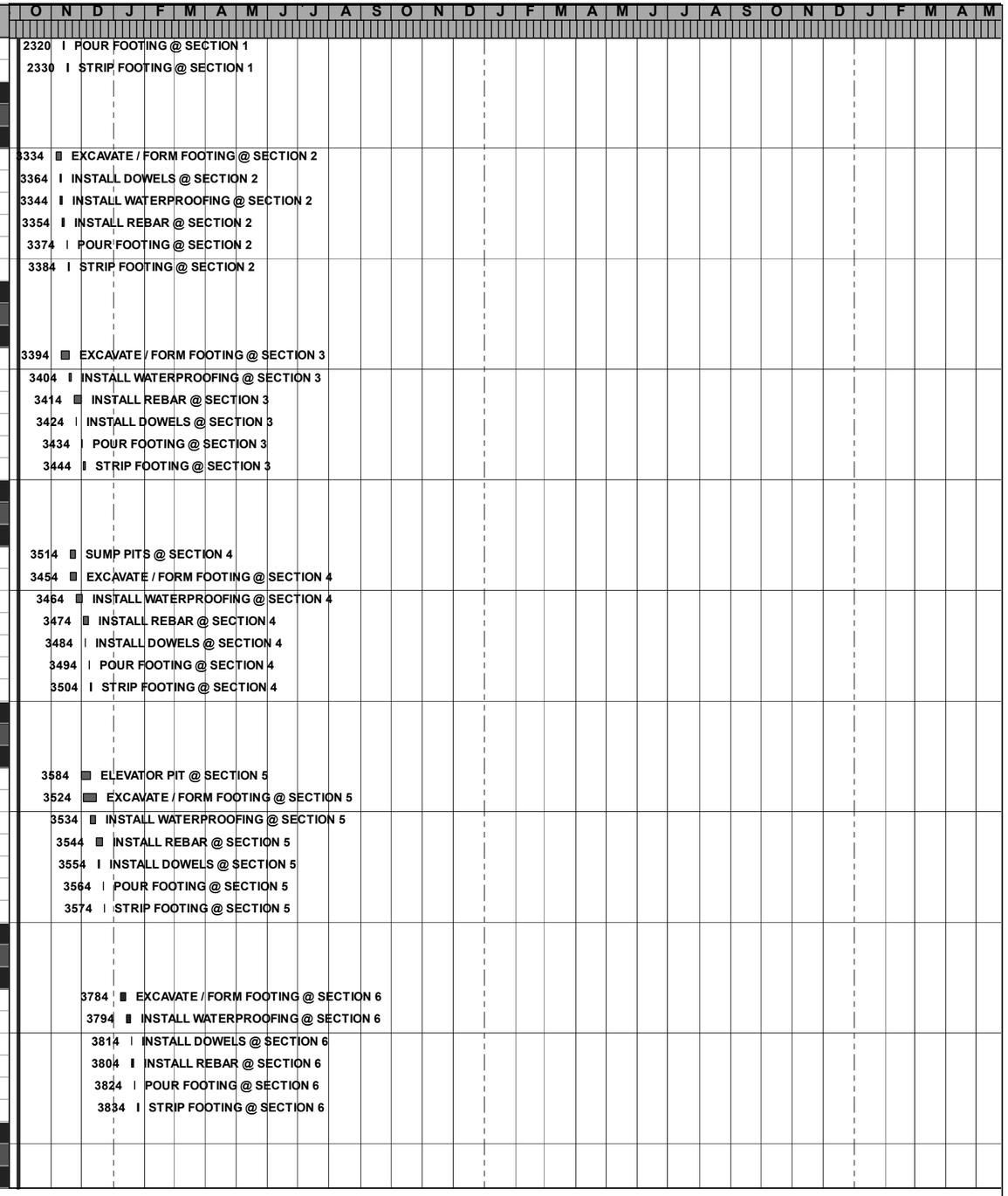
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
2978	REV / APPROVE - ROOF TOP FIRE PLACE	10	01-Dec-15	14-Dec-15	232	11/12-11/25F
2980	RELEASE, FABRICATE & DELIVER - ROOF TOP FIRE PLACE	40	15-Dec-15	12-Feb-16	232	
SPRINKLER		177	20-May-15 A	03-Feb-16	310	
FIRE PUMP		177	20-May-15 A	03-Feb-16	310	
		177	20-May-15 A	03-Feb-16	310	
		177	20-May-15 A	03-Feb-16	310	
2982	SUBMITTALS - FIRE PUMP	98	20-May-15 A	08-Oct-15	310	10/7F
2984	REV / APPROVE - FIRE PUMP (REJECTED)	10	09-Oct-15	22-Oct-15	310	10/8-10/21
3148	REVISE @ RESUBMIT - FIRE PUMP	23	23-Oct-15	24-Nov-15	310	10/22-11/23
3150	REV / APPROVE - FIRE PUMP (2ND)	10	25-Nov-15	10-Dec-15	310	
2986	RELEASE, FABRICATE & DELIVER - FIRE PUMP	35	11-Dec-15	03-Feb-16	310	
GUESTROOM/EXTERIOR MOCK UP		124	07-Aug-15 A	05-Feb-16	272	
EXTERIOR MOCK UP		124	07-Aug-15 A	05-Feb-16	63	
		124	07-Aug-15 A	05-Feb-16	63	
		124	07-Aug-15 A	05-Feb-16	63	
		124	07-Aug-15 A	05-Feb-16	63	
1190	FABRICATE, PROCURE, & DELIVER	38	07-Aug-15 A	30-Sep-15	73	8/7S - 9/30 ASSUMED FI
1200	CONSTRUCT MOCK UP	64	22-Sep-15 A	22-Dec-15	73	9/21S-12/22 PROJECTE
1210	REVIEW & ACCEPTANCE OF MOCK UP	19	12-Jan-16	05-Feb-16	63	
GUESTROOM MOCK UP		99	07-Aug-15 A	30-Dec-15	297	
		99	07-Aug-15 A	30-Dec-15	297	
		99	07-Aug-15 A	30-Dec-15	297	
		99	07-Aug-15 A	30-Dec-15	297	
1230	FABRICATE, PROCURE, & DELIVER	38	07-Aug-15 A	30-Sep-15	297	8/7S 9/30 ASUMMED FIN
1240	CONSTRUCT MOCK UP	82	01-Sep-15 A	30-Dec-15	297	9/1-12/31F
1250	REVIEW & ACCEPTANCE OF MOCK UP	20	01-Dec-15	30-Dec-15	297	
CONSTRUCTION		417	25-Aug-15 A	18-Apr-17	22	
DEEP FOUNDATIONS		26	25-Aug-15 A	30-Sep-15	13	
		26	25-Aug-15 A	30-Sep-15	13	
		26	25-Aug-15 A	30-Sep-15	13	
		26	25-Aug-15 A	30-Sep-15	13	
1350	INSTALL CONCRETE SHEET PILE CAP @ SITE	26	25-Aug-15 A	30-Sep-15	11	8/24S-9/29
1400	INSTALL WATERPROOFING AT SHEET PILING CAP @ SITE	20	02-Sep-15 A	30-Sep-15	13	9/29F
ROUGH SITEWORK		122	21-Sep-15 A	16-Mar-16	259	
		122	21-Sep-15 A	16-Mar-16	259	
		122	21-Sep-15 A	16-Mar-16	259	
		122	21-Sep-15 A	16-Mar-16	259	
1380	MASS EXCAVATION @ SITE	9	21-Sep-15 A	01-Oct-15	11	9/21-10/1
1430	F/R/P CRANE PAD @ SITE	10	19-Oct-15*	30-Oct-15	0	10/19S
1420	F/R/P MF3 @ SITE	10	02-Nov-15*	13-Nov-15	8	NEED UPDATE INFO
1454	INSTALL RAMP @ SITE	10	10-Dec-15	23-Dec-15	295	
1450	WELDING SHEETING INTERLOCKS @ SITE	18	25-Jan-16	17-Feb-16	259	
1452	CLEAN & PAINT SHEET PILING @ SITE	20	18-Feb-16	16-Mar-16	259	
FOUNDATIONS		76	02-Nov-15	23-Feb-16	12	
SECTION 1 CL 18-29.5, M-F		12	02-Nov-15	17-Nov-15	18	
		12	02-Nov-15	17-Nov-15	18	
		12	02-Nov-15	17-Nov-15	18	
1940	EXCAVATE / FORM FOOTING @ SECTION 1	4	02-Nov-15	05-Nov-15	0	
2260	INSTALL WATERPROOFING @ SECTION 1	2	05-Nov-15	06-Nov-15	18	
2290	INSTALL REBAR @ SECTION 1	4	09-Nov-15	12-Nov-15	18	
2300	INSTALL DOWELS @ SECTION 1	1	11-Nov-15	11-Nov-15	19	



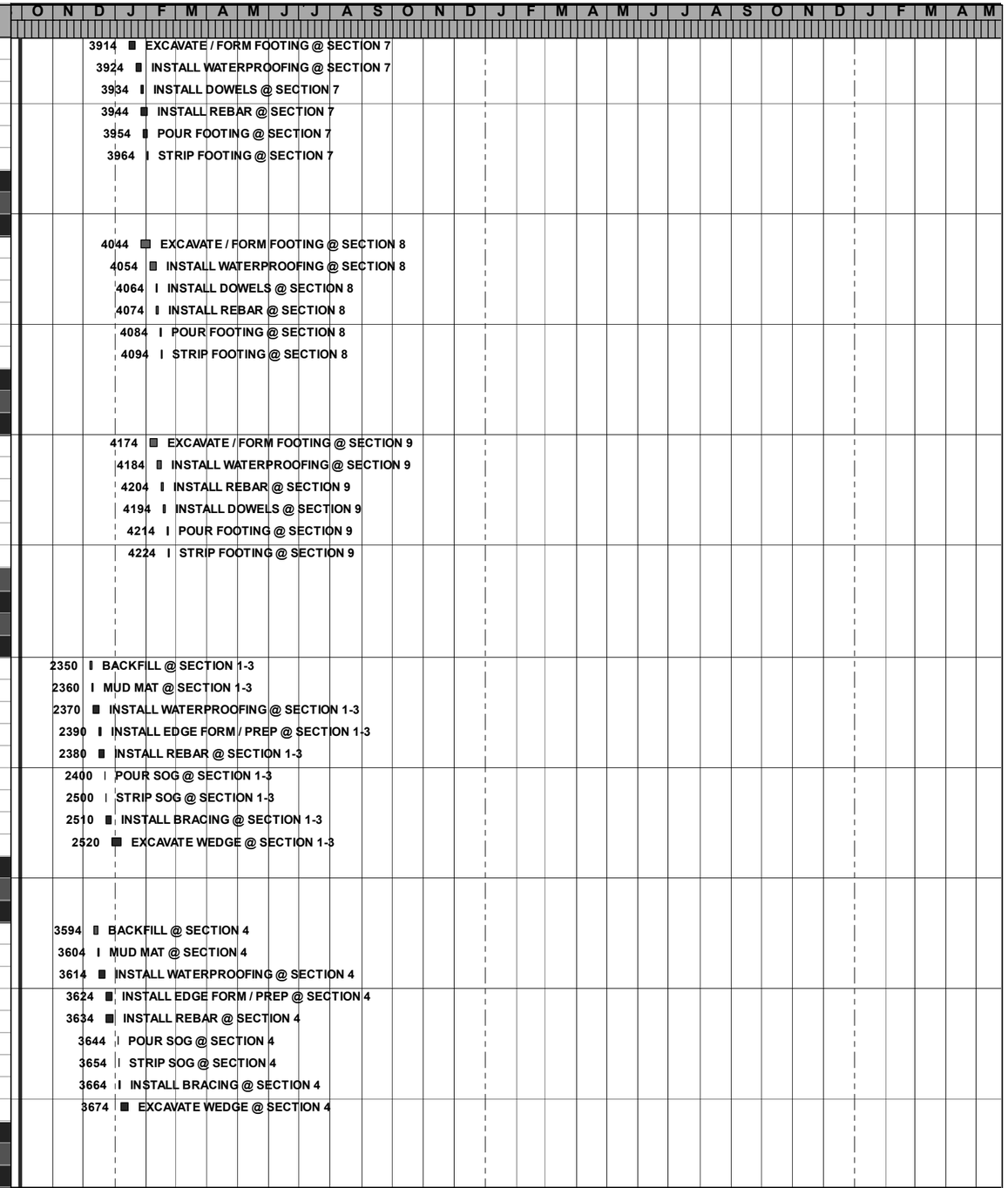
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
2320	POUR FOOTING @ SECTION 1	1	13-Nov-15	13-Nov-15	18	
2330	STRIP FOOTING @ SECTION 1	2	16-Nov-15	17-Nov-15	18	
SECTION 2 18-9, M-F		9	06-Nov-15	18-Nov-15	17	
		9	06-Nov-15	18-Nov-15	17	
		9	06-Nov-15	18-Nov-15	17	
3334	EXCAVATE / FORM FOOTING @ SECTION 2	3	06-Nov-15	10-Nov-15	0	
3364	INSTALL DOWELS @ SECTION 2	1	10-Nov-15	10-Nov-15	20	
3344	INSTALL WATERPROOFING @ SECTION 2	2	10-Nov-15	11-Nov-15	17	
3354	INSTALL REBAR @ SECTION 2	2	12-Nov-15	13-Nov-15	17	
3374	POUR FOOTING @ SECTION 2	1	16-Nov-15	16-Nov-15	17	
3384	STRIP FOOTING @ SECTION 2	2	17-Nov-15	18-Nov-15	17	
SECTION 3 9-29.5, F-B		16	11-Nov-15	04-Dec-15	7	
		16	11-Nov-15	04-Dec-15	7	
		16	11-Nov-15	04-Dec-15	7	
3394	EXCAVATE / FORM FOOTING @ SECTION 3	6	11-Nov-15	18-Nov-15	0	
3404	INSTALL WATERPROOFING @ SECTION 3	3	18-Nov-15	20-Nov-15	7	
3414	INSTALL REBAR @ SECTION 3	4	23-Nov-15	30-Nov-15	7	
3424	INSTALL DOWELS @ SECTION 3	1	25-Nov-15	25-Nov-15	8	
3434	POUR FOOTING @ SECTION 3	1	01-Dec-15	01-Dec-15	7	
3444	STRIP FOOTING @ SECTION 3	3	02-Dec-15	04-Dec-15	7	
SECTION 4 11-29.5, M-S.5		14	19-Nov-15	10-Dec-15	6	
		14	19-Nov-15	10-Dec-15	6	
		14	19-Nov-15	10-Dec-15	6	
3514	SUMP PITS @ SECTION 4	4	19-Nov-15	24-Nov-15	6	
3454	EXCAVATE / FORM FOOTING @ SECTION 4	5	19-Nov-15	25-Nov-15	0	
3464	INSTALL WATERPROOFING @ SECTION 4	3	25-Nov-15	01-Dec-15	6	
3474	INSTALL REBAR @ SECTION 4	4	02-Dec-15	07-Dec-15	6	
3484	INSTALL DOWELS @ SECTION 4	1	04-Dec-15	04-Dec-15	7	
3494	POUR FOOTING @ SECTION 4	1	08-Dec-15	08-Dec-15	6	
3504	STRIP FOOTING @ SECTION 4	2	09-Dec-15	10-Dec-15	6	
SECTION 5 29.5-37.5, A.5-M		18	30-Nov-15	23-Dec-15	0	
		18	30-Nov-15	23-Dec-15	0	
		18	30-Nov-15	23-Dec-15	0	
3584	ELEVATOR PIT @ SECTION 5	8	30-Nov-15	09-Dec-15	0	
3524	EXCAVATE / FORM FOOTING @ SECTION 5	10	02-Dec-15	15-Dec-15	0	
3534	INSTALL WATERPROOFING @ SECTION 5	4	09-Dec-15	14-Dec-15	0	
3544	INSTALL REBAR @ SECTION 5	5	15-Dec-15	21-Dec-15	0	
3554	INSTALL DOWELS @ SECTION 5	2	17-Dec-15	18-Dec-15	1	
3564	POUR FOOTING @ SECTION 5	1	22-Dec-15	22-Dec-15	0	
3574	STRIP FOOTING @ SECTION 5	1	23-Dec-15	23-Dec-15	0	
SECTION 6		12	08-Jan-16	25-Jan-16	20	
		12	08-Jan-16	25-Jan-16	20	
		12	08-Jan-16	25-Jan-16	20	
3784	EXCAVATE / FORM FOOTING @ SECTION 6	4	08-Jan-16	13-Jan-16	20	
3794	INSTALL WATERPROOFING @ SECTION 6	3	14-Jan-16	18-Jan-16	20	
3814	INSTALL DOWELS @ SECTION 6	1	19-Jan-16	19-Jan-16	22	
3804	INSTALL REBAR @ SECTION 6	3	19-Jan-16	21-Jan-16	20	
3824	POUR FOOTING @ SECTION 6	1	22-Jan-16	22-Jan-16	20	
3834	STRIP FOOTING @ SECTION 6	1	25-Jan-16	25-Jan-16	20	
SECTION 7		13	15-Jan-16	02-Feb-16	17	
		13	15-Jan-16	02-Feb-16	17	
		13	15-Jan-16	02-Feb-16	17	



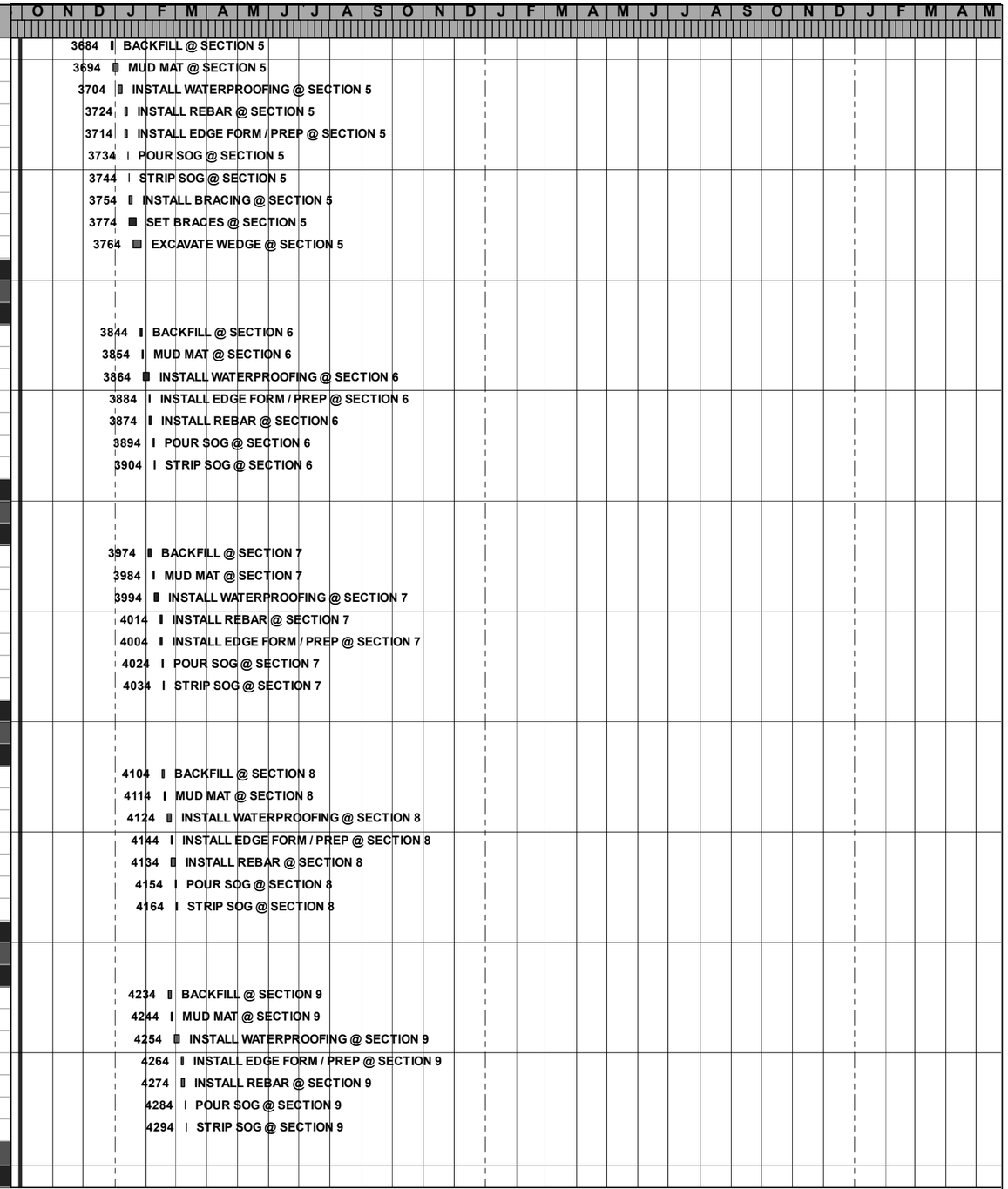
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
3914	EXCAVATE / FORM FOOTING @ SECTION 7	5	15-Jan-16	21-Jan-16	17	
3924	INSTALL WATERPROOFING @ SECTION 7	3	22-Jan-16	26-Jan-16	17	
3934	INSTALL DOWELS @ SECTION 7	2	27-Jan-16	28-Jan-16	17	
3944	INSTALL REBAR @ SECTION 7	4	27-Jan-16	01-Feb-16	17	
3954	POUR FOOTING @ SECTION 7	2	29-Jan-16	01-Feb-16	17	
3964	STRIP FOOTING @ SECTION 7	1	02-Feb-16	02-Feb-16	17	
SECTION 8		15	27-Jan-16	16-Feb-16	5	
		15	27-Jan-16	16-Feb-16	5	
		15	27-Jan-16	16-Feb-16	5	
4044	EXCAVATE / FORM FOOTING @ SECTION 8	7	27-Jan-16	04-Feb-16	0	
4054	INSTALL WATERPROOFING @ SECTION 8	4	05-Feb-16	10-Feb-16	5	
4064	INSTALL DOWELS @ SECTION 8	1	11-Feb-16	11-Feb-16	6	
4074	INSTALL REBAR @ SECTION 8	2	11-Feb-16	12-Feb-16	5	
4084	POUR FOOTING @ SECTION 8	1	15-Feb-16	15-Feb-16	5	
4094	STRIP FOOTING @ SECTION 8	1	16-Feb-16	16-Feb-16	5	
SECTION 9		13	05-Feb-16	23-Feb-16	12	
		13	05-Feb-16	23-Feb-16	12	
		13	05-Feb-16	23-Feb-16	12	
4174	EXCAVATE / FORM FOOTING @ SECTION 9	5	05-Feb-16	11-Feb-16	0	
4184	INSTALL WATERPROOFING @ SECTION 9	2	12-Feb-16	15-Feb-16	0	
4204	INSTALL REBAR @ SECTION 9	2	16-Feb-16	17-Feb-16	0	
4194	INSTALL DOWELS @ SECTION 9	2	18-Feb-16	19-Feb-16	0	
4214	POUR FOOTING @ SECTION 9	1	22-Feb-16	22-Feb-16	0	
4224	STRIP FOOTING @ SECTION 9	1	23-Feb-16	23-Feb-16	12	
SLAB ON GRADE		66	07-Dec-15	11-Mar-16	224	
SECTION 1-3		20	07-Dec-15	07-Jan-16	20	
		20	07-Dec-15	07-Jan-16	20	
		20	07-Dec-15	07-Jan-16	20	
2350	BACKFILL @ SECTION 1-3	3	07-Dec-15*	09-Dec-15	7	
2360	MUD MAT @ SECTION 1-3	2	09-Dec-15	10-Dec-15	20	
2370	INSTALL WATERPROOFING @ SECTION 1-3	5	10-Dec-15	16-Dec-15	20	
2390	INSTALL EDGE FORM / PREP @ SECTION 1-3	3	16-Dec-15	18-Dec-15	21	
2380	INSTALL REBAR @ SECTION 1-3	4	16-Dec-15	21-Dec-15	20	
2400	POUR SOG @ SECTION 1-3	1	22-Dec-15	22-Dec-15	20	
2500	STRIP SOG @ SECTION 1-3	1	23-Dec-15	23-Dec-15	21	
2510	INSTALL BRACING @ SECTION 1-3	2	23-Dec-15	28-Dec-15	20	
2520	EXCAVATE WEDGE @ SECTION 1-3	6	29-Dec-15	07-Jan-16	20	LOOK AT FLOAT
SECTION 4 11-29.5, M-S.5		21	11-Dec-15	14-Jan-16	17	
		21	11-Dec-15	14-Jan-16	17	
		21	11-Dec-15	14-Jan-16	17	
3594	BACKFILL @ SECTION 4	3	11-Dec-15	15-Dec-15	6	
3604	MUD MAT @ SECTION 4	2	15-Dec-15	16-Dec-15	17	
3614	INSTALL WATERPROOFING @ SECTION 4	5	16-Dec-15	22-Dec-15	17	
3624	INSTALL EDGE FORM / PREP @ SECTION 4	3	23-Dec-15	29-Dec-15	18	
3634	INSTALL REBAR @ SECTION 4	4	23-Dec-15	30-Dec-15	17	
3644	POUR SOG @ SECTION 4	1	04-Jan-16	04-Jan-16	17	
3654	STRIP SOG @ SECTION 4	1	05-Jan-16	05-Jan-16	18	
3664	INSTALL BRACING @ SECTION 4	2	05-Jan-16	06-Jan-16	17	
3674	EXCAVATE WEDGE @ SECTION 4	6	07-Jan-16	14-Jan-16	17	
SECTION 5 29.5-37.5, A.5-M		20	28-Dec-15	26-Jan-16	257	
		20	28-Dec-15	26-Jan-16	257	
		20	28-Dec-15	26-Jan-16	257	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
3684	BACKFILL @ SECTION 5	3	28-Dec-15	30-Dec-15	0	
3694	MUD MAT @ SECTION 5	2	30-Dec-15	04-Jan-16	0	
3704	INSTALL WATERPROOFING @ SECTION 5	5	04-Jan-16	08-Jan-16	0	
3724	INSTALL REBAR @ SECTION 5	3	11-Jan-16	13-Jan-16	0	
3714	INSTALL EDGE FORM / PREP @ SECTION 5	3	11-Jan-16	13-Jan-16	0	
3734	POUR SOG @ SECTION 5	1	14-Jan-16	14-Jan-16	0	
3744	STRIP SOG @ SECTION 5	1	15-Jan-16	15-Jan-16	1	
3754	INSTALL BRACING @ SECTION 5	2	15-Jan-16	18-Jan-16	0	
3774	SET BRACES @ SECTION 5	6	15-Jan-16	22-Jan-16	259	
3764	EXCAVATE WEDGE @ SECTION 5	6	19-Jan-16	26-Jan-16	0	
SECTION 6		11	26-Jan-16	09-Feb-16	20	
		11	26-Jan-16	09-Feb-16	20	
		11	26-Jan-16	09-Feb-16	20	
3844	BACKFILL @ SECTION 6	2	26-Jan-16	27-Jan-16	20	
3854	MUD MAT @ SECTION 6	1	28-Jan-16	28-Jan-16	20	
3864	INSTALL WATERPROOFING @ SECTION 6	4	29-Jan-16	03-Feb-16	20	
3884	INSTALL EDGE FORM / PREP @ SECTION 6	1	04-Feb-16	04-Feb-16	21	
3874	INSTALL REBAR @ SECTION 6	2	04-Feb-16	05-Feb-16	20	
3894	POUR SOG @ SECTION 6	1	08-Feb-16	08-Feb-16	20	
3904	STRIP SOG @ SECTION 6	1	09-Feb-16	09-Feb-16	20	
SECTION 7		12	03-Feb-16	18-Feb-16	17	
		12	03-Feb-16	18-Feb-16	17	
		12	03-Feb-16	18-Feb-16	17	
3974	BACKFILL @ SECTION 7	3	03-Feb-16	05-Feb-16	17	
3984	MUD MAT @ SECTION 7	1	08-Feb-16	08-Feb-16	17	
3994	INSTALL WATERPROOFING @ SECTION 7	4	09-Feb-16	12-Feb-16	17	
4014	INSTALL REBAR @ SECTION 7	2	15-Feb-16	16-Feb-16	17	
4004	INSTALL EDGE FORM / PREP @ SECTION 7	2	15-Feb-16	16-Feb-16	17	
4024	POUR SOG @ SECTION 7	1	17-Feb-16	17-Feb-16	17	
4034	STRIP SOG @ SECTION 7	1	18-Feb-16	18-Feb-16	17	
SECTION 8		11	17-Feb-16	02-Mar-16	5	
		11	17-Feb-16	02-Mar-16	5	
		11	17-Feb-16	02-Mar-16	5	
4104	BACKFILL @ SECTION 8	2	17-Feb-16	18-Feb-16	5	
4114	MUD MAT @ SECTION 8	1	19-Feb-16	19-Feb-16	5	
4124	INSTALL WATERPROOFING @ SECTION 8	4	22-Feb-16	25-Feb-16	5	
4144	INSTALL EDGE FORM / PREP @ SECTION 8	1	26-Feb-16	26-Feb-16	6	
4134	INSTALL REBAR @ SECTION 8	2	26-Feb-16	29-Feb-16	5	
4154	POUR SOG @ SECTION 8	1	01-Mar-16	01-Mar-16	5	
4164	STRIP SOG @ SECTION 8	1	02-Mar-16	02-Mar-16	5	
SECTION 9		14	23-Feb-16	11-Mar-16	0	
		14	23-Feb-16	11-Mar-16	0	
		14	23-Feb-16	11-Mar-16	0	
4234	BACKFILL @ SECTION 9	3	23-Feb-16	25-Feb-16	0	
4244	MUD MAT @ SECTION 9	1	26-Feb-16	26-Feb-16	0	
4254	INSTALL WATERPROOFING @ SECTION 9	5	29-Feb-16	04-Mar-16	0	
4264	INSTALL EDGE FORM / PREP @ SECTION 9	2	07-Mar-16	08-Mar-16	1	
4274	INSTALL REBAR @ SECTION 9	3	07-Mar-16	09-Mar-16	0	
4284	POUR SOG @ SECTION 9	1	10-Mar-16	10-Mar-16	0	
4294	STRIP SOG @ SECTION 9	1	11-Mar-16	11-Mar-16	0	
STRUCTURE		127	05-Feb-16	03-Aug-16	60	
LEVEL 1		64	05-Feb-16	04-May-16	0	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
AREA A		44	05-Feb-16	06-Apr-16	20	
HORIZONTAL		44	05-Feb-16	06-Apr-16	20	
2540	FIRST LIFT WALLS & COLUMNS @ AREA A LVL 1 (6800 SQ FT)	4	05-Feb-16	10-Feb-16	20	
2530	MOBILIZE @ AREA A LVL 1 (6800 SQ FT)	1	10-Feb-16	10-Feb-16	20	
2550	INSTALL FORMS @ AREA A LVL 1 (6800 SQ FT)	5	11-Feb-16	17-Feb-16	20	
2560	INSTALL REBAR / MEP @ AREA A LVL 1 (6800 SQ FT)	2	18-Feb-16	19-Feb-16	20	
2570	POUR @ AREA A LVL 1 (6800 SQ FT)	1	22-Feb-16	22-Feb-16	20	
2580	CURE @ AREA A LVL 1 (6800 SQ FT)	3	23-Feb-16	25-Feb-16	44	
2620	WALLS / COLUMNS @ AREA A LVL 1 (6800 SQ FT)	4	23-Feb-16	26-Feb-16	20	
2590	STRESS @ AREA A LVL 1 (6800 SQ FT)	1	26-Feb-16	26-Feb-16	44	
2600	STRIP FORMS @ AREA A LVL 1 (6800 SQ FT)	2	29-Feb-16	01-Mar-16	44	
2610	REMOVE RESHORE @ AREA A LVL 1 (6800 SQ FT)	2	05-Apr-16	06-Apr-16	20	
AREA B		40	16-Feb-16	11-Apr-16	17	
HORIZONTAL		40	16-Feb-16	11-Apr-16	17	
4304	FIRST LIFT WALLS & COLUMNS @ AREA B LVL 1 (6800 SQ FT)	3	16-Feb-16	18-Feb-16	17	
4314	INSTALL FORMS @ AREA B LVL 1 (6800 SQ FT)	5	19-Feb-16	25-Feb-16	17	
4324	INSTALL REBAR / MEP @ AREA B LVL 1 (6800 SQ FT)	3	26-Feb-16	01-Mar-16	17	
4334	POUR @ AREA B LVL 1 (6800 SQ FT)	1	02-Mar-16	02-Mar-16	17	
4344	CURE @ AREA B LVL 1 (6800 SQ FT)	2	02-Mar-16	03-Mar-16	39	
4374	WALLS / COLUMNS @ AREA B LVL 1 (6800 SQ FT)	4	03-Mar-16	08-Mar-16	17	
4354	STRESS @ AREA B LVL 1 (6800 SQ FT)	1	04-Mar-16	04-Mar-16	39	
4364	STRIP FORMS @ AREA B LVL 1 (6800 SQ FT)	2	07-Mar-16	08-Mar-16	39	
2630	REMOVE RESHORE @ AREA B LVL 1 (6800 SQ FT)	2	08-Apr-16	11-Apr-16	17	
AREA C		43	29-Feb-16	27-Apr-16	5	
HORIZONTAL		43	29-Feb-16	27-Apr-16	5	
4404	FIRST LIFT WALLS & COLUMNS @ AREA C LVL 1 (6800 SQ FT)	4	29-Feb-16	03-Mar-16	5	
4384	MOBILIZE @ AREA C LVL 1 (6800 SQ FT)	1	03-Mar-16	03-Mar-16	5	
4414	INSTALL FORMS @ AREA C LVL 1 (6800 SQ FT)	5	04-Mar-16	10-Mar-16	5	
4424	INSTALL REBAR / MEP @ AREA C LVL 1 (6800 SQ FT)	3	11-Mar-16	15-Mar-16	5	
4434	POUR @ AREA C LVL 1 (6800 SQ FT)	1	16-Mar-16	16-Mar-16	5	
4444	CURE @ AREA C LVL 1 (6800 SQ FT)	3	16-Mar-16	18-Mar-16	28	
4474	WALLS / COLUMNS @ AREA C LVL 1 (6800 SQ FT)	5	17-Mar-16	23-Mar-16	5	
4454	STRESS @ AREA C LVL 1 (6800 SQ FT)	1	21-Mar-16	21-Mar-16	28	
4464	STRIP FORMS @ AREA C LVL 1 (6800 SQ FT)	2	22-Mar-16	23-Mar-16	28	
4394	REMOVE RESHORE @ AREA C LVL 1 (6800 SQ FT)	2	26-Apr-16	27-Apr-16	5	
AREA D		41	09-Mar-16	04-May-16	0	
HORIZONTAL		41	09-Mar-16	04-May-16	0	
4504	FIRST LIFT WALLS & COLUMNS @ AREA D LVL 1 (6800 SQ FT)	4	09-Mar-16	14-Mar-16	0	
4514	INSTALL FORMS @ AREA D LVL 1 (6800 SQ FT)	5	15-Mar-16	21-Mar-16	0	
4524	INSTALL REBAR / MEP @ AREA D LVL 1 (6800 SQ FT)	3	22-Mar-16	24-Mar-16	0	
4534	POUR @ AREA D LVL 1 (6800 SQ FT)	1	25-Mar-16	25-Mar-16	0	
4544	CURE @ AREA D LVL 1 (6800 SQ FT)	2	25-Mar-16	28-Mar-16	22	
4484	WALLS / COLUMNS @ AREA D LVL 1 (6800 SQ FT)	4	28-Mar-16	31-Mar-16	0	
4554	STRESS @ AREA D LVL 1 (6800 SQ FT)	1	29-Mar-16	29-Mar-16	22	
4564	STRIP FORMS @ AREA D LVL 1 (6800 SQ FT)	2	30-Mar-16	31-Mar-16	22	
4494	REMOVE RESHORE @ AREA D LVL 1 (6800 SQ FT)	2	03-May-16	04-May-16	0	
LEVEL 2		58	29-Feb-16	18-May-16	4	
AREA A		38	29-Feb-16	20-Apr-16	24	
HORIZONTAL		38	29-Feb-16	20-Apr-16	24	
4594	INSTALL FORMS @ AREA A LVL 2 (6800 SQ FT)	4	29-Feb-16	03-Mar-16	20	
4604	INSTALL REBAR / MEP @ AREA A LVL 2 (6800 SQ FT)	3	04-Mar-16	08-Mar-16	20	
4614	POUR @ AREA A LVL 2 (6800 SQ FT)	1	09-Mar-16	09-Mar-16	20	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
4624	CURE @ AREA A LVL 2 (6800 SQ FT)	3	09-Mar-16	11-Mar-16	47	
4654	WALLS / COLUMNS @ AREA A LVL 2 (6800 SQ FT)	6	10-Mar-16	17-Mar-16	20	
4634	STRESS @ AREA A LVL 2 (6800 SQ FT)	1	14-Mar-16	14-Mar-16	47	
4644	STRIP FORMS @ AREA A LVL 2 (6800 SQ FT)	2	15-Mar-16	16-Mar-16	47	
4584	REMOVE RESHORE @ AREA A LVL 2 (6800 SQ FT)	2	19-Apr-16	20-Apr-16	24	
AREA B		34	09-Mar-16	25-Apr-16	21	
HORIZONTAL		34	09-Mar-16	25-Apr-16	21	
4674	INSTALL FORMS @ AREA B LVL 2 (6800 SQ FT)	4	09-Mar-16	14-Mar-16	17	
4684	INSTALL REBAR / MEP @ AREA B LVL 2 (6800 SQ FT)	3	15-Mar-16	17-Mar-16	17	
4694	POUR @ AREA B LVL 2 (6800 SQ FT)	1	18-Mar-16	18-Mar-16	17	
4704	CURE @ AREA B LVL 2 (6800 SQ FT)	3	21-Mar-16	23-Mar-16	39	
4734	WALLS / COLUMNS @ AREA B LVL 2 (6800 SQ FT)	4	21-Mar-16	24-Mar-16	17	
4714	STRESS @ AREA B LVL 2 (6800 SQ FT)	1	24-Mar-16	24-Mar-16	39	
4724	STRIP FORMS @ AREA B LVL 2 (6800 SQ FT)	2	25-Mar-16	28-Mar-16	39	
4664	REMOVE RESHORE @ AREA B LVL 2 (6800 SQ FT)	2	22-Apr-16	25-Apr-16	21	
AREA C		36	24-Mar-16	12-May-16	8	
HORIZONTAL		36	24-Mar-16	12-May-16	8	
4754	INSTALL FORMS @ AREA C LVL 2 (6800 SQ FT)	4	24-Mar-16	29-Mar-16	5	
4764	INSTALL REBAR / MEP @ AREA C LVL 2 (6800 SQ FT)	3	30-Mar-16	01-Apr-16	5	
4774	POUR @ AREA C LVL 2 (6800 SQ FT)	1	04-Apr-16	04-Apr-16	5	
4784	CURE @ AREA C LVL 2 (6800 SQ FT)	3	05-Apr-16	07-Apr-16	28	
4814	WALLS / COLUMNS @ AREA C LVL 2 (6800 SQ FT)	5	05-Apr-16	11-Apr-16	5	
4794	STRESS @ AREA C LVL 2 (6800 SQ FT)	1	08-Apr-16	08-Apr-16	28	
4804	STRIP FORMS @ AREA C LVL 2 (6800 SQ FT)	2	11-Apr-16	12-Apr-16	28	
4744	REMOVE RESHORE @ AREA C LVL 2 (6800 SQ FT)	2	11-May-16	12-May-16	8	
AREA D		34	01-Apr-16	18-May-16	4	
HORIZONTAL		34	01-Apr-16	18-May-16	4	
4834	INSTALL FORMS @ AREA D LVL 2 (6800 SQ FT)	4	01-Apr-16	06-Apr-16	0	
4844	INSTALL REBAR / MEP @ AREA D LVL 2 (6800 SQ FT)	3	07-Apr-16	11-Apr-16	0	
4854	POUR @ AREA D LVL 2 (6800 SQ FT)	1	12-Apr-16	12-Apr-16	0	
4864	CURE @ AREA D LVL 2 (6800 SQ FT)	4	12-Apr-16	15-Apr-16	22	
4894	WALLS / COLUMNS @ AREA D LVL 2 (6800 SQ FT)	4	13-Apr-16	18-Apr-16	0	
4874	STRESS @ AREA D LVL 2 (6800 SQ FT)	1	18-Apr-16	18-Apr-16	22	
4884	STRIP FORMS @ AREA D LVL 2 (6800 SQ FT)	2	19-Apr-16	20-Apr-16	22	
4824	REMOVE RESHORE @ AREA D LVL 2 (6800 SQ FT)	2	17-May-16	18-May-16	4	
LEVEL 3		54	18-Mar-16	02-Jun-16	25	
AREA A		33	18-Mar-16	03-May-16	46	
HORIZONTAL		33	18-Mar-16	03-May-16	46	
4914	INSTALL FORMS @ AREA A LVL 3 (6400 SQ FT)	4	18-Mar-16	23-Mar-16	20	
4924	INSTALL REBAR / MEP @ AREA A LVL 3 (6400 SQ FT)	3	24-Mar-16	28-Mar-16	20	
4934	POUR @ AREA A LVL 3 (6400 SQ FT)	1	29-Mar-16	29-Mar-16	20	
4944	CURE @ AREA A LVL 3 (6400 SQ FT)	4	29-Mar-16	01-Apr-16	20	
4974	WALLS / COLUMNS @ AREA A LVL 3 (6400 SQ FT)	4	30-Mar-16	04-Apr-16	24	
4954	STRESS @ AREA A LVL 3 (6400 SQ FT)	1	04-Apr-16	04-Apr-16	20	
4964	STRIP FORMS @ AREA A LVL 3 (6400 SQ FT)	2	05-Apr-16	06-Apr-16	20	
4904	REMOVE RESHORE @ AREA A LVL 3 (6400 SQ FT)	2	02-May-16	03-May-16	46	
AREA B		32	25-Mar-16	09-May-16	42	
HORIZONTAL		32	25-Mar-16	09-May-16	42	
4994	INSTALL FORMS @ AREA B LVL 3 (6400 SQ FT)	4	25-Mar-16	30-Mar-16	17	
5004	INSTALL REBAR / MEP @ AREA B LVL 3 (6400 SQ FT)	3	31-Mar-16	04-Apr-16	17	
5014	POUR @ AREA B LVL 3 (6400 SQ FT)	1	05-Apr-16	05-Apr-16	17	
5024	CURE @ AREA B LVL 3 (6400 SQ FT)	2	05-Apr-16	06-Apr-16	17	



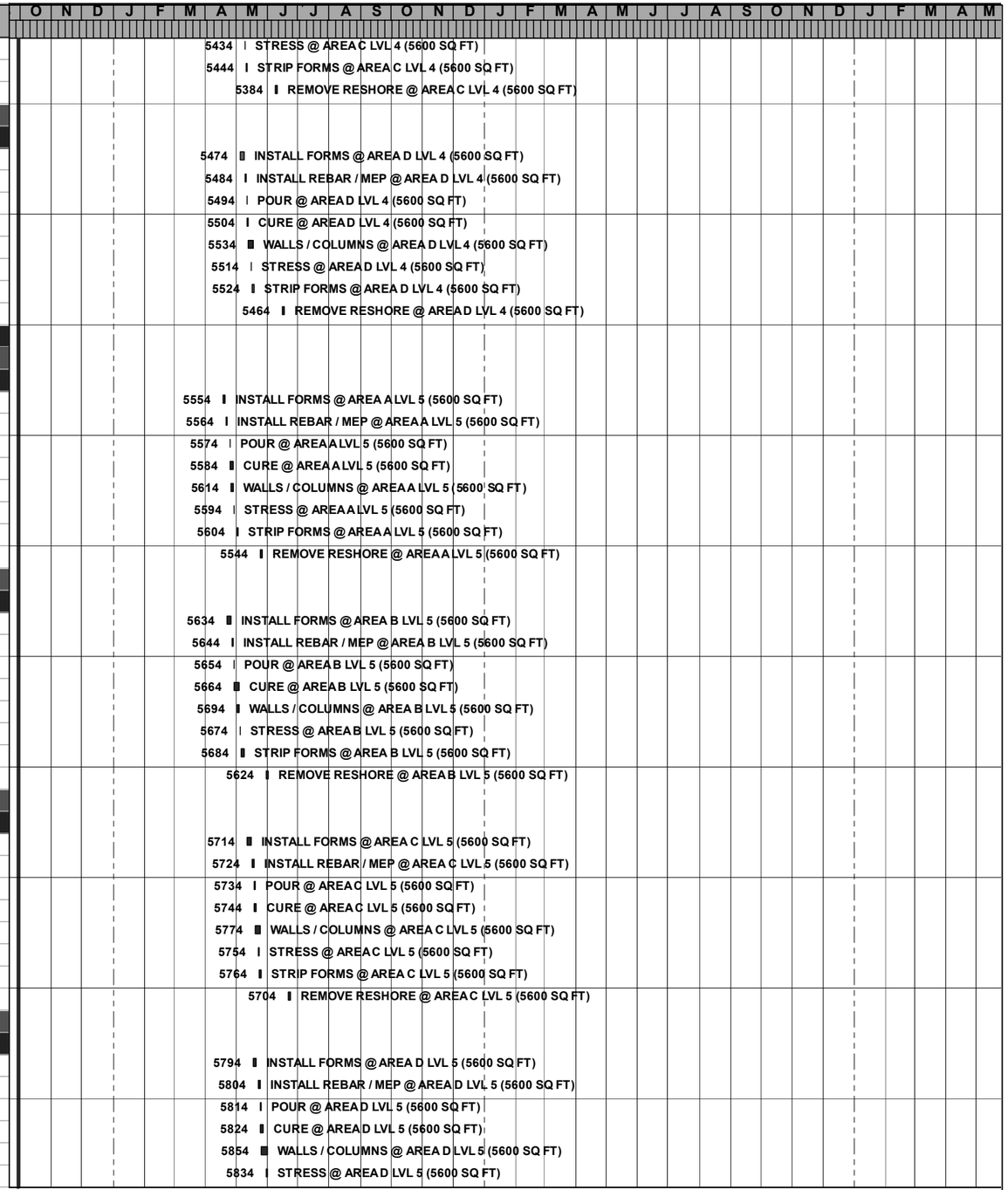
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
5054	WALLS / COLUMNS @ AREA B LVL 3 (6400 SQ FT)	3	06-Apr-16	08-Apr-16	21	
5034	STRESS @ AREA B LVL 3 (6400 SQ FT)	1	07-Apr-16	07-Apr-16	17	
5044	STRIP FORMS @ AREA B LVL 3 (6400 SQ FT)	2	08-Apr-16	11-Apr-16	17	
4984	REMOVE RESHORE @ AREA B LVL 3 (6400 SQ FT)	2	06-May-16	09-May-16	42	
AREA C		32	12-Apr-16	25-May-16	30	
HORIZONTAL		32	12-Apr-16	25-May-16	30	
5074	INSTALL FORMS @ AREA C LVL 3 (6400 SQ FT)	4	12-Apr-16	15-Apr-16	5	
5084	INSTALL REBAR / MEP @ AREA C LVL 3 (6400 SQ FT)	3	18-Apr-16	20-Apr-16	5	
5094	POUR @ AREA C LVL 3 (6400 SQ FT)	1	21-Apr-16	21-Apr-16	5	
5104	CURE @ AREA C LVL 3 (6400 SQ FT)	2	21-Apr-16	22-Apr-16	5	
5134	WALLS / COLUMNS @ AREA C LVL 3 (6400 SQ FT)	5	22-Apr-16	28-Apr-16	8	
5114	STRESS @ AREA C LVL 3 (6400 SQ FT)	1	25-Apr-16	25-Apr-16	5	
5124	STRIP FORMS @ AREA C LVL 3 (6400 SQ FT)	2	26-Apr-16	27-Apr-16	5	
5064	REMOVE RESHORE @ AREA C LVL 3 (6400 SQ FT)	2	24-May-16	25-May-16	30	
AREA D		32	19-Apr-16	02-Jun-16	25	
HORIZONTAL		32	19-Apr-16	02-Jun-16	25	
5154	INSTALL FORMS @ AREA D LVL 3 (6400 SQ FT)	4	19-Apr-16	22-Apr-16	0	
5164	INSTALL REBAR / MEP @ AREA D LVL 3 (6400 SQ FT)	3	25-Apr-16	27-Apr-16	0	
5174	POUR @ AREA D LVL 3 (6400 SQ FT)	1	28-Apr-16	28-Apr-16	0	
5184	CURE @ AREA D LVL 3 (6400 SQ FT)	2	28-Apr-16	29-Apr-16	0	
5214	WALLS / COLUMNS @ AREA D LVL 3 (6400 SQ FT)	4	29-Apr-16	04-May-16	4	
5194	STRESS @ AREA D LVL 3 (6400 SQ FT)	1	02-May-16	02-May-16	0	
5204	STRIP FORMS @ AREA D LVL 3 (6400 SQ FT)	2	03-May-16	04-May-16	0	
5144	REMOVE RESHORE @ AREA D LVL 3 (6400 SQ FT)	2	01-Jun-16	02-Jun-16	25	
LEVEL 4		53	05-Apr-16	17-Jun-16	28	
AREA A		29	05-Apr-16	13-May-16	52	
HORIZONTAL		29	05-Apr-16	13-May-16	52	
5234	INSTALL FORMS @ AREA A LVL 4 (5600 SQ FT)	3	05-Apr-16	07-Apr-16	24	
5244	INSTALL REBAR / MEP @ AREA A LVL 4 (5600 SQ FT)	2	08-Apr-16	11-Apr-16	24	
5254	POUR @ AREA A LVL 4 (5600 SQ FT)	1	12-Apr-16	12-Apr-16	24	
5264	CURE @ AREA A LVL 4 (5600 SQ FT)	4	12-Apr-16	15-Apr-16	24	
5294	WALLS / COLUMNS @ AREA A LVL 4 (5600 SQ FT)	3	13-Apr-16	15-Apr-16	46	
5274	STRESS @ AREA A LVL 4 (5600 SQ FT)	1	18-Apr-16	18-Apr-16	24	
5284	STRIP FORMS @ AREA A LVL 4 (5600 SQ FT)	2	19-Apr-16	20-Apr-16	24	
5224	REMOVE RESHORE @ AREA A LVL 4 (5600 SQ FT)	2	12-May-16	13-May-16	52	
AREA B		31	11-Apr-16	23-May-16	46	
HORIZONTAL		31	11-Apr-16	23-May-16	46	
5314	INSTALL FORMS @ AREA B LVL 4 (5600 SQ FT)	3	11-Apr-16	13-Apr-16	21	
5324	INSTALL REBAR / MEP @ AREA B LVL 4 (5600 SQ FT)	2	14-Apr-16	15-Apr-16	21	
5334	POUR @ AREA B LVL 4 (5600 SQ FT)	1	18-Apr-16	18-Apr-16	21	
5344	CURE @ AREA B LVL 4 (5600 SQ FT)	3	18-Apr-16	20-Apr-16	21	
5374	WALLS / COLUMNS @ AREA B LVL 4 (5600 SQ FT)	3	19-Apr-16	21-Apr-16	42	
5354	STRESS @ AREA B LVL 4 (5600 SQ FT)	1	21-Apr-16	21-Apr-16	21	
5364	STRIP FORMS @ AREA B LVL 4 (5600 SQ FT)	2	22-Apr-16	25-Apr-16	21	
5304	REMOVE RESHORE @ AREA B LVL 4 (5600 SQ FT)	2	20-May-16	23-May-16	46	
AREA C		30	29-Apr-16	10-Jun-16	33	
HORIZONTAL		30	29-Apr-16	10-Jun-16	33	
5394	INSTALL FORMS @ AREA C LVL 4 (5600 SQ FT)	3	29-Apr-16	03-May-16	8	
5404	INSTALL REBAR / MEP @ AREA C LVL 4 (5600 SQ FT)	2	04-May-16	05-May-16	8	
5414	POUR @ AREA C LVL 4 (5600 SQ FT)	1	06-May-16	06-May-16	8	
5424	CURE @ AREA C LVL 4 (5600 SQ FT)	2	06-May-16	09-May-16	8	
5454	WALLS / COLUMNS @ AREA C LVL 4 (5600 SQ FT)	3	09-May-16	11-May-16	30	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
5434	STRESS @ AREA C LVL 4 (5600 SQ FT)	1	10-May-16	10-May-16	8	
5444	STRIP FORMS @ AREA C LVL 4 (5600 SQ FT)	2	11-May-16	12-May-16	8	
5384	REMOVE RESHORE @ AREA C LVL 4 (5600 SQ FT)	2	09-Jun-16	10-Jun-16	33	
AREA D		31	05-May-16	17-Jun-16	28	
HORIZONTAL		31	05-May-16	17-Jun-16	28	
5474	INSTALL FORMS @ AREA D LVL 4 (5600 SQ FT)	3	05-May-16	09-May-16	4	
5484	INSTALL REBAR / MEP @ AREA D LVL 4 (5600 SQ FT)	2	10-May-16	11-May-16	4	
5494	POUR @ AREA D LVL 4 (5600 SQ FT)	1	12-May-16	12-May-16	4	
5504	CURE @ AREA D LVL 4 (5600 SQ FT)	2	12-May-16	13-May-16	4	
5534	WALLS / COLUMNS @ AREA D LVL 4 (5600 SQ FT)	3	13-May-16	17-May-16	25	
5514	STRESS @ AREA D LVL 4 (5600 SQ FT)	1	16-May-16	16-May-16	4	
5524	STRIP FORMS @ AREA D LVL 4 (5600 SQ FT)	2	17-May-16	18-May-16	4	
5464	REMOVE RESHORE @ AREA D LVL 4 (5600 SQ FT)	2	16-Jun-16	17-Jun-16	28	
LEVEL 5		50	18-Apr-16	27-Jun-16	32	
AREA A		29	18-Apr-16	26-May-16	53	
HORIZONTAL		29	18-Apr-16	26-May-16	53	
5554	INSTALL FORMS @ AREA A LVL 5 (5600 SQ FT)	3	18-Apr-16	20-Apr-16	46	
5564	INSTALL REBAR / MEP @ AREA A LVL 5 (5600 SQ FT)	2	21-Apr-16	22-Apr-16	46	
5574	POUR @ AREA A LVL 5 (5600 SQ FT)	1	25-Apr-16	25-Apr-16	46	
5584	CURE @ AREA A LVL 5 (5600 SQ FT)	4	25-Apr-16	28-Apr-16	46	
5614	WALLS / COLUMNS @ AREA A LVL 5 (5600 SQ FT)	3	26-Apr-16	28-Apr-16	52	
5594	STRESS @ AREA A LVL 5 (5600 SQ FT)	1	29-Apr-16	29-Apr-16	46	
5604	STRIP FORMS @ AREA A LVL 5 (5600 SQ FT)	2	02-May-16	03-May-16	46	
5544	REMOVE RESHORE @ AREA A LVL 5 (5600 SQ FT)	2	25-May-16	26-May-16	53	
AREA B		28	22-Apr-16	01-Jun-16	50	
HORIZONTAL		28	22-Apr-16	01-Jun-16	50	
5634	INSTALL FORMS @ AREA B LVL 5 (5600 SQ FT)	3	22-Apr-16	26-Apr-16	42	
5644	INSTALL REBAR / MEP @ AREA B LVL 5 (5600 SQ FT)	2	27-Apr-16	28-Apr-16	42	
5654	POUR @ AREA B LVL 5 (5600 SQ FT)	1	29-Apr-16	29-Apr-16	42	
5664	CURE @ AREA B LVL 5 (5600 SQ FT)	4	29-Apr-16	04-May-16	42	
5694	WALLS / COLUMNS @ AREA B LVL 5 (5600 SQ FT)	3	02-May-16	04-May-16	46	
5674	STRESS @ AREA B LVL 5 (5600 SQ FT)	1	05-May-16	05-May-16	42	
5684	STRIP FORMS @ AREA B LVL 5 (5600 SQ FT)	2	06-May-16	09-May-16	42	
5624	REMOVE RESHORE @ AREA B LVL 5 (5600 SQ FT)	2	31-May-16	01-Jun-16	50	
AREA C		30	12-May-16	23-Jun-16	34	
HORIZONTAL		30	12-May-16	23-Jun-16	34	
5714	INSTALL FORMS @ AREA C LVL 5 (5600 SQ FT)	3	12-May-16	16-May-16	30	
5724	INSTALL REBAR / MEP @ AREA C LVL 5 (5600 SQ FT)	2	17-May-16	18-May-16	30	
5734	POUR @ AREA C LVL 5 (5600 SQ FT)	1	19-May-16	19-May-16	30	
5744	CURE @ AREA C LVL 5 (5600 SQ FT)	2	19-May-16	20-May-16	30	
5774	WALLS / COLUMNS @ AREA C LVL 5 (5600 SQ FT)	3	20-May-16	24-May-16	33	
5754	STRESS @ AREA C LVL 5 (5600 SQ FT)	1	23-May-16	23-May-16	30	
5764	STRIP FORMS @ AREA C LVL 5 (5600 SQ FT)	2	24-May-16	25-May-16	30	
5704	REMOVE RESHORE @ AREA C LVL 5 (5600 SQ FT)	2	22-Jun-16	23-Jun-16	34	
AREA D		28	18-May-16	27-Jun-16	32	
HORIZONTAL		28	18-May-16	27-Jun-16	32	
5794	INSTALL FORMS @ AREA D LVL 5 (5600 SQ FT)	3	18-May-16	20-May-16	25	
5804	INSTALL REBAR / MEP @ AREA D LVL 5 (5600 SQ FT)	2	23-May-16	24-May-16	25	
5814	POUR @ AREA D LVL 5 (5600 SQ FT)	1	25-May-16	25-May-16	25	
5824	CURE @ AREA D LVL 5 (5600 SQ FT)	3	25-May-16	27-May-16	25	
5854	WALLS / COLUMNS @ AREA D LVL 5 (5600 SQ FT)	3	26-May-16	31-May-16	28	
5834	STRESS @ AREA D LVL 5 (5600 SQ FT)	1	31-May-16	31-May-16	25	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
5844	STRIP FORMS @ AREA D LVL 5 (5600 SQ FT)	2	01-Jun-16	02-Jun-16	25	
5784	REMOVE RESHORE @ AREA D LVL 5 (5600 SQ FT)	2	24-Jun-16	27-Jun-16	32	
LEVEL 6		50	29-Apr-16	11-Jul-16	33	
AREA A		29	29-Apr-16	09-Jun-16	54	
HORIZONTAL		29	29-Apr-16	09-Jun-16	54	
5874	INSTALL FORMS @ AREA A LVL 6 (5600 SQ FT)	3	29-Apr-16	03-May-16	52	
5884	INSTALL REBAR / MEP @ AREA A LVL 6 (5600 SQ FT)	2	04-May-16	05-May-16	52	
5894	POUR @ AREA A LVL 6 (5600 SQ FT)	1	06-May-16	06-May-16	52	
5904	CURE @ AREA A LVL 6 (5600 SQ FT)	2	06-May-16	09-May-16	52	
5934	WALLS / COLUMNS @ AREA A LVL 6 (5600 SQ FT)	3	09-May-16	11-May-16	53	
5914	STRESS @ AREA A LVL 6 (5600 SQ FT)	1	10-May-16	10-May-16	52	
5924	STRIP FORMS @ AREA A LVL 6 (5600 SQ FT)	2	11-May-16	12-May-16	52	
5864	REMOVE RESHORE @ AREA A LVL 6 (5600 SQ FT)	2	08-Jun-16	09-Jun-16	54	
AREA B		29	05-May-16	15-Jun-16	50	
HORIZONTAL		29	05-May-16	15-Jun-16	50	
5954	INSTALL FORMS @ AREA B LVL 6 (5600 SQ FT)	3	05-May-16	09-May-16	46	
5964	INSTALL REBAR / MEP @ AREA B LVL 6 (5600 SQ FT)	2	10-May-16	11-May-16	46	
5974	POUR @ AREA B LVL 6 (5600 SQ FT)	1	12-May-16	12-May-16	46	
5984	CURE @ AREA B LVL 6 (5600 SQ FT)	4	12-May-16	17-May-16	46	
6014	WALLS / COLUMNS @ AREA B LVL 6 (5600 SQ FT)	3	13-May-16	17-May-16	50	
5994	STRESS @ AREA B LVL 6 (5600 SQ FT)	1	18-May-16	18-May-16	46	
6004	STRIP FORMS @ AREA B LVL 6 (5600 SQ FT)	2	19-May-16	20-May-16	46	
5944	REMOVE RESHORE @ AREA B LVL 6 (5600 SQ FT)	2	14-Jun-16	15-Jun-16	50	
AREA C		27	25-May-16	01-Jul-16	38	
HORIZONTAL		27	25-May-16	01-Jul-16	38	
6034	INSTALL FORMS @ AREA C LVL 6 (5600 SQ FT)	3	25-May-16	27-May-16	33	
6044	INSTALL REBAR / MEP @ AREA C LVL 6 (5600 SQ FT)	2	31-May-16	01-Jun-16	33	
6054	POUR @ AREA C LVL 6 (5600 SQ FT)	1	02-Jun-16	02-Jun-16	33	
6064	CURE @ AREA C LVL 6 (5600 SQ FT)	3	02-Jun-16	06-Jun-16	33	
6094	WALLS / COLUMNS @ AREA C LVL 6 (5600 SQ FT)	3	03-Jun-16	07-Jun-16	34	
6074	STRESS @ AREA C LVL 6 (5600 SQ FT)	1	07-Jun-16	07-Jun-16	33	
6084	STRIP FORMS @ AREA C LVL 6 (5600 SQ FT)	2	08-Jun-16	09-Jun-16	33	
6024	REMOVE RESHORE @ AREA C LVL 6 (5600 SQ FT)	2	30-Jun-16	01-Jul-16	38	
AREA D		28	01-Jun-16	11-Jul-16	33	
HORIZONTAL		28	01-Jun-16	11-Jul-16	33	
6114	INSTALL FORMS @ AREA D LVL 6 (5600 SQ FT)	3	01-Jun-16	03-Jun-16	28	
6124	INSTALL REBAR / MEP @ AREA D LVL 6 (5600 SQ FT)	2	06-Jun-16	07-Jun-16	28	
6134	POUR @ AREA D LVL 6 (5600 SQ FT)	1	08-Jun-16	08-Jun-16	28	
6144	CURE @ AREA D LVL 6 (5600 SQ FT)	4	08-Jun-16	13-Jun-16	28	
6174	WALLS / COLUMNS @ AREA D LVL 6 (5600 SQ FT)	3	09-Jun-16	13-Jun-16	32	
6154	STRESS @ AREA D LVL 6 (5600 SQ FT)	1	14-Jun-16	14-Jun-16	28	
6164	STRIP FORMS @ AREA D LVL 6 (5600 SQ FT)	2	15-Jun-16	16-Jun-16	28	
6104	REMOVE RESHORE @ AREA D LVL 6 (5600 SQ FT)	2	08-Jul-16	11-Jul-16	33	
LEVEL 7		50	12-May-16	22-Jul-16	34	
AREA A		27	12-May-16	20-Jun-16	57	
HORIZONTAL		27	12-May-16	20-Jun-16	57	
6194	INSTALL FORMS @ AREA A LVL 7 (4000 SQ FT)	2	12-May-16	13-May-16	53	
6204	INSTALL REBAR / MEP @ AREA A LVL 7 (4000 SQ FT)	2	16-May-16	17-May-16	53	
6214	POUR @ AREA A LVL 7 (4000 SQ FT)	1	18-May-16	18-May-16	53	
6224	CURE @ AREA A LVL 7 (4000 SQ FT)	3	18-May-16	20-May-16	53	
6254	WALLS / COLUMNS @ AREA A LVL 7 (4000 SQ FT)	3	19-May-16	23-May-16	54	
6234	STRESS @ AREA A LVL 7 (4000 SQ FT)	1	23-May-16	23-May-16	53	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
6244	STRIP FORMS @ AREA A LVL 7 (4000 SQ FT)	2	24-May-16	25-May-16	53	
6184	REMOVE RESHORE @ AREA A LVL 7 (4000 SQ FT)	2	17-Jun-16	20-Jun-16	57	
AREA B		29	18-May-16	28-Jun-16	51	
HORIZONTAL		29	18-May-16	28-Jun-16	51	
6274	INSTALL FORMS @ AREA B LVL 7 (4000 SQ FT)	2	18-May-16	19-May-16	50	
6284	INSTALL REBAR / MEP @ AREA B LVL 7 (4000 SQ FT)	2	20-May-16	23-May-16	50	
6294	POUR @ AREA B LVL 7 (4000 SQ FT)	1	24-May-16	24-May-16	50	
6304	CURE @ AREA B LVL 7 (4000 SQ FT)	2	24-May-16	25-May-16	50	
6334	WALLS / COLUMNS @ AREA B LVL 7 (4000 SQ FT)	3	25-May-16	27-May-16	50	
6314	STRESS @ AREA B LVL 7 (4000 SQ FT)	1	26-May-16	26-May-16	50	
6324	STRIP FORMS @ AREA B LVL 7 (4000 SQ FT)	2	27-May-16	31-May-16	50	
6264	REMOVE RESHORE @ AREA B LVL 7 (4000 SQ FT)	2	27-Jun-16	28-Jun-16	51	
AREA C		27	08-Jun-16	15-Jul-16	39	
HORIZONTAL		27	08-Jun-16	15-Jul-16	39	
6354	INSTALL FORMS @ AREA C LVL 7 (4000 SQ FT)	2	08-Jun-16	09-Jun-16	34	
6364	INSTALL REBAR / MEP @ AREA C LVL 7 (4000 SQ FT)	2	10-Jun-16	13-Jun-16	34	
6374	POUR @ AREA C LVL 7 (4000 SQ FT)	1	14-Jun-16	14-Jun-16	34	
6384	CURE @ AREA C LVL 7 (4000 SQ FT)	4	14-Jun-16	17-Jun-16	34	
6414	WALLS / COLUMNS @ AREA C LVL 7 (4000 SQ FT)	3	15-Jun-16	17-Jun-16	38	
6394	STRESS @ AREA C LVL 7 (4000 SQ FT)	1	20-Jun-16	20-Jun-16	34	
6674	INSTALL FORMS @ AREA C LVL 8 (4000 SQ FT)	2	20-Jun-16	21-Jun-16	38	
6404	STRIP FORMS @ AREA C LVL 7 (4000 SQ FT)	2	21-Jun-16	22-Jun-16	34	
6344	REMOVE RESHORE @ AREA C LVL 7 (4000 SQ FT)	2	14-Jul-16	15-Jul-16	39	
AREA D		28	14-Jun-16	22-Jul-16	34	
HORIZONTAL		28	14-Jun-16	22-Jul-16	34	
6434	INSTALL FORMS @ AREA D LVL 7 (4000 SQ FT)	2	14-Jun-16	15-Jun-16	32	
6444	INSTALL REBAR / MEP @ AREA D LVL 7 (4000 SQ FT)	2	16-Jun-16	17-Jun-16	32	
6454	POUR @ AREA D LVL 7 (4000 SQ FT)	1	20-Jun-16	20-Jun-16	32	
6464	CURE @ AREA D LVL 7 (4000 SQ FT)	2	20-Jun-16	21-Jun-16	32	
6494	WALLS / COLUMNS @ AREA D LVL 7 (4000 SQ FT)	3	21-Jun-16	23-Jun-16	33	
6474	STRESS @ AREA D LVL 7 (4000 SQ FT)	1	22-Jun-16	22-Jun-16	32	
6484	STRIP FORMS @ AREA D LVL 7 (4000 SQ FT)	2	23-Jun-16	24-Jun-16	32	
6424	REMOVE RESHORE @ AREA D LVL 7 (4000 SQ FT)	2	21-Jul-16	22-Jul-16	34	
LEVEL 8		42	24-May-16	22-Jul-16	44	
AREA A		19	24-May-16	20-Jun-16	67	
HORIZONTAL		19	24-May-16	20-Jun-16	67	
6514	INSTALL FORMS @ AREA A LVL 8 (4000 SQ FT)	2	24-May-16	25-May-16	54	
6524	INSTALL REBAR / MEP @ AREA A LVL 8 (4000 SQ FT)	2	26-May-16	27-May-16	54	
6534	POUR @ AREA A LVL 8 (4000 SQ FT)	1	31-May-16	31-May-16	54	
6544	CURE @ AREA A LVL 8 (4000 SQ FT)	4	31-May-16	03-Jun-16	54	
6574	WALLS / COLUMNS @ AREA A LVL 8 (4000 SQ FT)	3	01-Jun-16	03-Jun-16	57	
6554	STRESS @ AREA A LVL 8 (4000 SQ FT)	1	06-Jun-16	06-Jun-16	54	
6564	STRIP FORMS @ AREA A LVL 8 (4000 SQ FT)	2	07-Jun-16	08-Jun-16	54	
6504	REMOVE RESHORE @ AREA A LVL 8 (4000 SQ FT)	2	17-Jun-16	20-Jun-16	67	
AREA B		21	31-May-16	28-Jun-16	61	
HORIZONTAL		21	31-May-16	28-Jun-16	61	
6594	INSTALL FORMS @ AREA B LVL 8 (4000 SQ FT)	2	31-May-16	01-Jun-16	50	
6604	INSTALL REBAR / MEP @ AREA B LVL 8 (4000 SQ FT)	2	02-Jun-16	03-Jun-16	50	
6614	POUR @ AREA B LVL 8 (4000 SQ FT)	1	06-Jun-16	06-Jun-16	50	
6624	CURE @ AREA B LVL 8 (4000 SQ FT)	4	06-Jun-16	09-Jun-16	50	
6654	WALLS / COLUMNS @ AREA B LVL 8 (4000 SQ FT)	3	07-Jun-16	09-Jun-16	51	
6634	STRESS @ AREA B LVL 8 (4000 SQ FT)	1	10-Jun-16	10-Jun-16	50	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

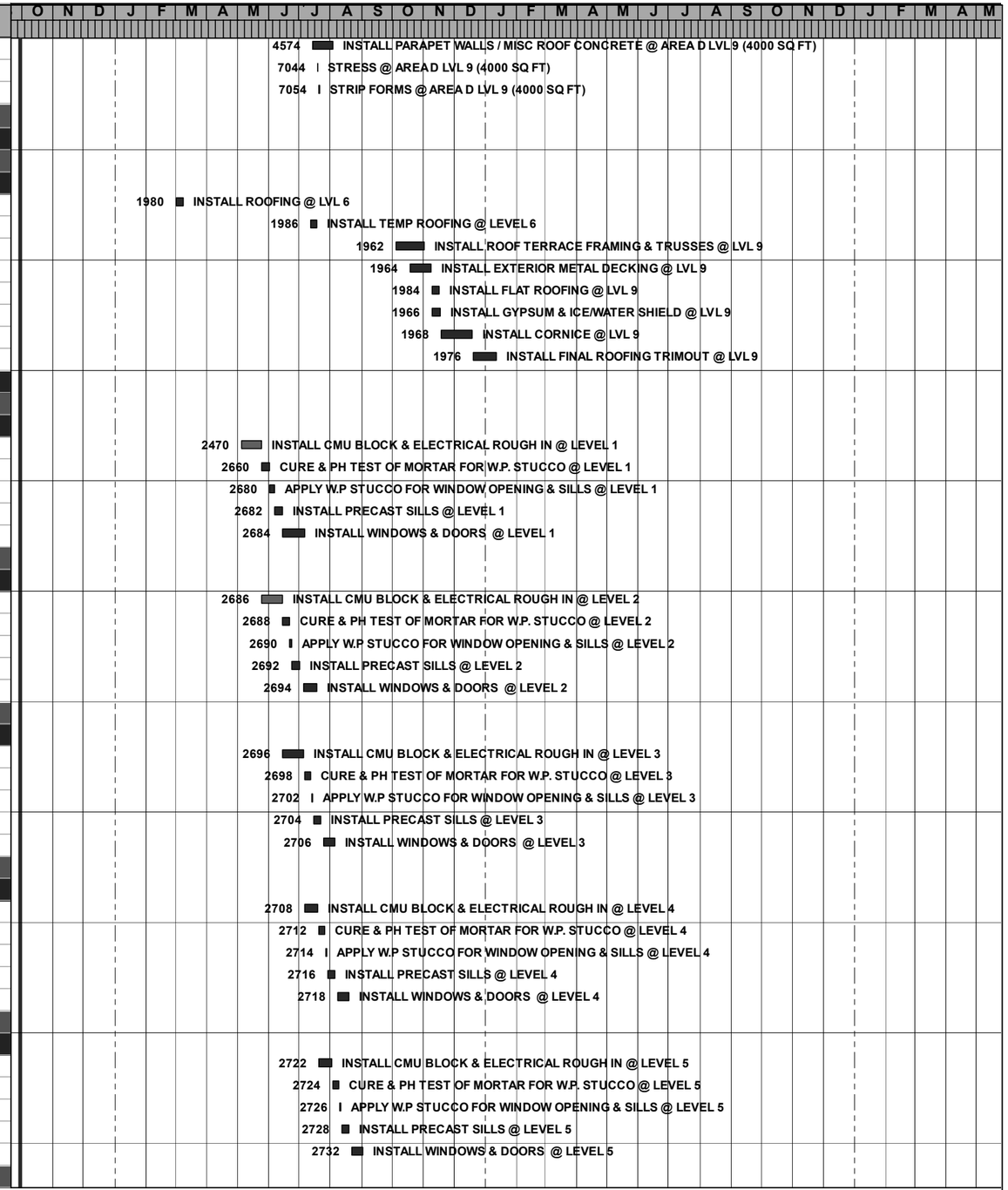
TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
6644	STRIP FORMS @ AREA B LVL 8 (4000 SQ FT)	2	13-Jun-16	14-Jun-16	50	
6584	REMOVE RESHORE @ AREA B LVL 8 (4000 SQ FT)	2	27-Jun-16	28-Jun-16	61	
AREA C		17	22-Jun-16	15-Jul-16	49	
HORIZONTAL		17	22-Jun-16	15-Jul-16	49	
6684	INSTALL REBAR / MEP @ AREA C LVL 8 (4000 SQ FT)	2	22-Jun-16	23-Jun-16	38	
6694	POUR @ AREA C LVL 8 (4000 SQ FT)	1	24-Jun-16	24-Jun-16	38	
6704	CURE @ AREA C LVL 8 (4000 SQ FT)	2	24-Jun-16	27-Jun-16	38	
6734	WALLS / COLUMNS @ AREA C LVL 8 (4000 SQ FT)	3	27-Jun-16	29-Jun-16	39	
6714	STRESS @ AREA C LVL 8 (4000 SQ FT)	1	28-Jun-16	28-Jun-16	38	
6724	STRIP FORMS @ AREA C LVL 8 (4000 SQ FT)	2	29-Jun-16	30-Jun-16	38	
6664	REMOVE RESHORE @ AREA C LVL 8 (4000 SQ FT)	2	14-Jul-16	15-Jul-16	49	
AREA D		20	24-Jun-16	22-Jul-16	44	
HORIZONTAL		20	24-Jun-16	22-Jul-16	44	
6754	INSTALL FORMS @ AREA D LVL 8 (4000 SQ FT)	2	24-Jun-16	27-Jun-16	33	
6764	INSTALL REBAR / MEP @ AREA D LVL 8 (4000 SQ FT)	2	28-Jun-16	29-Jun-16	33	
6774	POUR @ AREA D LVL 8 (4000 SQ FT)	1	30-Jun-16	30-Jun-16	33	
6784	CURE @ AREA D LVL 8 (4000 SQ FT)	3	30-Jun-16	05-Jul-16	33	
6814	WALLS / COLUMNS @ AREA D LVL 8 (4000 SQ FT)	3	01-Jul-16	06-Jul-16	34	
6794	STRESS @ AREA D LVL 8 (4000 SQ FT)	1	06-Jul-16	06-Jul-16	33	
6804	STRIP FORMS @ AREA D LVL 8 (4000 SQ FT)	2	07-Jul-16	08-Jul-16	33	
6744	REMOVE RESHORE @ AREA D LVL 8 (4000 SQ FT)	2	21-Jul-16	22-Jul-16	44	
LEVEL 9		42	06-Jun-16	03-Aug-16	60	
AREA A		10	06-Jun-16	17-Jun-16	57	
HORIZONTAL		10	06-Jun-16	17-Jun-16	57	
6824	INSTALL FORMS @ AREA A LVL 9 (4000 SQ FT)	3	06-Jun-16	08-Jun-16	57	
6834	INSTALL REBAR / MEP @ AREA A LVL 9 (4000 SQ FT)	2	09-Jun-16	10-Jun-16	57	
6844	POUR @ AREA A LVL 9 (4000 SQ FT)	1	13-Jun-16	13-Jun-16	57	
6854	CURE @ AREA A LVL 9 (4000 SQ FT)	2	13-Jun-16	14-Jun-16	57	
6864	STRESS @ AREA A LVL 9 (4000 SQ FT)	1	15-Jun-16	15-Jun-16	57	
6874	STRIP FORMS @ AREA A LVL 9 (4000 SQ FT)	2	16-Jun-16	17-Jun-16	57	
AREA B		12	10-Jun-16	27-Jun-16	51	
HORIZONTAL		12	10-Jun-16	27-Jun-16	51	
6884	INSTALL FORMS @ AREA B LVL 9 (4000 SQ FT)	3	10-Jun-16	14-Jun-16	51	
6894	INSTALL REBAR / MEP @ AREA B LVL 9 (4000 SQ FT)	2	15-Jun-16	16-Jun-16	51	
6904	POUR @ AREA B LVL 9 (4000 SQ FT)	1	17-Jun-16	17-Jun-16	51	
6914	CURE @ AREA B LVL 9 (4000 SQ FT)	4	17-Jun-16	22-Jun-16	51	
6924	STRESS @ AREA B LVL 9 (4000 SQ FT)	1	23-Jun-16	23-Jun-16	51	
6934	STRIP FORMS @ AREA B LVL 9 (4000 SQ FT)	2	24-Jun-16	27-Jun-16	51	
AREA C		10	30-Jun-16	14-Jul-16	39	
HORIZONTAL		10	30-Jun-16	14-Jul-16	39	
6944	INSTALL FORMS @ AREA C LVL 9 (4000 SQ FT)	3	30-Jun-16	05-Jul-16	39	
6954	INSTALL REBAR / MEP @ AREA C LVL 9 (4000 SQ FT)	2	06-Jul-16	07-Jul-16	39	
6964	POUR @ AREA C LVL 9 (4000 SQ FT)	1	08-Jul-16	08-Jul-16	39	
6974	CURE @ AREA C LVL 9 (4000 SQ FT)	2	08-Jul-16	11-Jul-16	39	
6984	STRESS @ AREA C LVL 9 (4000 SQ FT)	1	12-Jul-16	12-Jul-16	39	
6994	STRIP FORMS @ AREA C LVL 9 (4000 SQ FT)	2	13-Jul-16	14-Jul-16	39	
AREA D		20	07-Jul-16	03-Aug-16	60	
HORIZONTAL		20	07-Jul-16	03-Aug-16	60	
7004	INSTALL FORMS @ AREA D LVL 9 (4000 SQ FT)	3	07-Jul-16	11-Jul-16	34	
7014	INSTALL REBAR / MEP @ AREA D LVL 9 (4000 SQ FT)	1	12-Jul-16	12-Jul-16	34	
7024	POUR @ AREA D LVL 9 (4000 SQ FT)	1	13-Jul-16	13-Jul-16	34	
7034	CURE @ AREA D LVL 9 (4000 SQ FT)	4	13-Jul-16	18-Jul-16	34	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

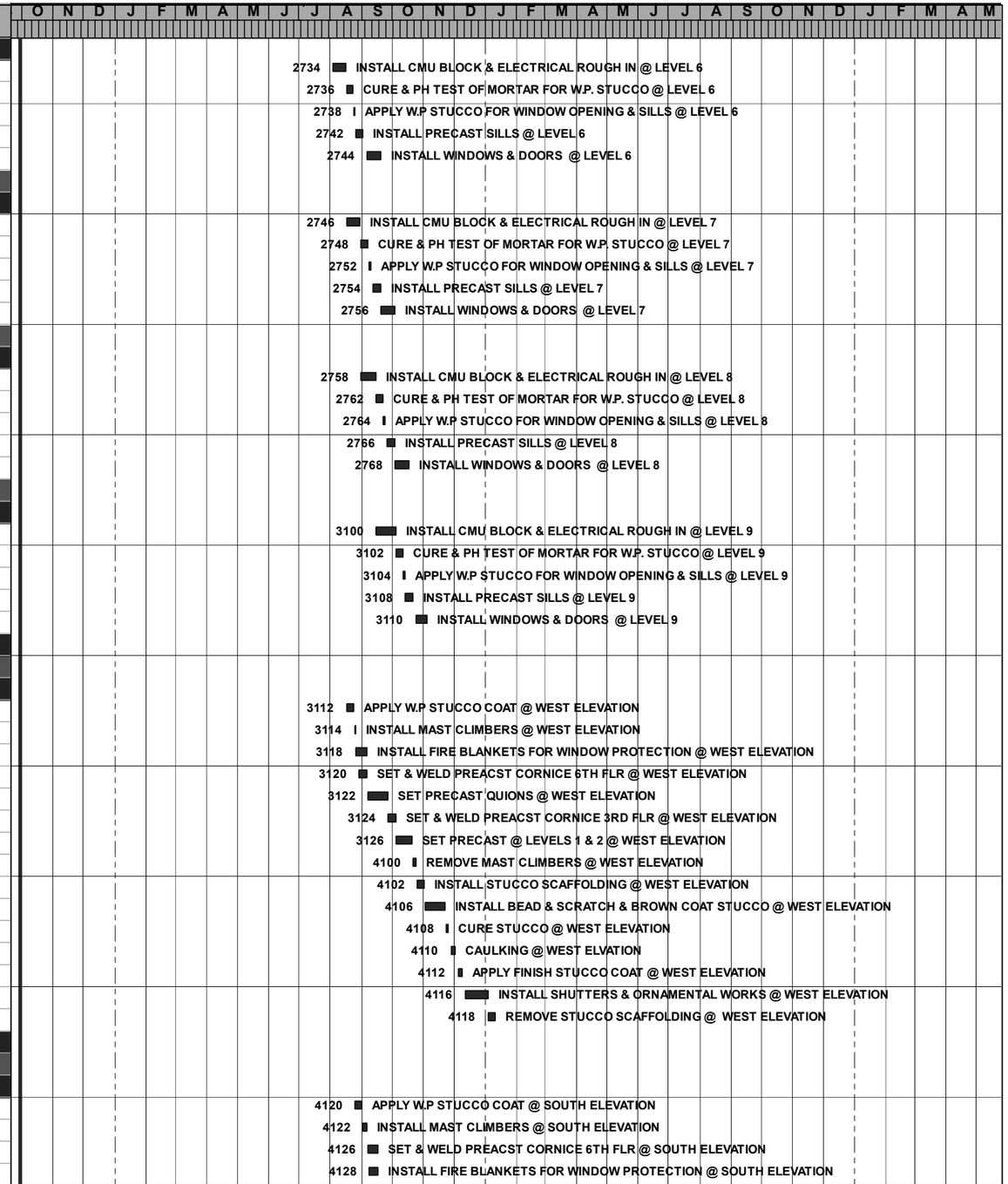
R - 16944

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
4574	INSTALL PARAPET WALLS / MISC ROOF CONCRETE @ AREA D LVL 9 (4000 SQ FT)	15	14-Jul-16	03-Aug-16	60	
7044	STRESS @ AREA D LVL 9 (4000 SQ FT)	1	19-Jul-16	19-Jul-16	34	
7054	STRIP FORMS @ AREA D LVL 9 (4000 SQ FT)	2	20-Jul-16	21-Jul-16	34	
EXTERIOR ENVELOPE		233	02-Mar-16	31-Jan-17	22	
		219	02-Mar-16	11-Jan-17	20	
		219	02-Mar-16	11-Jan-17	20	
		219	02-Mar-16	11-Jan-17	20	
1980	INSTALL ROOFING @ LVL 6	5	02-Mar-16	08-Mar-16	234	
1986	INSTALL TEMP ROOFING @ LEVEL 6	5	12-Jul-16	18-Jul-16	100	
1962	INSTALL ROOF TERRACE FRAMING & TRUSSES @ LVL 9	20	05-Oct-16	01-Nov-16	17	
1964	INSTALL EXTERIOR METAL DECKING @ LVL 9	15	19-Oct-16	08-Nov-16	17	
1984	INSTALL FLAT ROOFING @ LVL 9	6	09-Nov-16	16-Nov-16	17	
1966	INSTALL GYPSUM & ICE/WATER SHIELD @ LVL 9	7	09-Nov-16	17-Nov-16	20	
1968	INSTALL CORNICE @ LVL 9	20	18-Nov-16	19-Dec-16	20	
1976	INSTALL FINAL ROOFING TRIMOUT @ LVL 9	15	20-Dec-16	11-Jan-17	20	
WEST, SOUTH, EAST AND NORTH ELEVATIONS FROM INTERIOR		129	05-May-16	04-Nov-16	64	
LEVEL 1		43	05-May-16	06-Jul-16	108	
		43	05-May-16	06-Jul-16	108	
2470	INSTALL CMU BLOCK & ELECTRICAL ROUGH IN @ LEVEL 1	14	05-May-16	24-May-16	0	
2660	CURE & PH TEST OF MORTAR FOR W.P. STUCCO @ LEVEL 1	5	25-May-16	01-Jun-16	108	
2680	APPLY W.P STUCCO FOR WINDOW OPENING & SILLS @ LEVEL 1	3	02-Jun-16	06-Jun-16	108	
2682	INSTALL PRECAST SILLS @ LEVEL 1	6	07-Jun-16	14-Jun-16	108	
2684	INSTALL WINDOWS & DOORS @ LEVEL 1	15	15-Jun-16	06-Jul-16	108	
LEVEL 2		37	25-May-16	18-Jul-16	88	
		37	25-May-16	18-Jul-16	88	
2686	INSTALL CMU BLOCK & ELECTRICAL ROUGH IN @ LEVEL 2	14	25-May-16	14-Jun-16	0	
2688	CURE & PH TEST OF MORTAR FOR W.P. STUCCO @ LEVEL 2	5	15-Jun-16	21-Jun-16	88	
2690	APPLY W.P STUCCO FOR WINDOW OPENING & SILLS @ LEVEL 2	2	22-Jun-16	23-Jun-16	88	
2692	INSTALL PRECAST SILLS @ LEVEL 2	6	24-Jun-16	01-Jul-16	88	
2694	INSTALL WINDOWS & DOORS @ LEVEL 2	10	05-Jul-16	18-Jul-16	88	
LEVEL 3		37	15-Jun-16	05-Aug-16	53	
		37	15-Jun-16	05-Aug-16	53	
2696	INSTALL CMU BLOCK & ELECTRICAL ROUGH IN @ LEVEL 3	14	15-Jun-16	05-Jul-16	17	
2698	CURE & PH TEST OF MORTAR FOR W.P. STUCCO @ LEVEL 3	5	06-Jul-16	12-Jul-16	53	
2702	APPLY W.P STUCCO FOR WINDOW OPENING & SILLS @ LEVEL 3	2	13-Jul-16	14-Jul-16	53	
2704	INSTALL PRECAST SILLS @ LEVEL 3	6	15-Jul-16	22-Jul-16	53	
2706	INSTALL WINDOWS & DOORS @ LEVEL 3	10	25-Jul-16	05-Aug-16	53	
LEVEL 4		33	06-Jul-16	19-Aug-16	53	
		33	06-Jul-16	19-Aug-16	53	
2708	INSTALL CMU BLOCK & ELECTRICAL ROUGH IN @ LEVEL 4	10	06-Jul-16	19-Jul-16	17	
2712	CURE & PH TEST OF MORTAR FOR W.P. STUCCO @ LEVEL 4	5	20-Jul-16	26-Jul-16	53	
2714	APPLY W.P STUCCO FOR WINDOW OPENING & SILLS @ LEVEL 4	2	27-Jul-16	28-Jul-16	53	
2716	INSTALL PRECAST SILLS @ LEVEL 4	6	29-Jul-16	05-Aug-16	53	
2718	INSTALL WINDOWS & DOORS @ LEVEL 4	10	08-Aug-16	19-Aug-16	53	
LEVEL 5		33	20-Jul-16	02-Sep-16	53	
		33	20-Jul-16	02-Sep-16	53	
2722	INSTALL CMU BLOCK & ELECTRICAL ROUGH IN @ LEVEL 5	10	20-Jul-16	02-Aug-16	17	
2724	CURE & PH TEST OF MORTAR FOR W.P. STUCCO @ LEVEL 5	5	03-Aug-16	09-Aug-16	53	
2726	APPLY W.P STUCCO FOR WINDOW OPENING & SILLS @ LEVEL 5	2	10-Aug-16	11-Aug-16	53	
2728	INSTALL PRECAST SILLS @ LEVEL 5	6	12-Aug-16	19-Aug-16	53	
2732	INSTALL WINDOWS & DOORS @ LEVEL 5	10	22-Aug-16	02-Sep-16	53	
LEVEL 6		33	03-Aug-16	19-Sep-16	53	



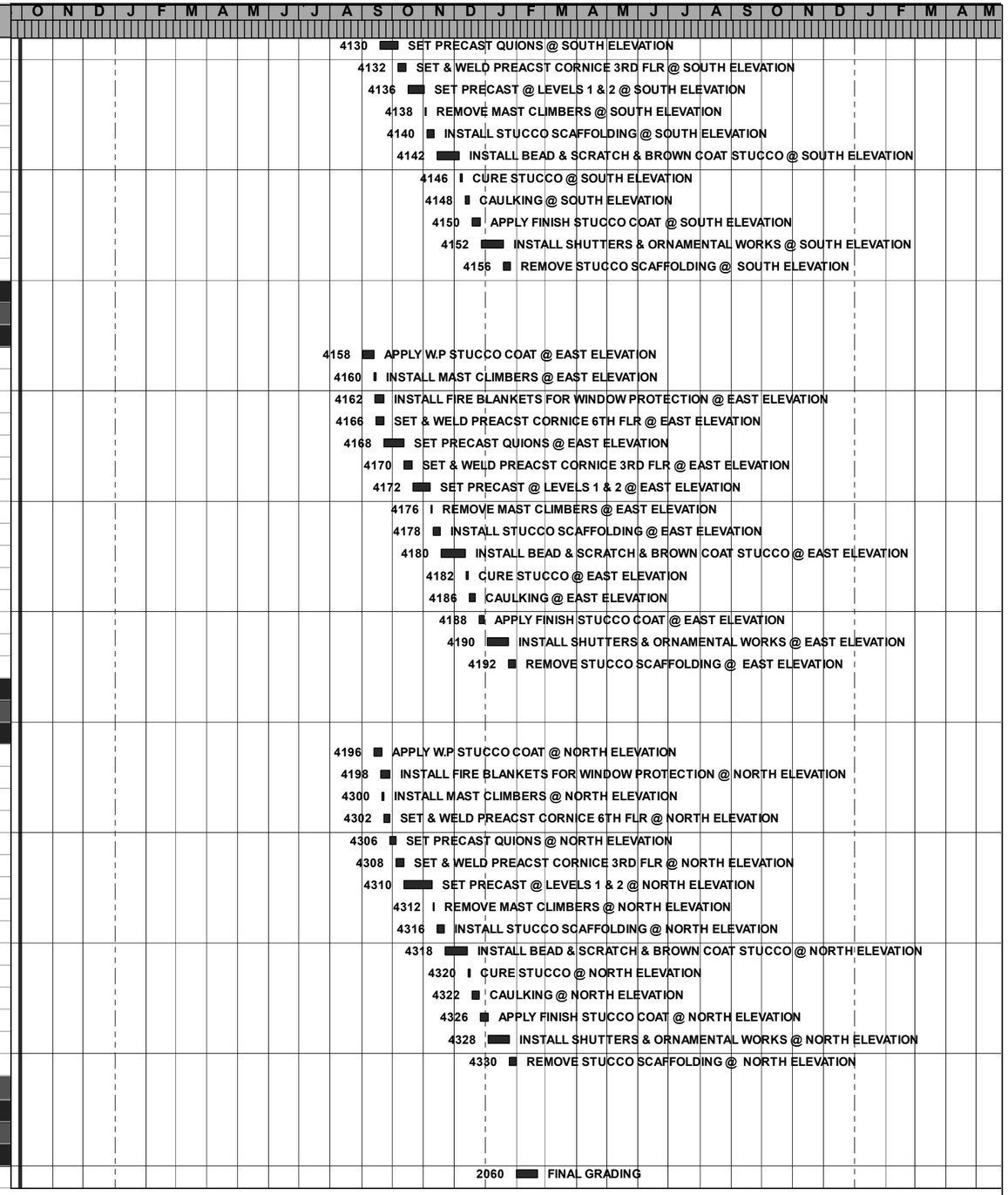
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
		33	03-Aug-16	19-Sep-16	53	
2734	INSTALL CMU BLOCK & ELECTRICAL ROUGH IN @ LEVEL 6	10	03-Aug-16	16-Aug-16	17	WAS 15 NEED TO DO IN
2736	CURE & PH TEST OF MORTAR FOR W.P. STUCCO @ LEVEL 6	5	17-Aug-16	23-Aug-16	53	
2738	APPLY W.P STUCCO FOR WINDOW OPENING & SILLS @ LEVEL 6	2	24-Aug-16	25-Aug-16	53	
2742	INSTALL PRECAST SILLS @ LEVEL 6	6	26-Aug-16	02-Sep-16	53	
2744	INSTALL WINDOWS & DOORS @ LEVEL 6	10	06-Sep-16	19-Sep-16	53	
LEVEL 7		33	17-Aug-16	03-Oct-16	53	
		33	17-Aug-16	03-Oct-16	53	
2746	INSTALL CMU BLOCK & ELECTRICAL ROUGH IN @ LEVEL 7	10	17-Aug-16	30-Aug-16	17	
2748	CURE & PH TEST OF MORTAR FOR W.P. STUCCO @ LEVEL 7	5	31-Aug-16	07-Sep-16	53	
2752	APPLY W.P STUCCO FOR WINDOW OPENING & SILLS @ LEVEL 7	2	08-Sep-16	09-Sep-16	53	
2754	INSTALL PRECAST SILLS @ LEVEL 7	6	12-Sep-16	19-Sep-16	53	
2756	INSTALL WINDOWS & DOORS @ LEVEL 7	10	20-Sep-16	03-Oct-16	53	
LEVEL 8		33	31-Aug-16	17-Oct-16	53	
		33	31-Aug-16	17-Oct-16	53	
2758	INSTALL CMU BLOCK & ELECTRICAL ROUGH IN @ LEVEL 8	10	31-Aug-16	14-Sep-16	17	
2762	CURE & PH TEST OF MORTAR FOR W.P. STUCCO @ LEVEL 8	5	15-Sep-16	21-Sep-16	53	
2764	APPLY W.P STUCCO FOR WINDOW OPENING & SILLS @ LEVEL 8	2	22-Sep-16	23-Sep-16	53	
2766	INSTALL PRECAST SILLS @ LEVEL 8	6	26-Sep-16	03-Oct-16	53	
2768	INSTALL WINDOWS & DOORS @ LEVEL 8	10	04-Oct-16	17-Oct-16	53	
LEVEL 9		37	15-Sep-16	04-Nov-16	64	
		37	15-Sep-16	04-Nov-16	64	
3100	INSTALL CMU BLOCK & ELECTRICAL ROUGH IN @ LEVEL 9	14	15-Sep-16	04-Oct-16	17	
3102	CURE & PH TEST OF MORTAR FOR W.P. STUCCO @ LEVEL 9	5	05-Oct-16	11-Oct-16	64	
3104	APPLY W.P STUCCO FOR WINDOW OPENING & SILLS @ LEVEL 9	2	12-Oct-16	13-Oct-16	64	
3108	INSTALL PRECAST SILLS @ LEVEL 9	6	14-Oct-16	21-Oct-16	64	
3110	INSTALL WINDOWS & DOORS @ LEVEL 9	10	24-Oct-16	04-Nov-16	64	LOOK AT TIE TO STUCC
WEST ELEVATION		100	17-Aug-16	10-Jan-17	37	
		100	17-Aug-16	10-Jan-17	37	
		100	17-Aug-16	10-Jan-17	37	
3112	APPLY W.P STUCCO COAT @ WEST ELEVATION	6	17-Aug-16	24-Aug-16	21	CHECK NOTES & SUB
3114	INSTALL MAST CLIMBERS @ WEST ELEVATION	2	25-Aug-16	26-Aug-16	35	
3118	INSTALL FIRE BLANKETS FOR WINDOW PROTECTION @ WEST ELEVATION	7	26-Aug-16	06-Sep-16	35	
3120	SET & WELD PREACST CORNICE 6TH FLR @ WEST ELEVATION	6	29-Aug-16	06-Sep-16	35	
3122	SET PRECAST QUIONS @ WEST ELEVATION	14	07-Sep-16	26-Sep-16	35	
3124	SET & WELD PREACST CORNICE 3RD FLR @ WEST ELEVATION	6	27-Sep-16	04-Oct-16	35	
3126	SET PRECAST @ LEVELS 1 & 2 @ WEST ELEVATION	12	05-Oct-16	20-Oct-16	35	
4100	REMOVE MAST CLIMBERS @ WEST ELEVATION	2	21-Oct-16	24-Oct-16	35	
4102	INSTALL STUCCO SCAFFOLDING @ WEST ELEVATION	6	25-Oct-16	01-Nov-16	35	
4106	INSTALL BEAD & SCRATCH & BROWN COAT STUCCO @ WEST ELEVATION	15	02-Nov-16	22-Nov-16	35	
4108	CURE STUCCO @ WEST ELEVATION	3	23-Nov-16	25-Nov-16	55	
4110	CAULKING @ WEST ELVATION	5	28-Nov-16	02-Dec-16	37	
4112	APPLY FINISH STUCCO COAT @ WEST ELEVATION	5	05-Dec-16	09-Dec-16	37	
4116	INSTALL SHUTTERS & ORNAMENTAL WORKS @ WEST ELEVATION	15	12-Dec-16	03-Jan-17	37	
4118	REMOVE STUCCO SCAFFOLDING @ WEST ELEVATION	5	04-Jan-17	10-Jan-17	37	
SOUTH ELEVATION		105	25-Aug-16	25-Jan-17	26	
		105	25-Aug-16	25-Jan-17	26	
		105	25-Aug-16	25-Jan-17	26	
4120	APPLY W.P STUCCO COAT @ SOUTH ELEVATION	6	25-Aug-16	01-Sep-16	21	
4122	INSTALL MAST CLIMBERS @ SOUTH ELEVATION	2	02-Sep-16	06-Sep-16	26	
4126	SET & WELD PREACST CORNICE 6TH FLR @ SOUTH ELEVATION	8	07-Sep-16	16-Sep-16	26	
4128	INSTALL FIRE BLANKETS FOR WINDOW PROTECTION @ SOUTH ELEVATION	7	08-Sep-16	16-Sep-16	26	



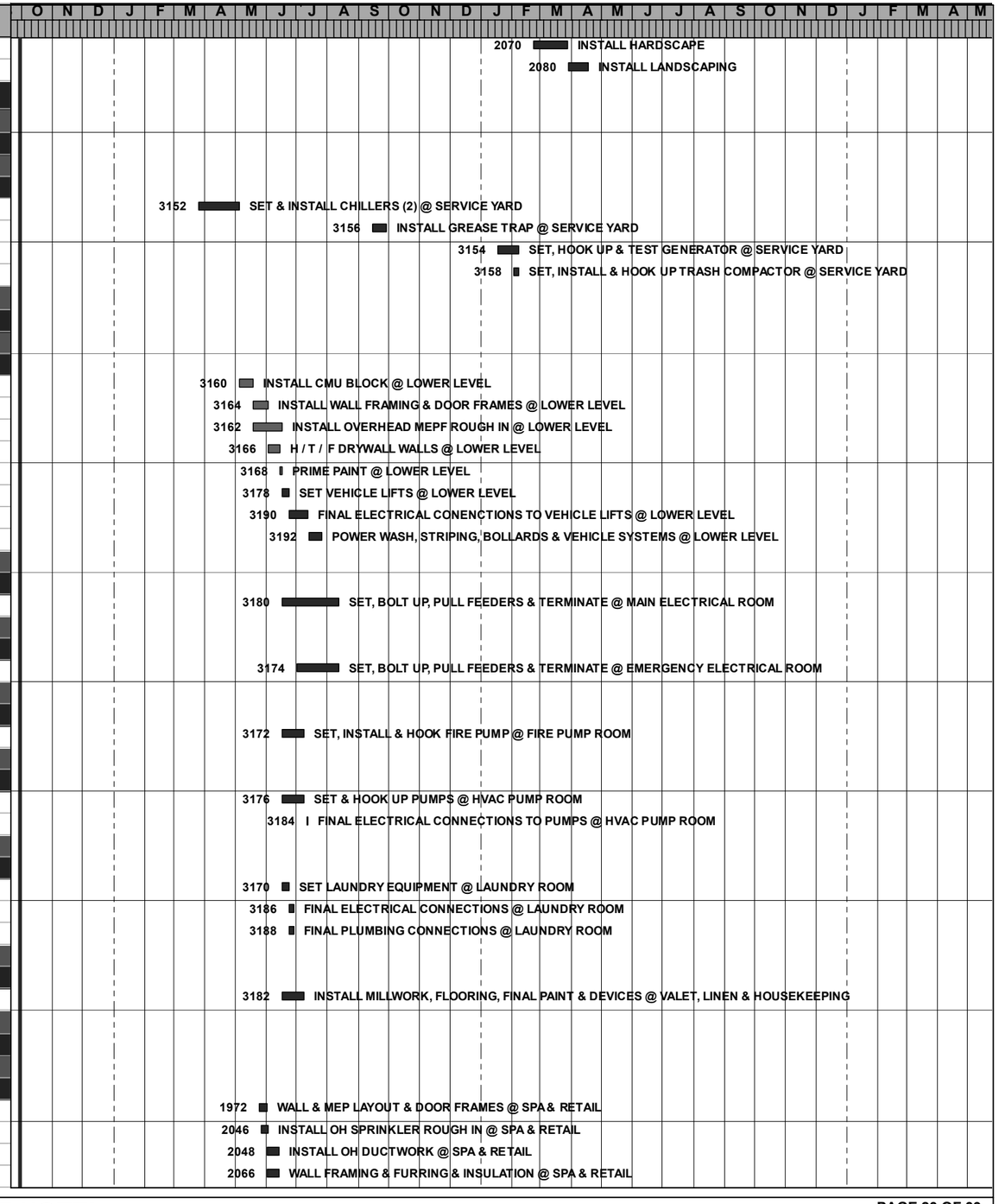
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
4130	SET PRECAST QUIONS @ SOUTH ELEVATION	14	19-Sep-16	06-Oct-16	26	
4132	SET & WELD PREACST CORNICE 3RD FLR @ SOUTH ELEVATION	6	07-Oct-16	14-Oct-16	26	
4136	SET PRECAST @ LEVELS 1 & 2 @ SOUTH ELEVATION	12	17-Oct-16	01-Nov-16	26	
4138	REMOVE MAST CLIMBERS @ SOUTH ELEVATION	2	02-Nov-16	03-Nov-16	26	
4140	INSTALL STUCCO SCAFFOLDING @ SOUTH ELEVATION	6	04-Nov-16	11-Nov-16	26	
4142	INSTALL BEAD & SCRATCH & BROWN COAT STUCCO @ SOUTH ELEVATION	15	14-Nov-16	06-Dec-16	26	
4146	CURE STUCCO @ SOUTH ELEVATION	3	07-Dec-16	09-Dec-16	40	
4148	CAULKING @ SOUTH ELEVATION	5	12-Dec-16	16-Dec-16	26	
4150	APPLY FINISH STUCCO COAT @ SOUTH ELEVATION	6	19-Dec-16	27-Dec-16	26	
4152	INSTALL SHUTTERS & ORNAMENTAL WORKS @ SOUTH ELEVATION	15	28-Dec-16	18-Jan-17	26	
4156	REMOVE STUCCO SCAFFOLDING @ SOUTH ELEVATION	5	19-Jan-17	25-Jan-17	26	
EAST ELEVATION		102	02-Sep-16	30-Jan-17	23	
		102	02-Sep-16	30-Jan-17	23	
		102	02-Sep-16	30-Jan-17	23	
4158	APPLY W.P STUCCO COAT @ EAST ELEVATION	6	02-Sep-16	12-Sep-16	21	
4160	INSTALL MAST CLIMBERS @ EAST ELEVATION	2	13-Sep-16	14-Sep-16	23	
4162	INSTALL FIRE BLANKETS FOR WINDOW PROTECTION @ EAST ELEVATION	7	14-Sep-16	22-Sep-16	23	
4166	SET & WELD PREACST CORNICE 6TH FLR @ EAST ELEVATION	6	15-Sep-16	22-Sep-16	23	
4168	SET PRECAST QUIONS @ EAST ELEVATION	14	23-Sep-16	12-Oct-16	23	
4170	SET & WELD PREACST CORNICE 3RD FLR @ EAST ELEVATION	6	13-Oct-16	20-Oct-16	23	
4172	SET PRECAST @ LEVELS 1 & 2 @ EAST ELEVATION	12	21-Oct-16	07-Nov-16	23	
4176	REMOVE MAST CLIMBERS @ EAST ELEVATION	2	08-Nov-16	09-Nov-16	23	
4178	INSTALL STUCCO SCAFFOLDING @ EAST ELEVATION	6	10-Nov-16	17-Nov-16	23	
4180	INSTALL BEAD & SCRATCH & BROWN COAT STUCCO @ EAST ELEVATION	15	18-Nov-16	12-Dec-16	23	
4182	CURE STUCCO @ EAST ELEVATION	3	13-Dec-16	15-Dec-16	35	
4186	CAULKING @ EAST ELEVATION	5	16-Dec-16	22-Dec-16	23	
4188	APPLY FINISH STUCCO COAT @ EAST ELEVATION	5	26-Dec-16	30-Dec-16	23	
4190	INSTALL SHUTTERS & ORNAMENTAL WORKS @ EAST ELEVATION	15	03-Jan-17	23-Jan-17	23	
4192	REMOVE STUCCO SCAFFOLDING @ EAST ELEVATION	5	24-Jan-17	30-Jan-17	23	
NORTH ELEVATION		97	13-Sep-16	31-Jan-17	22	
		97	13-Sep-16	31-Jan-17	22	
		97	13-Sep-16	31-Jan-17	22	
4196	APPLY W.P STUCCO COAT @ NORTH ELEVATION	6	13-Sep-16	20-Sep-16	21	
4198	INSTALL FIRE BLANKETS FOR WINDOW PROTECTION @ NORTH ELEVATION	7	20-Sep-16	28-Sep-16	21	
4300	INSTALL MAST CLIMBERS @ NORTH ELEVATION	2	21-Sep-16	22-Sep-16	21	
4302	SET & WELD PREACST CORNICE 6TH FLR @ NORTH ELEVATION	4	23-Sep-16	28-Sep-16	21	
4306	SET PRECAST QUIONS @ NORTH ELEVATION	4	29-Sep-16	04-Oct-16	21	
4308	SET & WELD PREACST CORNICE 3RD FLR @ NORTH ELEVATION	6	05-Oct-16	12-Oct-16	21	
4310	SET PRECAST @ LEVELS 1 & 2 @ NORTH ELEVATION	20	13-Oct-16	09-Nov-16	21	
4312	REMOVE MAST CLIMBERS @ NORTH ELEVATION	2	10-Nov-16	11-Nov-16	21	
4316	INSTALL STUCCO SCAFFOLDING @ NORTH ELEVATION	6	14-Nov-16	21-Nov-16	21	
4318	INSTALL BEAD & SCRATCH & BROWN COAT STUCCO @ NORTH ELEVATION	15	22-Nov-16	14-Dec-16	21	
4320	CURE STUCCO @ NORTH ELEVATION	3	15-Dec-16	17-Dec-16	33	
4322	CAULKING @ NORTH ELEVATION	5	19-Dec-16	26-Dec-16	22	
4326	APPLY FINISH STUCCO COAT @ NORTH ELEVATION	5	27-Dec-16	03-Jan-17	22	
4328	INSTALL SHUTTERS & ORNAMENTAL WORKS @ NORTH ELEVATION	15	04-Jan-17	24-Jan-17	22	
4330	REMOVE STUCCO SCAFFOLDING @ NORTH ELEVATION	5	25-Jan-17	31-Jan-17	22	
FINISH SITEWORK		55	01-Feb-17	18-Apr-17	22	
		55	01-Feb-17	18-Apr-17	22	
		55	01-Feb-17	18-Apr-17	22	
		55	01-Feb-17	18-Apr-17	22	
2060	FINAL GRADING	15	01-Feb-17	21-Feb-17	22	



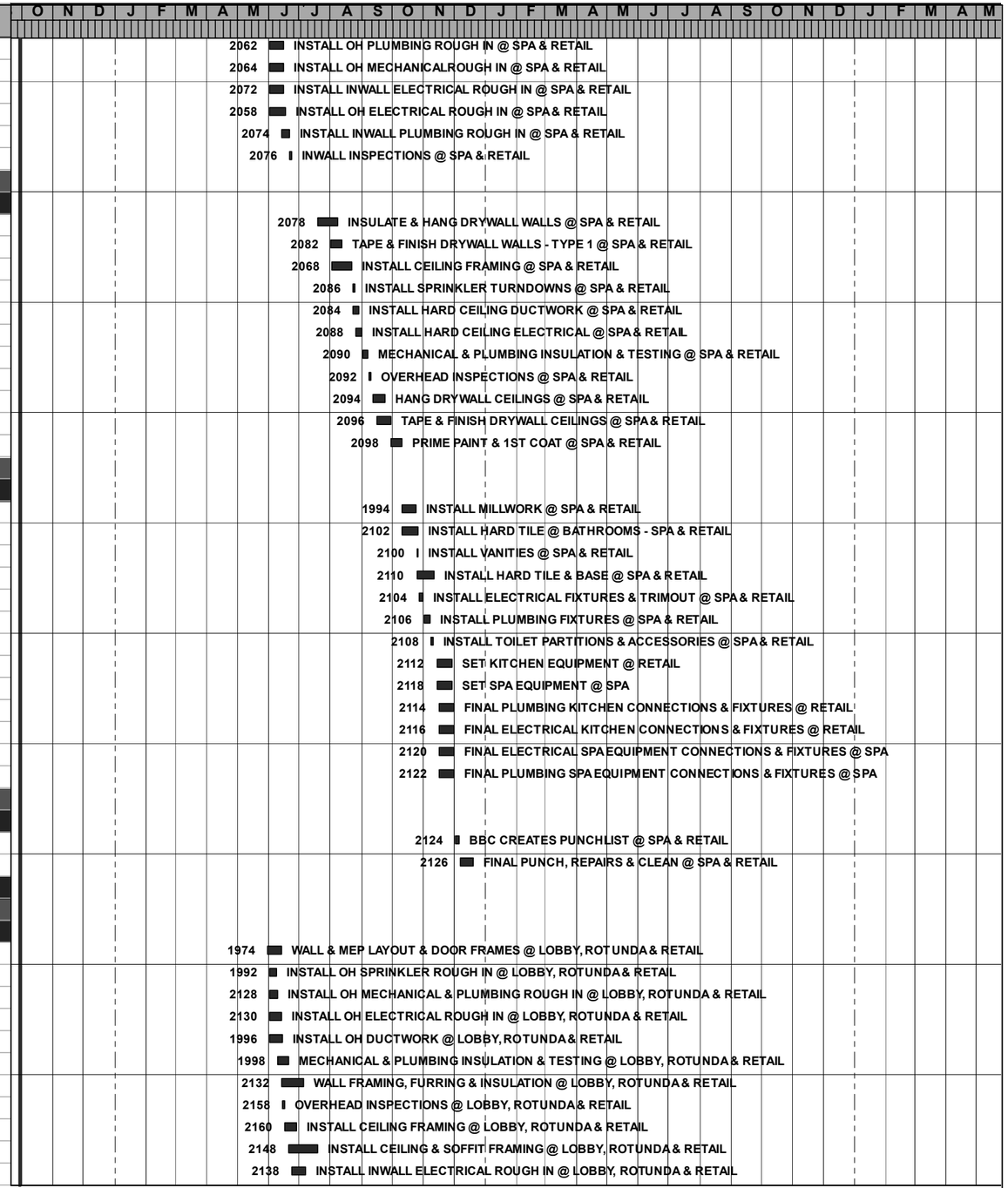
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
2070	INSTALL HARDSCAPE	25	22-Feb-17	28-Mar-17	22	
2080	INSTALL LANDSCAPING	15	29-Mar-17	18-Apr-17	22	
INTERIOR		322	08-Feb-16	11-May-17	54	
SERVICE YARD (GROUND LEVEL)		221	25-Mar-16	07-Feb-17	70	
		221	25-Mar-16	07-Feb-17	70	
		221	25-Mar-16	07-Feb-17	70	
		221	25-Mar-16	07-Feb-17	70	
3152	SET & INSTALL CHILLERS (2) @ SERVICE YARD	30	25-Mar-16	05-May-16	242	
3156	INSTALL GREASE TRAP @ SERVICE YARD	10	15-Sep-16	28-Sep-16	160	NEED PROC
3154	SET, HOOK UP & TEST GENERATOR @ SERVICE YARD	15	18-Jan-17	07-Feb-17	45	NEED PROC
3158	SET, INSTALL & HOOK UP TRASH COMPACTOR @ SERVICE YARD	3	03-Feb-17	07-Feb-17	45	NEED PROC
LOWER LEVEL		70	05-May-16	12-Aug-16	192	
		70	05-May-16	12-Aug-16	192	
		57	05-May-16	26-Jul-16	202	
		57	05-May-16	26-Jul-16	202	
3160	INSTALL CMU BLOCK @ LOWER LEVEL	10	05-May-16	18-May-16	15	NEED RESHORES @ LL
3164	INSTALL WALL FRAMING & DOOR FRAMES @ LOWER LEVEL	10	19-May-16	02-Jun-16	15	
3162	INSTALL OVERHEAD MEPF ROUGH IN @ LOWER LEVEL	20	19-May-16	16-Jun-16	15	
3166	H / T / F DRYWALL WALLS @ LOWER LEVEL	8	03-Jun-16	14-Jun-16	15	
3168	PRIME PAINT @ LOWER LEVEL	2	15-Jun-16	16-Jun-16	15	
3178	SET VEHICLE LIFTS @ LOWER LEVEL	5	17-Jun-16	23-Jun-16	202	NEED PROC
3190	FINAL ELECTRICAL CONENCTIONS TO VEHICLE LIFTS @ LOWER LEVEL	12	24-Jun-16	12-Jul-16	202	
3192	POWER WASH, STRIPING, BOLLARDS & VEHICLE SYSTEMS @ LOWER LEVEL	10	13-Jul-16	26-Jul-16	202	
MAIN ELECTRICAL ROOM		40	17-Jun-16	12-Aug-16	163	
		40	17-Jun-16	12-Aug-16	163	
3180	SET, BOLT UP, PULL FEEDERS & TERMINATE @ MAIN ELECTRICAL ROOM	40	17-Jun-16	12-Aug-16	163	
EMERGENCY ELECTRICAL ROOM		30	01-Jul-16	12-Aug-16	163	
		30	01-Jul-16	12-Aug-16	163	
3174	SET, BOLT UP, PULL FEEDERS & TERMINATE @ EMERGENCY ELECTRICAL ROOM	30	01-Jul-16	12-Aug-16	163	
FIRE PUMP ROOM		15	17-Jun-16	08-Jul-16	215	
		15	17-Jun-16	08-Jul-16	215	
3172	SET, INSTALL & HOOK FIRE PUMP @ FIRE PUMP ROOM	15	17-Jun-16	08-Jul-16	215	
HVAC PUMP ROOM		17	17-Jun-16	12-Jul-16	186	
		17	17-Jun-16	12-Jul-16	186	
3176	SET & HOOK UP PUMPS @ HVAC PUMP ROOM	15	17-Jun-16	08-Jul-16	186	
3184	FINAL ELECTRICAL CONNECTIONS TO PUMPS @ HVAC PUMP ROOM	2	11-Jul-16	12-Jul-16	186	
LAUNDRY ROOM		8	17-Jun-16	28-Jun-16	224	
		8	17-Jun-16	28-Jun-16	224	
3170	SET LAUNDRY EQUIPMENT @ LAUNDRY ROOM	5	17-Jun-16	23-Jun-16	224	
3186	FINAL ELECTRICAL CONNECTIONS @ LAUNDRY ROOM	3	24-Jun-16	28-Jun-16	224	
3188	FINAL PLUMBING CONNECTIONS @ LAUNDRY ROOM	3	24-Jun-16	28-Jun-16	224	
VALET / LINEN & HOUSEKEEPING ROOMS		15	17-Jun-16	08-Jul-16	214	
		15	17-Jun-16	08-Jul-16	214	
3182	INSTALL MILLWORK, FLOORING, FINAL PAINT & DEVICES @ VALET, LINEN & HOUSEKEEPII	15	17-Jun-16	08-Jul-16	214	
LEVEL 1		189	25-May-16	22-Feb-17	110	
SPA & RETAIL AREA		145	25-May-16	20-Dec-16	154	
FRAMING & MEP ROUGH IN		21	25-May-16	23-Jun-16	126	
		21	25-May-16	23-Jun-16	126	
1972	WALL & MEP LAYOUT & DOOR FRAMES @ SPA & RETAIL	5	25-May-16	01-Jun-16	56	
2046	INSTALL OH SPRINKLER ROUGH IN @ SPA & RETAIL	4	27-May-16	02-Jun-16	141	
2048	INSTALL OH DUCTWORK @ SPA & RETAIL	8	02-Jun-16	13-Jun-16	134	
2066	WALL FRAMING & FURRING & INSULATION @ SPA & RETAIL	8	02-Jun-16	13-Jun-16	116	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
2062	INSTALL OH PLUMBING ROUGH IN @ SPA & RETAIL	10	02-Jun-16	15-Jun-16	132	
2064	INSTALL OH MECHANICALROUGH IN @ SPA & RETAIL	10	02-Jun-16	15-Jun-16	132	
2072	INSTALL INWALL ELECTRICAL ROUGH IN @ SPA & RETAIL	10	02-Jun-16	15-Jun-16	120	
2058	INSTALL OH ELECTRICAL ROUGH IN @ SPA & RETAIL	12	02-Jun-16	17-Jun-16	130	
2074	INSTALL INWALL PLUMBING ROUGH IN @ SPA & RETAIL	6	14-Jun-16	21-Jun-16	116	
2076	INWALL INSPECTIONS @ SPA & RETAIL	2	22-Jun-16	23-Jun-16	116	
DRYWALL, HARDTILE, & PRIME PAINT		59	19-Jul-16	10-Oct-16	203	
		59	19-Jul-16	10-Oct-16	203	
2078	INSULATE & HANG DRYWALL WALLS @ SPA & RETAIL	15	19-Jul-16	08-Aug-16	100	
2082	TAPE & FINISH DRYWALL WALLS - TYPE 1 @ SPA & RETAIL	10	01-Aug-16	12-Aug-16	133	
2068	INSTALL CEILING FRAMING @ SPA & RETAIL	15	02-Aug-16	22-Aug-16	100	
2086	INSTALL SPRINKLER TURNDOWNS @ SPA & RETAIL	3	23-Aug-16	25-Aug-16	100	
2084	INSTALL HARD CEILING DUCTWORK @ SPA & RETAIL	5	23-Aug-16	29-Aug-16	232	
2088	INSTALL HARD CEILING ELECTRICAL @ SPA & RETAIL	5	26-Aug-16	01-Sep-16	100	
2090	MECHANICAL & PLUMBING INSULATION & TESTING @ SPA & RETAIL	3	02-Sep-16	07-Sep-16	100	LEVEL 2
2092	OVERHEAD INSPECTIONS @ SPA & RETAIL	2	08-Sep-16	09-Sep-16	100	
2094	HANG DRYWALL CEILINGS @ SPA & RETAIL	10	12-Sep-16	23-Sep-16	100	
2096	TAPE & FINISH DRYWALL CEILINGS @ SPA & RETAIL	10	16-Sep-16	29-Sep-16	100	
2098	PRIME PAINT & 1ST COAT @ SPA & RETAIL	7	30-Sep-16	10-Oct-16	100	
FINAL FINISHES, MILLWORK, & MEP TRIMOUT		36	11-Oct-16	01-Dec-16	100	
		36	11-Oct-16	01-Dec-16	100	
1994	INSTALL MILLWORK @ SPA & RETAIL	10	11-Oct-16	24-Oct-16	100	
2102	INSTALL HARD TILE @ BATHROOMS - SPA & RETAIL	12	11-Oct-16	26-Oct-16	113	
2100	INSTALL VANITIES @ SPA & RETAIL	2	25-Oct-16	26-Oct-16	116	
2110	INSTALL HARD TILE & BASE @ SPA & RETAIL	14	25-Oct-16	11-Nov-16	100	
2104	INSTALL ELECTRICAL FIXTURES & TRIMOUT @ SPA & RETAIL	3	27-Oct-16	31-Oct-16	113	
2106	INSTALL PLUMBING FIXTURES @ SPA & RETAIL	5	01-Nov-16	07-Nov-16	113	
2108	INSTALL TOILET PARTITIONS & ACCESSORIES @ SPA & RETAIL	3	08-Nov-16	10-Nov-16	113	
2112	SET KITCHEN EQUIPMENT @ RETAIL	10	14-Nov-16	29-Nov-16	100	
2118	SET SPA EQUIPMENT @ SPA	10	14-Nov-16	29-Nov-16	100	
2114	FINAL PLUMBING KITCHEN CONNECTIONS & FIXTURES @ RETAIL	10	16-Nov-16	01-Dec-16	100	
2116	FINAL ELECTRICAL KITCHEN CONNECTIONS & FIXTURES @ RETAIL	10	16-Nov-16	01-Dec-16	100	
2120	FINAL ELECTRICAL SPA EQUIPMENT CONNECTIONS & FIXTURES @ SPA	10	16-Nov-16	01-Dec-16	100	
2122	FINAL PLUMBING SPA EQUIPMENT CONNECTIONS & FIXTURES @ SPA	10	16-Nov-16	01-Dec-16	100	
PUNCH & REPAIRS		13	02-Dec-16	20-Dec-16	100	
		13	02-Dec-16	20-Dec-16	100	
2124	BBC CREATES PUNCHLIST @ SPA & RETAIL	3	02-Dec-16	06-Dec-16	100	
2126	FINAL PUNCH, REPAIRS & CLEAN @ SPA & RETAIL	10	07-Dec-16	20-Dec-16	100	SUCC
LOBBY, ROTUNDA & RETAIL		186	31-May-16	22-Feb-17	56	
FRAMING & MEP ROUGH IN		41	31-May-16	27-Jul-16	102	
		41	31-May-16	27-Jul-16	102	
1974	WALL & MEP LAYOUT & DOOR FRAMES @ LOBBY, ROTUNDA & RETAIL	10	31-May-16	13-Jun-16	56	
1992	INSTALL OH SPRINKLER ROUGH IN @ LOBBY, ROTUNDA & RETAIL	5	02-Jun-16	08-Jun-16	71	
2128	INSTALL OH MECHANICAL & PLUMBING ROUGH IN @ LOBBY, ROTUNDA & RETAIL	6	02-Jun-16	09-Jun-16	57	2ND FLOOR
2130	INSTALL OH ELECTRICAL ROUGH IN @ LOBBY, ROTUNDA & RETAIL	8	02-Jun-16	13-Jun-16	68	
1996	INSTALL OH DUCTWORK @ LOBBY, ROTUNDA & RETAIL	9	02-Jun-16	14-Jun-16	61	
1998	MECHANICAL & PLUMBING INSULATION & TESTING @ LOBBY, ROTUNDA & RETAIL	7	10-Jun-16	20-Jun-16	57	
2132	WALL FRAMING, FURRING & INSULATION @ LOBBY, ROTUNDA & RETAIL	15	14-Jun-16	05-Jul-16	56	
2158	OVERHEAD INSPECTIONS @ LOBBY, ROTUNDA & RETAIL	2	15-Jun-16	16-Jun-16	67	
2160	INSTALL CEILING FRAMING @ LOBBY, ROTUNDA & RETAIL	8	17-Jun-16	28-Jun-16	67	
2148	INSTALL CEILING & SOFFIT FRAMING @ LOBBY, ROTUNDA & RETAIL	20	21-Jun-16	19-Jul-16	57	
2138	INSTALL INWALL ELECTRICAL ROUGH IN @ LOBBY, ROTUNDA & RETAIL	9	24-Jun-16	07-Jul-16	57	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
2136	INSTALL OPERABLE PARTITION @ LOBBY, ROTUNDA & RETAIL	1	06-Jul-16	06-Jul-16	117	NEED INFO
2140	INSTALL INWALL PLUMBING ROUGH IN @ LOBBY, ROTUNDA & RETAIL	3	06-Jul-16	08-Jul-16	56	2ND FLOOR
2142	INWALL INSPECTION @ LOBBY, ROTUNDA & RETAIL	2	11-Jul-16	12-Jul-16	56	
2150	INSTALL SOFFIT ELEC ROUGH IN @ LOBBY, ROTUNDA & RETAIL	8	13-Jul-16	22-Jul-16	58	
2152	INSTALL SOFFITS @ LOBBY, ROTUNDA & RETAIL	4	20-Jul-16	25-Jul-16	57	???
2154	SOFFIT INSPECTION @ LOBBY, ROTUNDA & RETAIL	2	26-Jul-16	27-Jul-16	57	
DRYWALL, HARDTILE, & PRIME PAINT		32	13-Jul-16	25-Aug-16	81	
		32	13-Jul-16	25-Aug-16	81	
2144	HANG / TOPOUT DRYWALL WALLS @ LOBBY, ROTUNDA & RETAIL	12	13-Jul-16	28-Jul-16	56	
2156	HANG DRYWALL CEILINGS & SOFFITS @ LOBBY, ROTUNDA & RETAIL	10	28-Jul-16	10-Aug-16	57	
2146	TAPE & FINISH DRYWALL WALLS @ LOBBY, ROTUNDA & RETAIL	15	29-Jul-16	18-Aug-16	56	
2162	TAPE & FINISH DRYWALL CEILINGS & SOFFITS @ LOBBY, ROTUNDA & RETAIL	12	02-Aug-16	17-Aug-16	57	
2164	PRIME PAINT & 1ST COAT CEILINGS @ LOBBY, ROTUNDA & RETAIL	5	18-Aug-16	24-Aug-16	57	
2134	INSTALL STONE COLUMNS @ LOBBY, ROTUNDA & RETAIL	1	19-Aug-16	19-Aug-16	85	NEED INFO
2166	PRIME PAINT WALLS @ LOBBY, ROTUNDA & RETAIL	5	19-Aug-16	25-Aug-16	56	
FINAL FINISHES, MILLWORK, & MEP TRIMOUT		105	25-Aug-16	25-Jan-17	56	
		105	25-Aug-16	25-Jan-17	56	
2000	INSTALL MILLWORK CEILINGS & SOFFITS @ LOBBY, ROTUNDA & RETAIL	20	25-Aug-16	22-Sep-16	57	
2174	INSTALL MILLWORK @ LOBBY, ROTUNDA & RETAIL	20	26-Aug-16	23-Sep-16	56	
2176	INSTALL IN-MILLWORK PLUMBING & ELECTRICAL @ LOBBY, ROTUNDA & RETAIL	10	14-Sep-16	27-Sep-16	64	
2178	1ST COAT PAINT @ LOBBY, ROTUNDA & RETAIL	5	26-Sep-16	30-Sep-16	56	
2172	TILE LAYOUT @ LOBBY, ROTUNDA & RETAIL	3	03-Oct-16	05-Oct-16	65	
2184	FINAL POINT UP @ LOBBY, ROTUNDA & RETAIL	5	03-Oct-16	07-Oct-16	56	PERM LIGHTS PRED?
2182	INSTALL FIXTURES & TRIMOUT @ LOBBY, ROTUNDA & RETAIL	10	03-Oct-16	14-Oct-16	58	
2186	FINAL PAINT @ LOBBY, ROTUNDA & RETAIL	7	10-Oct-16	18-Oct-16	56	
2188	INSTALL TILE FLOORING @ LOBBY, ROTUNDA & RETAIL	60	19-Oct-16	16-Jan-17	56	
2196	INSTALL MONUMENTAL STAIRS @ LOBBY, ROTUNDA & RETAIL	1	17-Jan-17	17-Jan-17	62	NEED INFO
2192	INSTALL WALL COVERING @ LOBBY, ROTUNDA & RETAIL	2	17-Jan-17	18-Jan-17	56	
2194	INSTALL FINAL MEPS TRIMOUT @ LOBBY, ROTUNDA & RETAIL	5	19-Jan-17	25-Jan-17	56	
PUNCH & REPAIRS		20	26-Jan-17	22-Feb-17	56	
		20	26-Jan-17	22-Feb-17	56	
2198	BBC CREATES PUNCHLIST @ SPA & RETAIL	5	26-Jan-17	01-Feb-17	56	
2222	FINAL PUNCH, REPAIRS & CLEAN @ SPA & RETAIL	15	02-Feb-17	22-Feb-17	56	
BACK OF HOUSE AREA		86	03-Jun-16	04-Oct-16	153	
FRAMING & MEP ROUGH IN		22	03-Jun-16	05-Jul-16	183	
		22	03-Jun-16	05-Jul-16	183	
2224	WALL & MEP LAYOUT & DOOR FRAMES @ BACK OF HOUSE	5	03-Jun-16	09-Jun-16	133	
2226	INSTALL OH SPRINKLER ROUGH IN @ BACK OF HOUSE	5	10-Jun-16	16-Jun-16	195	
2228	INSTALL OH MECHANICAL & PLUMBING ROUGH IN @ BACK OF HOUSE	8	10-Jun-16	21-Jun-16	185	
2238	WALL FRAMING, FURRING & INSULATION @ BACK OF HOUSE	8	10-Jun-16	21-Jun-16	153	
2234	INSTALL OH DUCTWORK @ BACK OF HOUSE	9	10-Jun-16	22-Jun-16	191	
2232	INSTALL OH ELECTRICAL ROUGH IN @ BACK OF HOUSE	12	10-Jun-16	27-Jun-16	188	
2240	INSTALL INWALL ELECTRICAL ROUGH IN @ BACK OF HOUSE	15	10-Jun-16	30-Jun-16	153	
2242	INSTALL INWALL PLUMBING ROUGH IN @ BACK OF HOUSE	3	17-Jun-16	21-Jun-16	160	
2236	MECHANICAL & PLUMBING INSULATION & TESTING @ BACK OF HOUSE	7	22-Jun-16	30-Jun-16	185	2ND FLOOR??
2244	INWALL INSPECTIONS @ BACK OF HOUSE	2	01-Jul-16	05-Jul-16	153	
DRYWALL, HARDTILE, & PRIME PAINT		30	06-Jul-16	16-Aug-16	171	
		30	06-Jul-16	16-Aug-16	171	
2004	HANG DRYWALL WALLS @ BACK OF HOUSE	10	06-Jul-16	19-Jul-16	153	
2168	TAPE & FINISH DRYWALL WALLS @ BACK OF HOUSE	12	08-Jul-16	25-Jul-16	153	
2216	INSTALL CEILING FRAMING @ BACK OF HOUSE	2	26-Jul-16	27-Jul-16	170	
2170	PRIME PAINT & BAND FOR GRID @ BACK OF HOUSE	4	26-Jul-16	29-Jul-16	153	



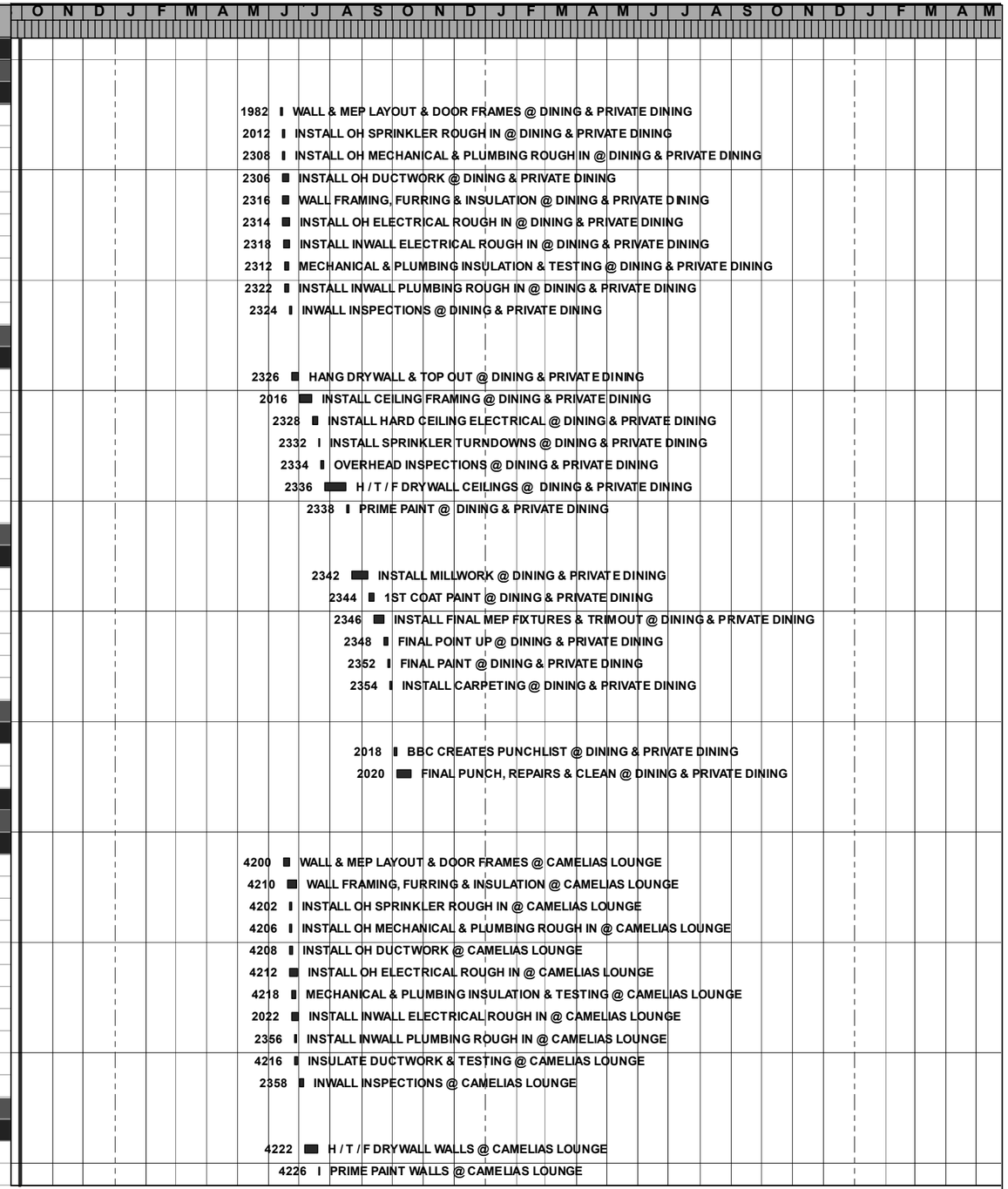
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
2218	INSTALL HARD CEILING ELECTRICAL @ BACK OF HOUSE	2	28-Jul-16	29-Jul-16	170	
2202	INSTALL ACT GRID @ BACK OF HOUSE	10	01-Aug-16	12-Aug-16	153	
2204	INSTALL HARD TILE @ BACK OF HOUSE	10	01-Aug-16	12-Aug-16	173	
2208	INSTALL INGRID ELECTRICAL @ BACK OF HOUSE	10	03-Aug-16	16-Aug-16	153	
FINAL FINISHES, MILLWORK, & MEP TRIMOUT		24	12-Aug-16	15-Sep-16	153	
		24	12-Aug-16	15-Sep-16	153	
2206	INSTALL DUCTWORK TRIMOUT @ BACK OF HOUSE	2	12-Aug-16	15-Aug-16	154	
2214	INSTALL PLUMBING FIXTURES @ BACK OF HOUSE	3	15-Aug-16	17-Aug-16	173	
2212	OVERHEAD & INGRID INSPECTIONS @ BACK OF HOUSE	5	17-Aug-16	23-Aug-16	153	
2220	H / T / F DRYWALL CEILINGS @ BACK OF HOUSE	6	24-Aug-16	31-Aug-16	153	
2246	PRIME, 1ST COAT & FINAL PAINT @ BACK OF HOUSE	5	01-Sep-16	08-Sep-16	153	
2248	INSTALL FINAL MEP TRIMOUT @BACK OF HOUSE	5	09-Sep-16	15-Sep-16	153	
PUNCH & REPAIRS		13	16-Sep-16	04-Oct-16	153	
		13	16-Sep-16	04-Oct-16	153	
2008	BBC CREATES PUNCHLIST @ SPA & RETAIL	3	16-Sep-16	20-Sep-16	153	
2478	FINAL PUNCH, REPAIRS & CLEAN @ SPA & RETAIL	10	21-Sep-16	04-Oct-16	153	
1ST FLOOR KITCHEN		83	08-Jun-16	04-Oct-16	153	
FRAMING & MEP ROUGH IN		17	08-Jun-16	30-Jun-16	202	
		17	08-Jun-16	30-Jun-16	202	
1978	WALL & MEP LAYOUT & DOOR FRAMES @ 1ST FLOOR KITCHEN	2	08-Jun-16	09-Jun-16	133	
2264	INSTALL WATER HEATERS @ 1ST FLOOR KITCHEN	2	08-Jun-16	09-Jun-16	155	PRED? PROC?
2002	INSTALL OH SPRINKLER ROUGH IN @ 1ST FLOOR KITCHEN	2	10-Jun-16	13-Jun-16	166	
2006	INSTALL OH MECHANICAL & PLUMBING ROUGH IN @ 1ST FLOOR KITCHEN	5	10-Jun-16	16-Jun-16	153	
2254	INSTALL OH ELECTRICAL ROUGH IN @ 1ST FLOOR KITCHEN	6	10-Jun-16	17-Jun-16	162	
2258	WALL FRAMING, FURRING & INSULATION @ 1ST FLOOR KITCHEN	6	10-Jun-16	17-Jun-16	155	
2256	INSTALL OH DUCTWORK @ 1ST FLOOR KITCHEN	10	10-Jun-16	23-Jun-16	207	
2262	INSTALL INWALL PLUMBING ROUGH IN @ 1ST FLOOR KITCHEN	10	13-Jun-16	24-Jun-16	155	
2252	MECHANICAL & PLUMBING INSULATION & TESTING @ 1ST FLOOR KITCHEN	10	17-Jun-16	30-Jun-16	153	
2266	INSTALL INWALL ELECTRICAL ROUGH IN @ 1ST FLOOR KITCHEN	5	20-Jun-16	24-Jun-16	155	
2268	INWALL INSPECTIONS @ 1ST FLOOR KITCHEN	2	27-Jun-16	28-Jun-16	155	
DRYWALL, HARDTILE, & PRIME PAINT		36	01-Jul-16	22-Aug-16	158	
		36	01-Jul-16	22-Aug-16	158	
2010	H / T / F DRYWALL @ 1ST FLOOR KITCHEN	14	01-Jul-16	21-Jul-16	153	
2272	PRIME PAINT @ 1ST FLOOR KITCHEN	2	22-Jul-16	25-Jul-16	153	
2274	INSTALL MILLWORK @ 1ST FLOOR KITCHEN	2	26-Jul-16	27-Jul-16	153	
2276	INSTALL HARD TILE FLOOR @ 1ST FLOOR KITCHEN	15	28-Jul-16	17-Aug-16	153	
2278	INSTALL F.R.P. @ 1ST FLOOR KITCHEN	3	18-Aug-16	22-Aug-16	158	
FINAL FINISHES, MILLWORK, & MEP TRIMOUT		20	18-Aug-16	15-Sep-16	153	
		20	18-Aug-16	15-Sep-16	153	
2282	SET KITCHEN EQUIPMENT @ 1ST FLOOR KITCHEN	10	18-Aug-16	31-Aug-16	153	
2292	INSTALL ACT GRID @ 1ST FLOOR KITCHEN	6	23-Aug-16	30-Aug-16	158	
2294	INSTALL INGRID ELECTRICAL ROUGH IN @ 1ST FLOOR KITCHEN	2	31-Aug-16	01-Sep-16	158	
2296	INSTALL INGRID HVAC ROUGH IN @ 1ST FLOOR KITCHEN	2	31-Aug-16	01-Sep-16	158	
2288	SET HOOD @ 1ST FLOOR KITCHEN	1	01-Sep-16	01-Sep-16	162	
2284	FINAL ELECTRICAL CONNECTIONS TO KITCHEN EQUIPMENT @ 1ST FLOOR KITCHEN	10	01-Sep-16	15-Sep-16	153	
2286	FINAL PLUMBING CONNECTIONS TO KITCHEN EQUIPMENT @ 1ST FLOOR KITCHEN	10	01-Sep-16	15-Sep-16	153	
2298	OVERHEAD & INGRID INSPECTIONS @ 1ST FLOOR KITCHEN	2	02-Sep-16	06-Sep-16	158	
2302	INSTALL ACT TILE @1ST FLOOR KITCHEN	2	07-Sep-16	08-Sep-16	158	
PUNCH & REPAIRS		13	16-Sep-16	04-Oct-16	153	
		13	16-Sep-16	04-Oct-16	153	
2014	BBC CREATES PUNCHLIST @ 1ST FLOOR KITCHEN	3	16-Sep-16	20-Sep-16	153	
2304	FINAL PUNCH, REPAIRS & CLEAN @ 1ST FLOOR KITCHEN	10	21-Sep-16	04-Oct-16	153	



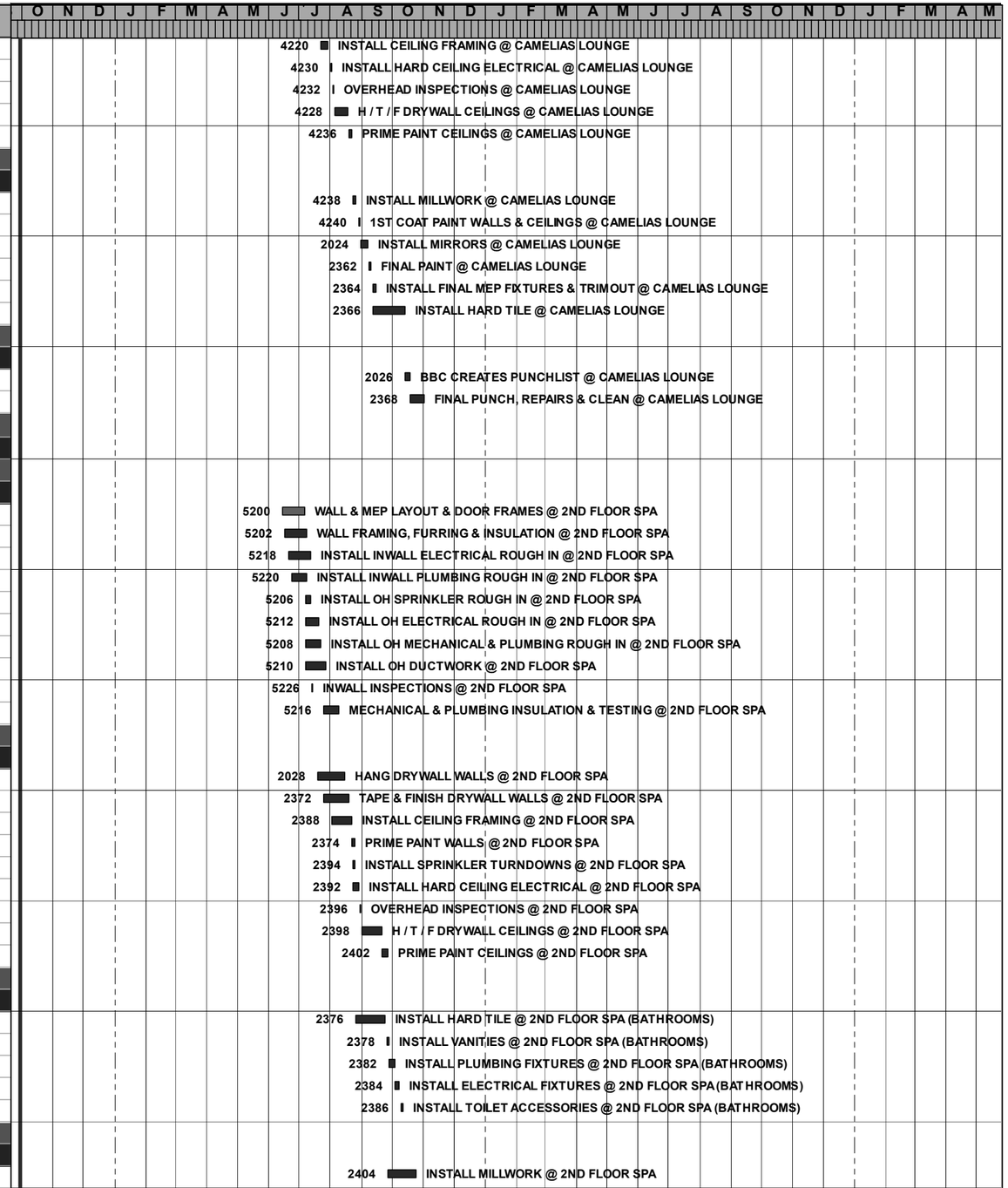
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
DINING & PRIVATE DINING		**91**	**13-Jun-16**	**19-Oct-16**	**142**	
FRAMING & MEP ROUGH IN		**9**	**13-Jun-16**	**23-Jun-16**	**161**	
		9	**13-Jun-16**	**23-Jun-16**	**161**	
1982	WALL & MEP LAYOUT & DOOR FRAMES @ DINING & PRIVATE DINING	2	13-Jun-16	14-Jun-16	133	
2012	INSTALL OH SPRINKLER ROUGH IN @ DINING & PRIVATE DINING	2	15-Jun-16	16-Jun-16	166	
2308	INSTALL OH MECHANICAL & PLUMBING ROUGH IN @ DINING & PRIVATE DINING	2	15-Jun-16	16-Jun-16	164	
2306	INSTALL OH DUCTWORK @ DINING & PRIVATE DINING	4	15-Jun-16	20-Jun-16	164	
2316	WALL FRAMING, FURRING & INSULATION @ DINING & PRIVATE DINING	4	15-Jun-16	20-Jun-16	142	
2314	INSTALL OH ELECTRICAL ROUGH IN @ DINING & PRIVATE DINING	5	15-Jun-16	21-Jun-16	163	
2318	INSTALL INWALL ELECTRICAL ROUGH IN @ DINING & PRIVATE DINING	4	16-Jun-16	21-Jun-16	142	
2312	MECHANICAL & PLUMBING INSULATION & TESTING @ DINING & PRIVATE DINING	2	17-Jun-16	20-Jun-16	164	
2322	INSTALL INWALL PLUMBING ROUGH IN @ DINING & PRIVATE DINING	2	17-Jun-16	20-Jun-16	143	
2324	INWALL INSPECTIONS @ DINING & PRIVATE DINING	2	22-Jun-16	23-Jun-16	142	
DRYWALL, HARDTILE, & PRIME PAINT		**40**	**24-Jun-16**	**19-Aug-16**	**142**	
		40	**24-Jun-16**	**19-Aug-16**	**142**	
2326	HANG DRYWALL & TOP OUT @ DINING & PRIVATE DINING	5	24-Jun-16	30-Jun-16	142	
2016	INSTALL CEILING FRAMING @ DINING & PRIVATE DINING	8	01-Jul-16	13-Jul-16	142	
2328	INSTALL HARD CEILING ELECTRICAL @ DINING & PRIVATE DINING	4	14-Jul-16	19-Jul-16	142	
2332	INSTALL SPRINKLER TURNDOWNS @ DINING & PRIVATE DINING	2	20-Jul-16	21-Jul-16	142	
2334	OVERHEAD INSPECTIONS @ DINING & PRIVATE DINING	2	22-Jul-16	25-Jul-16	142	
2336	H / T / F DRYWALL CEILINGS @ DINING & PRIVATE DINING	16	26-Jul-16	16-Aug-16	142	
2338	PRIME PAINT @ DINING & PRIVATE DINING	3	17-Aug-16	19-Aug-16	142	
FINAL FINISHES, MILLWORK, & MEP TRIMOUT		**29**	**22-Aug-16**	**30-Sep-16**	**142**	
		29	**22-Aug-16**	**30-Sep-16**	**142**	
2342	INSTALL MILLWORK @ DINING & PRIVATE DINING	12	22-Aug-16	07-Sep-16	142	
2344	1ST COAT PAINT @ DINING & PRIVATE DINING	3	08-Sep-16	12-Sep-16	142	
2346	INSTALL FINAL MEP FIXTURES & TRIMOUT @ DINING & PRIVATE DINING	8	13-Sep-16	22-Sep-16	142	
2348	FINAL POINT UP @ DINING & PRIVATE DINING	2	23-Sep-16	26-Sep-16	142	
2352	FINAL PAINT @ DINING & PRIVATE DINING	2	27-Sep-16	28-Sep-16	142	
2354	INSTALL CARPETING @ DINING & PRIVATE DINING	2	29-Sep-16	30-Sep-16	142	
PUNCH & REPAIRS		**13**	**03-Oct-16**	**19-Oct-16**	**142**	
		13	**03-Oct-16**	**19-Oct-16**	**142**	
2018	BBC CREATES PUNCHLIST @ DINING & PRIVATE DINING	3	03-Oct-16	05-Oct-16	142	
2020	FINAL PUNCH, REPAIRS & CLEAN @ DINING & PRIVATE DINING	10	06-Oct-16	19-Oct-16	142	
CAMELIAS LOUNGE		**97**	**16-Jun-16**	**01-Nov-16**	**133**	
FRAMING & MEP ROUGH IN		**13**	**16-Jun-16**	**05-Jul-16**	**153**	
		13	**16-Jun-16**	**05-Jul-16**	**153**	
4200	WALL & MEP LAYOUT & DOOR FRAMES @ CAMELIAS LOUNGE	4	16-Jun-16	21-Jun-16	133	
4210	WALL FRAMING, FURRING & INSULATION @ CAMELIAS LOUNGE	7	20-Jun-16	28-Jun-16	133	
4202	INSTALL OH SPRINKLER ROUGH IN @ CAMELIAS LOUNGE	2	22-Jun-16	23-Jun-16	160	
4206	INSTALL OH MECHANICAL & PLUMBING ROUGH IN @ CAMELIAS LOUNGE	2	22-Jun-16	23-Jun-16	158	
4208	INSTALL OH DUCTWORK @ CAMELIAS LOUNGE	3	22-Jun-16	24-Jun-16	148	
4212	INSTALL OH ELECTRICAL ROUGH IN @ CAMELIAS LOUNGE	6	22-Jun-16	29-Jun-16	156	
4218	MECHANICAL & PLUMBING INSULATION & TESTING @ CAMELIAS LOUNGE	2	24-Jun-16	27-Jun-16	158	
2022	INSTALL INWALL ELECTRICAL ROUGH IN @ CAMELIAS LOUNGE	5	24-Jun-16	30-Jun-16	133	
2356	INSTALL INWALL PLUMBING ROUGH IN @ CAMELIAS LOUNGE	2	27-Jun-16	28-Jun-16	135	
4216	INSULATE DUCTWORK & TESTING @ CAMELIAS LOUNGE	3	27-Jun-16	29-Jun-16	148	
2358	INWALL INSPECTIONS @ CAMELIAS LOUNGE	2	01-Jul-16	05-Jul-16	133	
DRYWALL, HARDTILE, & PRIME PAINT		**34**	**06-Jul-16**	**22-Aug-16**	**133**	
		34	**06-Jul-16**	**22-Aug-16**	**133**	
4222	H / T / F DRYWALL WALLS @ CAMELIAS LOUNGE	10	06-Jul-16	19-Jul-16	133	
4226	PRIME PAINT WALLS @ CAMELIAS LOUNGE	2	20-Jul-16	21-Jul-16	133	



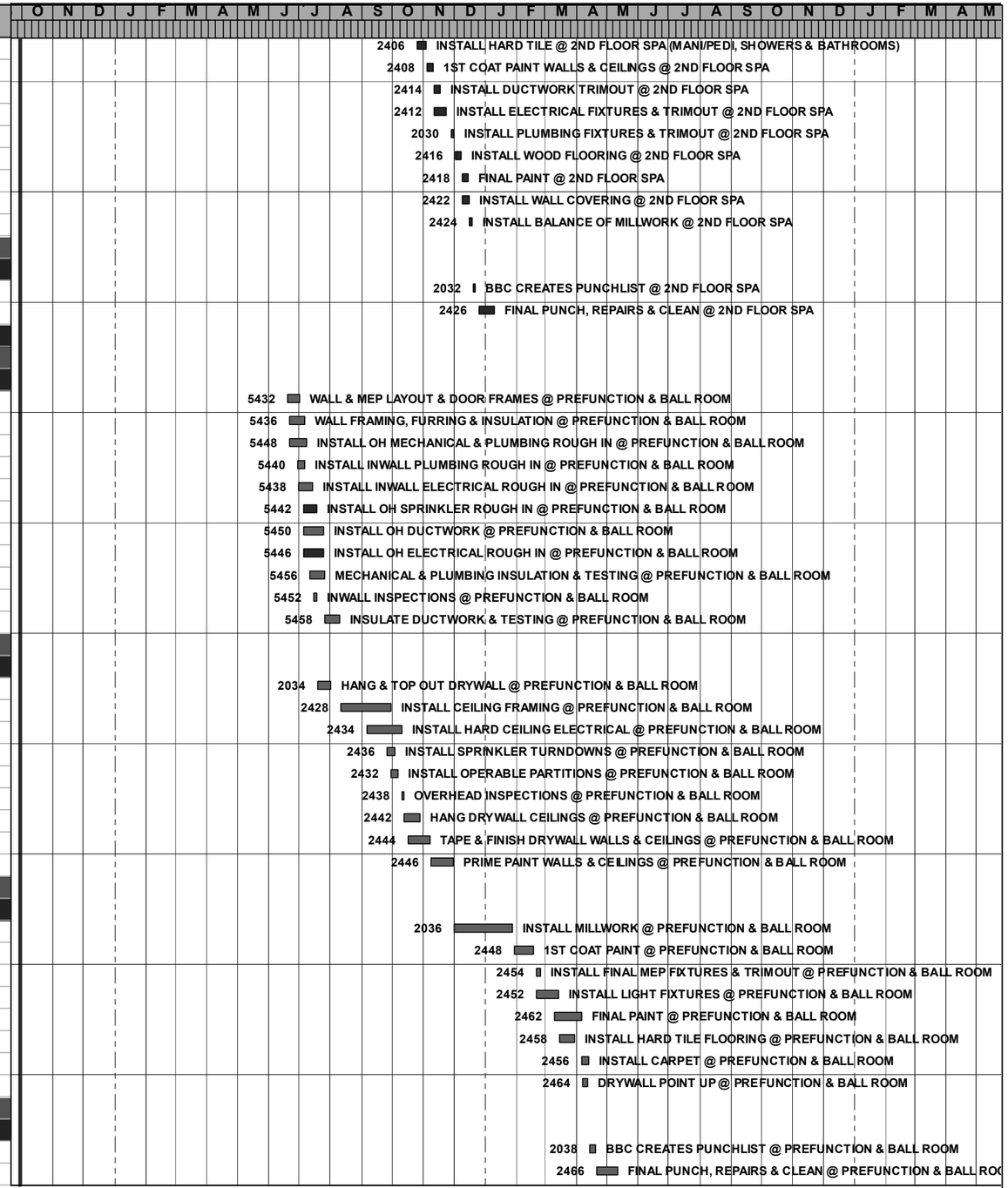
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
4220	INSTALL CEILING FRAMING @ CAMELIAS LOUNGE	6	22-Jul-16	29-Jul-16	133	
4230	INSTALL HARD CEILING ELECTRICAL @ CAMELIAS LOUNGE	2	01-Aug-16	02-Aug-16	133	
4232	OVERHEAD INSPECTIONS @ CAMELIAS LOUNGE	2	03-Aug-16	04-Aug-16	133	
4228	H / T / F DRYWALL CEILINGS @ CAMELIAS LOUNGE	10	05-Aug-16	18-Aug-16	133	
4236	PRIME PAINT CEILINGS @ CAMELIAS LOUNGE	2	19-Aug-16	22-Aug-16	133	
FINAL FINISHES, MILLWORK, & MEP TRIMOUT		37	23-Aug-16	13-Oct-16	133	
		37	23-Aug-16	13-Oct-16	133	
4238	INSTALL MILLWORK @ CAMELIAS LOUNGE	4	23-Aug-16	26-Aug-16	133	
4240	1ST COAT PAINT WALLS & CEILINGS @ CAMELIAS LOUNGE	2	29-Aug-16	30-Aug-16	133	
2024	INSTALL MIRRORS @ CAMELIAS LOUNGE	5	31-Aug-16	07-Sep-16	133	
2362	FINAL PAINT @ CAMELIAS LOUNGE	2	08-Sep-16	09-Sep-16	133	
2364	INSTALL FINAL MEP FIXTURES & TRIMOUT @ CAMELIAS LOUNGE	3	12-Sep-16	14-Sep-16	154	
2366	INSTALL HARD TILE @ CAMELIAS LOUNGE	24	12-Sep-16	13-Oct-16	133	
PUNCH & REPAIRS		13	14-Oct-16	01-Nov-16	133	
		13	14-Oct-16	01-Nov-16	133	
2026	BBC CREATES PUNCHLIST @ CAMELIAS LOUNGE	3	14-Oct-16	18-Oct-16	133	
2368	FINAL PUNCH, REPAIRS & CLEAN @ CAMELIAS LOUNGE	10	19-Oct-16	01-Nov-16	133	
LEVEL 2		231	15-Jun-16	11-May-17	0	
2ND FLOOR SPA		143	15-Jun-16	09-Jan-17	88	
FRAMING & MEP ROUGH IN		39	15-Jun-16	09-Aug-16	102	
		39	15-Jun-16	09-Aug-16	102	
5200	WALL & MEP LAYOUT & DOOR FRAMES @ 2ND FLOOR SPA	15	15-Jun-16	06-Jul-16	0	
5202	WALL FRAMING, FURRING & INSULATION @ 2ND FLOOR SPA	15	17-Jun-16	08-Jul-16	90	
5218	INSTALL INWALL ELECTRICAL ROUGH IN @ 2ND FLOOR SPA	15	21-Jun-16	12-Jul-16	90	
5220	INSTALL INWALL PLUMBING ROUGH IN @ 2ND FLOOR SPA	10	24-Jun-16	08-Jul-16	92	
5206	INSTALL OH SPRINKLER ROUGH IN @ 2ND FLOOR SPA	4	07-Jul-16	12-Jul-16	122	
5212	INSTALL OH ELECTRICAL ROUGH IN @ 2ND FLOOR SPA	10	07-Jul-16	20-Jul-16	116	
5208	INSTALL OH MECHANICAL & PLUMBING ROUGH IN @ 2ND FLOOR SPA	12	07-Jul-16	22-Jul-16	102	
5210	INSTALL OH DUCTWORK @ 2ND FLOOR SPA	15	07-Jul-16	27-Jul-16	111	
5226	INWALL INSPECTIONS @ 2ND FLOOR SPA	2	13-Jul-16	14-Jul-16	90	
5216	MECHANICAL & PLUMBING INSULATION & TESTING @ 2ND FLOOR SPA	12	25-Jul-16	09-Aug-16	102	
DRYWALL, HARDTILE, & PRIME PAINT		49	19-Jul-16	26-Sep-16	88	
		49	19-Jul-16	26-Sep-16	88	
2028	HANG DRYWALL WALLS @ 2ND FLOOR SPA	20	19-Jul-16	15-Aug-16	88	
2372	TAPE & FINISH DRYWALL WALLS @ 2ND FLOOR SPA	20	25-Jul-16	19-Aug-16	105	
2388	INSTALL CEILING FRAMING @ 2ND FLOOR SPA	15	02-Aug-16	22-Aug-16	88	
2374	PRIME PAINT WALLS @ 2ND FLOOR SPA	4	22-Aug-16	25-Aug-16	105	
2394	INSTALL SPRINKLER TURNDOWNS @ 2ND FLOOR SPA	3	23-Aug-16	25-Aug-16	90	
2392	INSTALL HARD CEILING ELECTRICAL @ 2ND FLOOR SPA	5	23-Aug-16	29-Aug-16	88	
2396	OVERHEAD INSPECTIONS @ 2ND FLOOR SPA	2	30-Aug-16	31-Aug-16	88	
2398	H / T / F DRYWALL CEILINGS @ 2ND FLOOR SPA	13	01-Sep-16	20-Sep-16	88	
2402	PRIME PAINT CEILINGS @ 2ND FLOOR SPA	4	21-Sep-16	26-Sep-16	88	
BATHROOMS		32	26-Aug-16	11-Oct-16	128	
		32	26-Aug-16	11-Oct-16	128	
2376	INSTALL HARD TILE @ 2ND FLOOR SPA (BATHROOMS)	20	26-Aug-16	23-Sep-16	128	
2378	INSTALL VANITIES @ 2ND FLOOR SPA (BATHROOMS)	2	26-Sep-16	27-Sep-16	128	
2382	INSTALL PLUMBING FIXTURES @ 2ND FLOOR SPA (BATHROOMS)	4	28-Sep-16	03-Oct-16	128	
2384	INSTALL ELECTRICAL FIXTURES @ 2ND FLOOR SPA (BATHROOMS)	4	04-Oct-16	07-Oct-16	128	
2386	INSTALL TOILET ACCESSORIES @ 2ND FLOOR SPA (BATHROOMS)	2	10-Oct-16	11-Oct-16	128	
FINAL FINISHES, MILLWORK, & MEP TRIMOUT		58	27-Sep-16	19-Dec-16	88	
		58	27-Sep-16	19-Dec-16	88	
2404	INSTALL MILLWORK @ 2ND FLOOR SPA	20	27-Sep-16	24-Oct-16	88	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

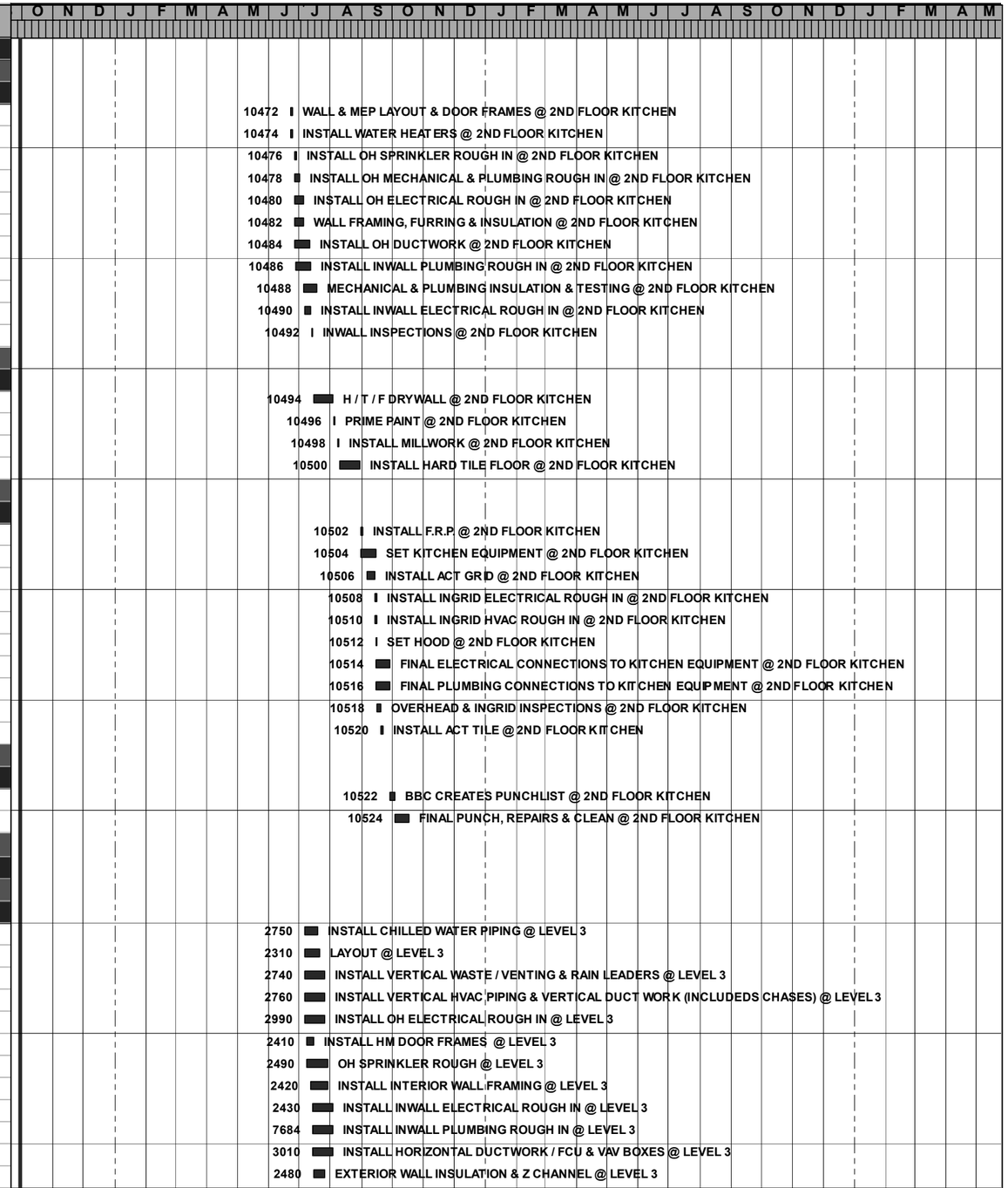
TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
2406	INSTALL HARD TILE @ 2ND FLOOR SPA (MANI/PEDI, SHOWERS & BATHROOMS)	8	25-Oct-16	03-Nov-16	88	
2408	1ST COAT PAINT WALLS & CEILINGS @ 2ND FLOOR SPA	5	04-Nov-16	10-Nov-16	88	
2414	INSTALL DUCTWORK TRIMOUT @ 2ND FLOOR SPA	5	11-Nov-16	17-Nov-16	96	
2412	INSTALL ELECTRICAL FIXTURES & TRIMOUT @ 2ND FLOOR SPA	9	11-Nov-16	23-Nov-16	88	
2030	INSTALL PLUMBING FIXTURES & TRIMOUT @ 2ND FLOOR SPA	4	28-Nov-16	01-Dec-16	88	
2416	INSTALL WOOD FLOORING @ 2ND FLOOR SPA	5	02-Dec-16	08-Dec-16	88	
2418	FINAL PAINT @ 2ND FLOOR SPA	5	09-Dec-16	15-Dec-16	88	
2422	INSTALL WALL COVERING @ 2ND FLOOR SPA	6	09-Dec-16	16-Dec-16	89	
2424	INSTALL BALANCE OF MILLWORK @ 2ND FLOOR SPA	2	16-Dec-16	19-Dec-16	88	
PUNCH & REPAIRS		13	20-Dec-16	09-Jan-17	88	
		13	20-Dec-16	09-Jan-17	88	
2032	BBC CREATES PUNCHLIST @ 2ND FLOOR SPA	3	20-Dec-16	22-Dec-16	88	
2426	FINAL PUNCH, REPAIRS & CLEAN @ 2ND FLOOR SPA	10	26-Dec-16	09-Jan-17	88	
PREFUNCTION ROOM AND BALL ROOM		228	20-Jun-16	11-May-17	0	
FRAMING & MEP ROUGH IN		37	20-Jun-16	10-Aug-16	42	
		37	20-Jun-16	10-Aug-16	42	
5432	WALL & MEP LAYOUT & DOOR FRAMES @ PREFUNCTION & BALL ROOM	10	20-Jun-16	01-Jul-16	0	
5436	WALL FRAMING, FURRING & INSULATION @ PREFUNCTION & BALL ROOM	10	22-Jun-16	06-Jul-16	7	
5448	INSTALL OH MECHANICAL & PLUMBING ROUGH IN @ PREFUNCTION & BALL ROOM	12	22-Jun-16	08-Jul-16	11	
5440	INSTALL INWALL PLUMBING ROUGH IN @ PREFUNCTION & BALL ROOM	5	29-Jun-16	06-Jul-16	13	
5438	INSTALL INWALL ELECTRICAL ROUGH IN @ PREFUNCTION & BALL ROOM	10	30-Jun-16	14-Jul-16	7	
5442	INSTALL OH SPRINKLER ROUGH IN @ PREFUNCTION & BALL ROOM	10	05-Jul-16	18-Jul-16	59	
5450	INSTALL OH DUCTWORK @ PREFUNCTION & BALL ROOM	15	05-Jul-16	25-Jul-16	0	
5446	INSTALL OH ELECTRICAL ROUGH IN @ PREFUNCTION & BALL ROOM	15	05-Jul-16	25-Jul-16	54	
5456	MECHANICAL & PLUMBING INSULATION & TESTING @ PREFUNCTION & BALL ROOM	12	11-Jul-16	26-Jul-16	11	
5452	INWALL INSPECTIONS @ PREFUNCTION & BALL ROOM	2	15-Jul-16	18-Jul-16	7	
5458	INSULATE DUCTWORK & TESTING @ PREFUNCTION & BALL ROOM	12	26-Jul-16	10-Aug-16	0	
DRYWALL, HARDTILE, & PRIME PAINT		94	19-Jul-16	30-Nov-16	0	
		94	19-Jul-16	30-Nov-16	0	
2034	HANG & TOP OUT DRYWALL @ PREFUNCTION & BALL ROOM	10	19-Jul-16	01-Aug-16	7	
2428	INSTALL CEILING FRAMING @ PREFUNCTION & BALL ROOM	35	11-Aug-16	29-Sep-16	0	5458 PRED?
2434	INSTALL HARD CEILING ELECTRICAL @ PREFUNCTION & BALL ROOM	25	06-Sep-16	10-Oct-16	0	
2436	INSTALL SPRINKLER TURNDOWNS @ PREFUNCTION & BALL ROOM	6	26-Sep-16	03-Oct-16	5	
2432	INSTALL OPERABLE PARTITIONS @ PREFUNCTION & BALL ROOM	5	30-Sep-16	06-Oct-16	2	
2438	OVERHEAD INSPECTIONS @ PREFUNCTION & BALL ROOM	2	11-Oct-16	12-Oct-16	0	
2442	HANG DRYWALL CEILINGS @ PREFUNCTION & BALL ROOM	12	13-Oct-16	28-Oct-16	0	
2444	TAPE & FINISH DRYWALL WALLS & CEILINGS @ PREFUNCTION & BALL ROOM	16	17-Oct-16	07-Nov-16	0	
2446	PRIME PAINT WALLS & CEILINGS @ PREFUNCTION & BALL ROOM	15	08-Nov-16	30-Nov-16	0	
FINAL FINISHES, MILLWORK, & MEP TRIMOUT		94	01-Dec-16	13-Apr-17	0	
		94	01-Dec-16	13-Apr-17	0	
2036	INSTALL MILLWORK @ PREFUNCTION & BALL ROOM	40	01-Dec-16	27-Jan-17	0	
2448	1ST COAT PAINT @ PREFUNCTION & BALL ROOM	15	30-Jan-17	17-Feb-17	0	
2454	INSTALL FINAL MEP FIXTURES & TRIMOUT @ PREFUNCTION & BALL ROOM	5	20-Feb-17	24-Feb-17	12	
2452	INSTALL LIGHT FIXTURES @ PREFUNCTION & BALL ROOM	17	20-Feb-17	14-Mar-17	0	
2462	FINAL PAINT @ PREFUNCTION & BALL ROOM	20	10-Mar-17	06-Apr-17	0	
2458	INSTALL HARD TILE FLOORING @ PREFUNCTION & BALL ROOM	12	15-Mar-17	30-Mar-17	0	
2456	INSTALL CARPET @ PREFUNCTION & BALL ROOM	6	06-Apr-17	13-Apr-17	0	
2464	DRYWALL POINT UP @ PREFUNCTION & BALL ROOM	4	07-Apr-17	12-Apr-17	1	
PUNCH & REPAIRS		20	14-Apr-17	11-May-17	0	
		20	14-Apr-17	11-May-17	0	
2038	BBC CREATES PUNCHLIST @ PREFUNCTION & BALL ROOM	5	14-Apr-17	20-Apr-17	0	
2466	FINAL PUNCH, REPAIRS & CLEAN @ PREFUNCTION & BALL ROOM	15	21-Apr-17	11-May-17	0	



R - 16954

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
2ND FLOOR KITCHEN		81	23-Jun-16	17-Oct-16	144	
FRAMING & MEP ROUGH IN		17	23-Jun-16	18-Jul-16	191	
		17	23-Jun-16	18-Jul-16	191	
10472	WALL & MEP LAYOUT & DOOR FRAMES @ 2ND FLOOR KITCHEN	2	23-Jun-16	24-Jun-16	144	
10474	INSTALL WATER HEATERS @ 2ND FLOOR KITCHEN	2	23-Jun-16	24-Jun-16	144	CONFIRM
10476	INSTALL OH SPRINKLER ROUGH IN @ 2ND FLOOR KITCHEN	2	27-Jun-16	28-Jun-16	204	
10478	INSTALL OH MECHANICAL & PLUMBING ROUGH IN @ 2ND FLOOR KITCHEN	5	27-Jun-16	01-Jul-16	191	
10480	INSTALL OH ELECTRICAL ROUGH IN @ 2ND FLOOR KITCHEN	6	27-Jun-16	05-Jul-16	200	
10482	WALL FRAMING, FURRING & INSULATION @ 2ND FLOOR KITCHEN	6	27-Jun-16	05-Jul-16	144	
10484	INSTALL OH DUCTWORK @ 2ND FLOOR KITCHEN	10	27-Jun-16	11-Jul-16	196	
10486	INSTALL INWALL PLUMBING ROUGH IN @ 2ND FLOOR KITCHEN	10	28-Jun-16	12-Jul-16	144	
10488	MECHANICAL & PLUMBING INSULATION & TESTING @ 2ND FLOOR KITCHEN	10	05-Jul-16	18-Jul-16	191	
10490	INSTALL INWALL ELECTRICAL ROUGH IN @ 2ND FLOOR KITCHEN	5	06-Jul-16	12-Jul-16	144	
10492	INWALL INSPECTIONS @ 2ND FLOOR KITCHEN	2	13-Jul-16	14-Jul-16	144	
DRYWALL, HARDTILE, & PRIME PAINT		33	15-Jul-16	30-Aug-16	144	
		33	15-Jul-16	30-Aug-16	144	
10494	H / T / F DRYWALL @ 2ND FLOOR KITCHEN	14	15-Jul-16	03-Aug-16	144	
10496	PRIME PAINT @ 2ND FLOOR KITCHEN	2	04-Aug-16	05-Aug-16	144	
10498	INSTALL MILLWORK @ 2ND FLOOR KITCHEN	2	08-Aug-16	09-Aug-16	144	
10500	INSTALL HARD TILE FLOOR @ 2ND FLOOR KITCHEN	15	10-Aug-16	30-Aug-16	144	
FINAL FINISHES, MILLWORK, & MEP TRIMOUT		20	31-Aug-16	28-Sep-16	144	
		20	31-Aug-16	28-Sep-16	144	
10502	INSTALL F.R.P. @ 2ND FLOOR KITCHEN	3	31-Aug-16	02-Sep-16	149	
10504	SET KITCHEN EQUIPMENT @ 2ND FLOOR KITCHEN	10	31-Aug-16	14-Sep-16	144	
10506	INSTALL ACT GRID @ 2ND FLOOR KITCHEN	6	06-Sep-16	13-Sep-16	149	
10508	INSTALL INGRID ELECTRICAL ROUGH IN @ 2ND FLOOR KITCHEN	2	14-Sep-16	15-Sep-16	149	
10510	INSTALL INGRID HVAC ROUGH IN @ 2ND FLOOR KITCHEN	2	14-Sep-16	15-Sep-16	149	
10512	SET HOOD @ 2ND FLOOR KITCHEN	1	15-Sep-16	15-Sep-16	153	
10514	FINAL ELECTRICAL CONNECTIONS TO KITCHEN EQUIPMENT @ 2ND FLOOR KITCHEN	10	15-Sep-16	28-Sep-16	144	
10516	FINAL PLUMBING CONNECTIONS TO KITCHEN EQUIPMENT @ 2ND FLOOR KITCHEN	10	15-Sep-16	28-Sep-16	144	
10518	OVERHEAD & INGRID INSPECTIONS @ 2ND FLOOR KITCHEN	2	16-Sep-16	19-Sep-16	149	
10520	INSTALL ACT TILE @ 2ND FLOOR KITCHEN	2	20-Sep-16	21-Sep-16	149	
PUNCH & REPAIRS		13	29-Sep-16	17-Oct-16	144	
		13	29-Sep-16	17-Oct-16	144	
10522	BBC CREATES PUNCHLIST @ 2ND FLOOR KITCHEN	3	29-Sep-16	03-Oct-16	144	
10524	FINAL PUNCH, REPAIRS & CLEAN @ 2ND FLOOR KITCHEN	10	04-Oct-16	17-Oct-16	144	
LEVEL 3		116	06-Jul-16	19-Dec-16	101	
LEVEL 3		116	06-Jul-16	19-Dec-16	101	
FRAMING & MEP ROUGH IN		25	06-Jul-16	09-Aug-16	118	
		25	06-Jul-16	09-Aug-16	118	
2750	INSTALL CHILLED WATER PIPING @ LEVEL 3	10	06-Jul-16	19-Jul-16	133	
2310	LAYOUT @ LEVEL 3	12	06-Jul-16	21-Jul-16	51	
2740	INSTALL VERTICAL WASTE / VENTING & RAIN LEADERS @ LEVEL 3	15	06-Jul-16	26-Jul-16	128	
2760	INSTALL VERTICAL HVAC PIPING & VERTICAL DUCT WORK (INCLUDEDS CHASES) @ LEVI	15	06-Jul-16	26-Jul-16	55	
2990	INSTALL OH ELECTRICAL ROUGH IN @ LEVEL 3	15	06-Jul-16	26-Jul-16	128	
2410	INSTALL HM DOOR FRAMES @ LEVEL 3	6	08-Jul-16	15-Jul-16	51	
2490	OH SPRINKLER ROUGH @ LEVEL 3	16	08-Jul-16	29-Jul-16	125	
2420	INSTALL INTERIOR WALL FRAMING @ LEVEL 3	14	12-Jul-16	29-Jul-16	51	
2430	INSTALL INWALL ELECTRICAL ROUGH IN @ LEVEL 3	15	14-Jul-16	03-Aug-16	51	
7684	INSTALL INWALL PLUMBING ROUGH IN @ LEVEL 3	15	14-Jul-16	03-Aug-16	51	
3010	INSTALL HORIZONTAL DUCTWORK / FCU & VAV BOXES @ LEVEL 3	15	14-Jul-16	03-Aug-16	122	
2480	EXTERIOR WALL INSULATION & Z CHANNEL @ LEVEL 3	8	15-Jul-16	26-Jul-16	59	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
7934	DUCT TESTING & INSULATION @ LEVEL 3	10	15-Jul-16	28-Jul-16	55	
3080	INSTALL MECHANICAL CONTROL WIRING @ LEVEL 3	10	21-Jul-16	03-Aug-16	51	
7924	INSTALL FIRE CAULKING @ LEVEL 3	10	22-Jul-16	04-Aug-16	52	
7704	INWALL MEP INSPECTIONS @ LEVEL 3	2	04-Aug-16	05-Aug-16	51	
7714	FRAMING INSPECTION @ LEVEL 3	2	08-Aug-16	09-Aug-16	51	
DRYWALL, HARDTILE, & PRIME PAINT		43	10-Aug-16	10-Oct-16	101	
		43	10-Aug-16	10-Oct-16	101	
2250	INSULATE & HANG DRYWALL & DURAROCK @ LEVEL 3 (WALLS)	15	10-Aug-16	30-Aug-16	51	
7944	CEILING & SOFFIT FRAMING @ LEVEL 3	12	16-Aug-16	31-Aug-16	101	
2270	TAPE & FINISH DRYWALL WALLS @ LEVEL 3	15	17-Aug-16	07-Sep-16	114	
7954	MECHANICAL ROUGH IN CEILINGS & SOFFITS @ LEVEL 3	10	19-Aug-16	01-Sep-16	101	
7956	ELECTRICAL ROUGH IN CEILINGS & SOFFITS @ LEVEL 3	10	19-Aug-16	01-Sep-16	101	
7966	OH & CEILING SOFFIT MEP INSPECTION @ LEVEL 3	2	02-Sep-16	06-Sep-16	101	
7976	SOFFIT FRAMING INSPECTION @ LEVEL 3	2	07-Sep-16	08-Sep-16	101	
7986	HANG DRYWALL CEILINGS & SOFFITS @ LEVEL 3	14	09-Sep-16	28-Sep-16	101	
7996	TAPE & FINISH DRYWALL CEILINGS & SOFFITS @ LEVEL 3	12	20-Sep-16	05-Oct-16	101	
8006	PRIME & 1ST COAT @ LEVEL 3	10	27-Sep-16	10-Oct-16	101	
ELECTRICAL CLOSETS		25	17-Aug-16	21-Sep-16	149	
		25	17-Aug-16	21-Sep-16	149	
2720	BUILD OUT ELECTRICAL ROOMS @ LEVEL 3	25	17-Aug-16	21-Sep-16	149	
IDF ROOM		20	17-Aug-16	14-Sep-16	154	
		20	17-Aug-16	14-Sep-16	154	
7914	BUILD OUT IDF ROOM @ LEVEL 3	20	17-Aug-16	14-Sep-16	154	
BATHROOMS		30	04-Oct-16	14-Nov-16	111	
		30	04-Oct-16	14-Nov-16	111	
7964	INSTALL HARDTILE @ LEVEL 3 (RESTROOMS)	15	04-Oct-16	24-Oct-16	111	
7974	SET OWNER SUPPLIED VANITIES & TOPS @ LEVEL 3 (RESTROOMS)	10	11-Oct-16	24-Oct-16	117	
8014	INSTALL RESTROOM ACCESSORIES @ LEVEL 3 (RESTROOMS)	15	17-Oct-16	04-Nov-16	117	
7984	PLUMBING FIXTURE TRIMOUT @ LEVEL 3 (RESTROOMS)	12	18-Oct-16	02-Nov-16	117	
8004	MECHANICAL TRIMOUT @ LEVEL 3 (RESTROOMS)	10	25-Oct-16	07-Nov-16	116	
7994	ELECTRICAL LIGHTING & TRIMOUT @ LEVEL 3 (RESTROOMS)	15	25-Oct-16	14-Nov-16	111	
LINEN / STORAGE CLOSET		20	17-Aug-16	14-Sep-16	154	
		20	17-Aug-16	14-Sep-16	154	
7904	BUILD OUT LINEN CLOSET / STORAGE ROOM @ LEVEL 3	20	17-Aug-16	14-Sep-16	154	
FINAL FINISHES, MILLWORK, & MEP TRIMOUT		40	04-Oct-16	30-Nov-16	101	
		40	04-Oct-16	30-Nov-16	101	
2440	INSTALL MILLWORK @ LEVEL 3 (GUESTROOMS & CORRIDORS) BASEBOARD, CROWN MO	20	04-Oct-16	31-Oct-16	104	
2670	INSTALL DOORS & HARDWARE @ LEVEL 3 @ LEVEL 3 (GUESTROOMS)	10	11-Oct-16	24-Oct-16	126	
2460	INSTALL WALL COVERING @ LEVEL 3 (GUESTROOMS, CORRIDORS & RESTROOMS)	15	11-Oct-16	31-Oct-16	101	
2710	INSTALL CARPET @ LEVEL 3 (GUESTROOMS & CORRIDORS)	15	20-Oct-16	09-Nov-16	104	
2640	INSTALL LIGHT FIXTURES @ LEVEL 3 (GUESTROOMS)	10	21-Oct-16	03-Nov-16	118	
2700	FINAL PAINT @ LEVEL 3	10	01-Nov-16	14-Nov-16	101	
2730	INSTALL OWNER SUPPLIED FFE @ LEVEL 3 (GUESTROOMS)	15	08-Nov-16	30-Nov-16	101	check with tim
PUNCH & REPAIRS		13	01-Dec-16	19-Dec-16	101	
		13	01-Dec-16	19-Dec-16	101	
2450	BBC CREATES PUNCHLIST @ LEVEL 3	3	01-Dec-16	05-Dec-16	101	
2280	FINAL PUNCH, REPAIRS & CLEAN @ LEVEL 3	10	06-Dec-16	19-Dec-16	101	
LEVEL 4		116	20-Jul-16	04-Jan-17	91	
LEVEL 4		116	20-Jul-16	04-Jan-17	91	
FRAMING & MEP ROUGH IN		25	20-Jul-16	23-Aug-16	113	
		25	20-Jul-16	23-Aug-16	113	
8304	INSTALL CHILLED WATER PIPING @ LEVEL 4	10	20-Jul-16	02-Aug-16	123	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
8314	LAYOUT @ LEVEL 4	12	20-Jul-16	04-Aug-16	51	
8324	INSTALL VERTICAL WASTE / VENTING & RAIN LEADERS @ LEVEL 4	15	20-Jul-16	09-Aug-16	123	
8334	INSTALL VERTICAL HVAC PIPING & VERTICAL DUCT WORK (INCLUDEDS CHASES) @ LEVI	15	20-Jul-16	09-Aug-16	55	
8344	INSTALL OH ELECTRICAL ROUGH IN @ LEVEL 4	15	20-Jul-16	09-Aug-16	118	
8354	INSTALL HM DOOR FRAMES @ LEVEL 4	6	22-Jul-16	29-Jul-16	51	
8364	OH SPRINKLER ROUGH @ LEVEL 4	16	22-Jul-16	12-Aug-16	115	
8374	INSTALL INTERIOR WALL FRAMING @ LEVEL 4	14	26-Jul-16	12-Aug-16	51	
8384	INSTALL INWALL ELECTRICAL ROUGH IN @ LEVEL 4	15	28-Jul-16	17-Aug-16	51	
8394	INSTALL INWALL PLUMBING ROUGH IN @ LEVEL 4	15	28-Jul-16	17-Aug-16	51	
8404	INSTALL HORIZONTAL DUCTWORK / FCU & VAV BOXES @ LEVEL 4	15	28-Jul-16	17-Aug-16	112	
8414	EXTERIOR WALL INSULATION & Z CHANNEL @ LEVEL 4	8	29-Jul-16	09-Aug-16	59	
8424	DUCT TESTING & INSULATION @ LEVEL 4	10	29-Jul-16	11-Aug-16	55	
8434	INSTALL MECHANICAL CONTROL WIRING @ LEVEL 4	10	04-Aug-16	17-Aug-16	51	
8444	INSTALL FIRE CAULKING @ LEVEL 4	10	05-Aug-16	18-Aug-16	52	
8454	INWALL MEP INSPECTIONS @ LEVEL 4	2	18-Aug-16	19-Aug-16	51	
8464	FRAMING INSPECTION @ LEVEL 4	2	22-Aug-16	23-Aug-16	51	
DRYWALL, HARDTILE, & PRIME PAINT		43	24-Aug-16	24-Oct-16	91	
		43	24-Aug-16	24-Oct-16	91	
8204	INSULATE & HANG DRYWALL & DURAROCK @ LEVEL 4 (WALLS)	15	24-Aug-16	14-Sep-16	51	
8214	CEILING & SOFFIT FRAMING @ LEVEL 4	12	30-Aug-16	15-Sep-16	91	
8224	TAPE & FINISH DRYWALL WALLS @ LEVEL 4	15	31-Aug-16	21-Sep-16	104	
8234	MECHANICAL ROUGH IN CEILINGS & SOFFITS @ LEVEL 4	10	02-Sep-16	16-Sep-16	91	
8244	ELECTRICAL ROUGH IN CEILINGS & SOFFITS @ LEVEL 4	10	02-Sep-16	16-Sep-16	91	
8254	OH & CEILING SOFFIT MEP INSPECTION @ LEVEL 4	2	19-Sep-16	20-Sep-16	91	
8264	SOFFIT FRAMING INSPECTION @ LEVEL 4	2	21-Sep-16	22-Sep-16	91	
8274	HANG DRYWALL CEILINGS & SOFFITS @ LEVEL 4	14	23-Sep-16	12-Oct-16	91	
8284	TAPE & FINISH DRYWALL CEILINGS & SOFFITS @ LEVEL 4	12	04-Oct-16	19-Oct-16	91	
8294	PRIME & 1ST COAT @ LEVEL 4	10	11-Oct-16	24-Oct-16	91	
ELECTRICAL CLOSETS		25	13-Oct-16	16-Nov-16	112	
		25	13-Oct-16	16-Nov-16	112	
8194	BUILD OUT ELECTRICAL ROOMS @ LEVEL 4	25	13-Oct-16	16-Nov-16	112	
IDF ROOM		20	31-Aug-16	28-Sep-16	144	
		20	31-Aug-16	28-Sep-16	144	
8184	BUILD OUT IDF ROOM @ LEVEL 4	20	31-Aug-16	28-Sep-16	144	
BATHROOMS		30	18-Oct-16	30-Nov-16	101	
		30	18-Oct-16	30-Nov-16	101	
8124	INSTALL HARDTILE @ LEVEL 4 (RESTROOMS)	15	18-Oct-16	07-Nov-16	101	
8134	SET OWNER SUPPLIED VANITIES & TOPS @ LEVEL 4 (RESTROOMS)	10	25-Oct-16	07-Nov-16	107	
8144	INSTALL RESTROOM ACCESSORIES @ LEVEL 4 (RESTROOMS)	15	31-Oct-16	18-Nov-16	107	
8154	PLUMBING FIXTURE TRIMOUT @ LEVEL 4 (RESTROOMS)	12	01-Nov-16	16-Nov-16	107	
8164	MECHANICAL TRIMOUT @ LEVEL 4 (RESTROOMS)	10	08-Nov-16	21-Nov-16	106	
8174	ELECTRICAL LIGHTING & TRIMOUT @ LEVEL 4 (RESTROOMS)	15	08-Nov-16	30-Nov-16	101	
LINEN / STORAGE CLOSET		20	31-Aug-16	28-Sep-16	144	
		20	31-Aug-16	28-Sep-16	144	
8114	BUILD OUT LINEN CLOSET / STORAGE ROOM @ LEVEL 4	20	31-Aug-16	28-Sep-16	144	
FINAL FINISHES, MILLWORK, & MEP TRIMOUT		40	18-Oct-16	14-Dec-16	91	
		40	18-Oct-16	14-Dec-16	91	
8044	INSTALL MILLWORK @ LEVEL 4 (GUESTROOMS & CORRIDORS) BASEBOARD, CROWN MO	20	18-Oct-16	14-Nov-16	94	
8054	INSTALL DOORS & HARDWARE @ LEVEL 4 @ LEVEL 4 (GUESTROOMS)	10	25-Oct-16	07-Nov-16	116	
8064	INSTALL WALL COVERING @ LEVEL 4 (GUESTROOMS, CORRIDORS & RESTROOMS)	15	25-Oct-16	14-Nov-16	91	
8074	INSTALL CARPET @ LEVEL 4 (GUESTROOMS & CORRIDORS)	15	03-Nov-16	23-Nov-16	94	
8084	INSTALL LIGHT FIXTURES @ LEVEL 4 (GUESTROOMS)	10	04-Nov-16	17-Nov-16	108	



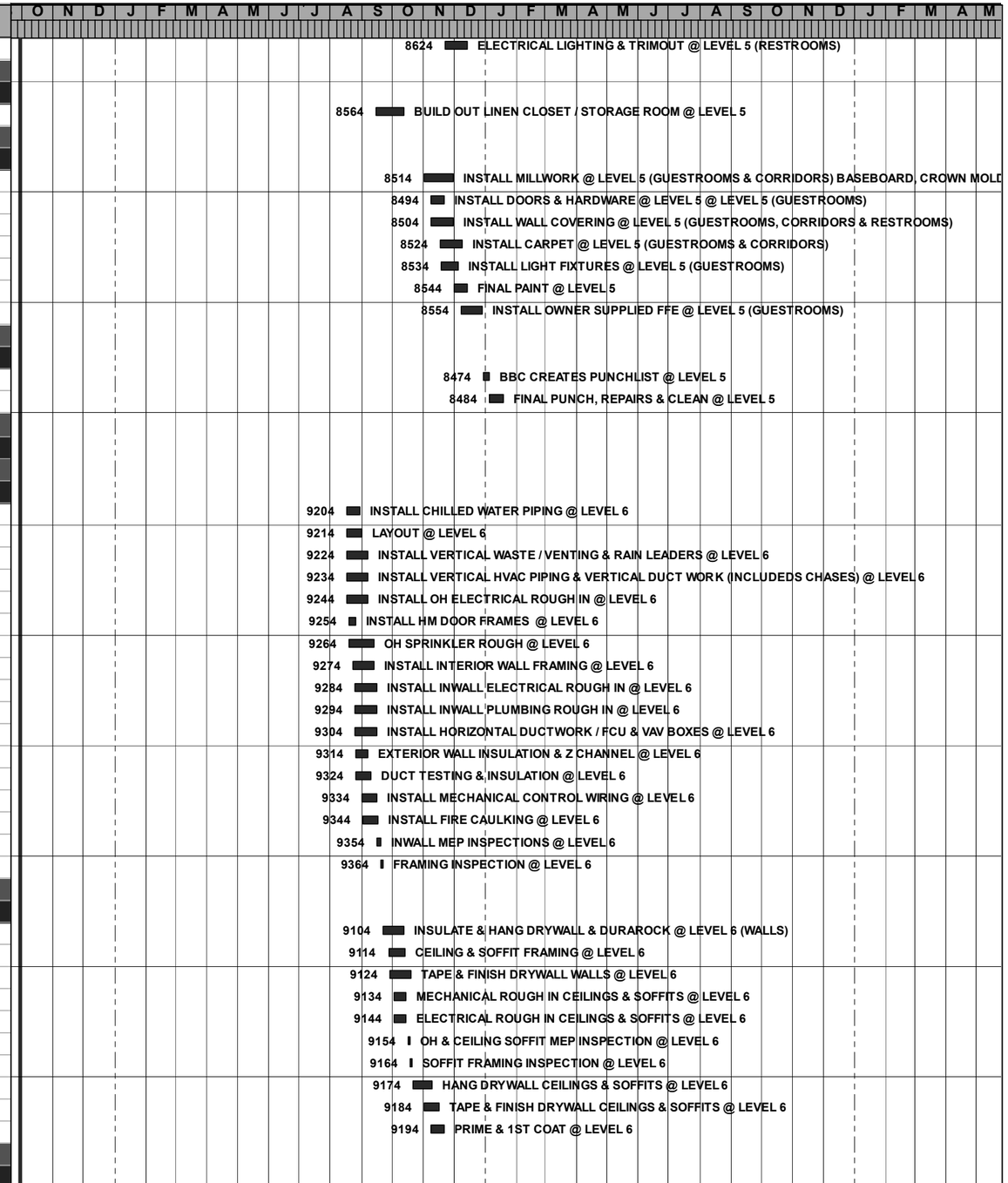
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
8094	FINAL PAINT @ LEVEL 4	10	15-Nov-16	30-Nov-16	91	
8104	INSTALL OWNER SUPPLIED FFE @ LEVEL 4 (GUESTROOMS)	15	22-Nov-16	14-Dec-16	91	check with tim
PUNCH & REPAIRS		13	15-Dec-16	04-Jan-17	91	
		13	15-Dec-16	04-Jan-17	91	
8024	BBC CREATES PUNCHLIST @ LEVEL 4	3	15-Dec-16	19-Dec-16	91	
8034	FINAL PUNCH, REPAIRS & CLEAN @ LEVEL 4	10	20-Dec-16	04-Jan-17	91	
LEVEL 5		116	03-Aug-16	18-Jan-17	81	
LEVEL 5		116	03-Aug-16	18-Jan-17	81	
FRAMING & MEP ROUGH IN		25	03-Aug-16	07-Sep-16	103	
		25	03-Aug-16	07-Sep-16	103	
8754	INSTALL CHILLED WATER PIPING @ LEVEL 5	10	03-Aug-16	16-Aug-16	113	
8764	LAYOUT @ LEVEL 5	12	03-Aug-16	18-Aug-16	51	
8774	INSTALL VERTICAL WASTE / VENTING & RAIN LEADERS @ LEVEL 5	15	03-Aug-16	23-Aug-16	113	
8784	INSTALL VERTICAL HVAC PIPING & VERTICAL DUCT WORK (INCLUDEDS CHASES) @ LEVI	15	03-Aug-16	23-Aug-16	55	
8794	INSTALL OH ELECTRICAL ROUGH IN @ LEVEL 5	15	03-Aug-16	23-Aug-16	108	
8804	INSTALL HM DOOR FRAMES @ LEVEL 5	6	05-Aug-16	12-Aug-16	51	
8814	OH SPRINKLER ROUGH @ LEVEL 5	16	05-Aug-16	26-Aug-16	105	
8824	INSTALL INTERIOR WALL FRAMING @ LEVEL 5	14	09-Aug-16	26-Aug-16	51	
8834	INSTALL INWALL ELECTRICAL ROUGH IN @ LEVEL 5	15	11-Aug-16	31-Aug-16	51	
8844	INSTALL INWALL PLUMBING ROUGH IN @ LEVEL 5	15	11-Aug-16	31-Aug-16	51	
8854	INSTALL HORIZONTAL DUCTWORK / FCU & VAV BOXES @ LEVEL 5	15	11-Aug-16	31-Aug-16	102	
8864	EXTERIOR WALL INSULATION & Z CHANNEL @ LEVEL 5	8	12-Aug-16	23-Aug-16	59	
8874	DUCT TESTING & INSULATION @ LEVEL 5	10	12-Aug-16	25-Aug-16	55	
8884	INSTALL MECHANICAL CONTROL WIRING @ LEVEL 5	10	18-Aug-16	31-Aug-16	51	
8894	INSTALL FIRE CAULKING @ LEVEL 5	10	19-Aug-16	01-Sep-16	52	
8904	INWALL MEP INSPECTIONS @ LEVEL 5	2	01-Sep-16	02-Sep-16	51	
8914	FRAMING INSPECTION @ LEVEL 5	2	06-Sep-16	07-Sep-16	51	
DRYWALL, HARDTILE, & PRIME PAINT		43	08-Sep-16	07-Nov-16	81	
		43	08-Sep-16	07-Nov-16	81	
8654	INSULATE & HANG DRYWALL & DURAROCK @ LEVEL 5 (WALLS)	15	08-Sep-16	28-Sep-16	51	
8664	CEILING & SOFFIT FRAMING @ LEVEL 5	12	14-Sep-16	29-Sep-16	81	
8674	TAPE & FINISH DRYWALL WALLS @ LEVEL 5	15	15-Sep-16	05-Oct-16	94	
8684	MECHANICAL ROUGH IN CEILINGS & SOFFITS @ LEVEL 5	10	19-Sep-16	30-Sep-16	81	
8694	ELECTRICAL ROUGH IN CEILINGS & SOFFITS @ LEVEL 5	10	19-Sep-16	30-Sep-16	81	
8704	OH & CEILING SOFFIT MEP INSPECTION @ LEVEL 5	2	03-Oct-16	04-Oct-16	81	
8714	SOFFIT FRAMING INSPECTION @ LEVEL 5	2	05-Oct-16	06-Oct-16	81	
8724	HANG DRYWALL CEILINGS & SOFFITS @ LEVEL 5	14	07-Oct-16	26-Oct-16	81	
8734	TAPE & FINISH DRYWALL CEILINGS & SOFFITS @ LEVEL 5	12	18-Oct-16	02-Nov-16	81	
8744	PRIME & 1ST COAT @ LEVEL 5	10	25-Oct-16	07-Nov-16	81	
ELECTRICAL CLOSETS		25	27-Oct-16	02-Dec-16	102	
		25	27-Oct-16	02-Dec-16	102	
8644	BUILD OUT ELECTRICAL ROOMS @ LEVEL 5	25	27-Oct-16	02-Dec-16	102	
IDF ROOM		20	15-Sep-16	12-Oct-16	134	
		20	15-Sep-16	12-Oct-16	134	
8634	BUILD OUT IDF ROOM @ LEVEL 5	20	15-Sep-16	12-Oct-16	134	
BATHROOMS		30	01-Nov-16	14-Dec-16	91	
		30	01-Nov-16	14-Dec-16	91	
8574	INSTALL HARDTILE @ LEVEL 5 (RESTROOMS)	15	01-Nov-16	21-Nov-16	91	
8584	SET OWNER SUPPLIED VANITIES & TOPS @ LEVEL 5 (RESTROOMS)	10	08-Nov-16	21-Nov-16	97	
8594	INSTALL RESTROOM ACCESSORIES @ LEVEL 5 (RESTROOMS)	15	14-Nov-16	06-Dec-16	97	
8604	PLUMBING FIXTURE TRIMOUT @ LEVEL 5 (RESTROOMS)	12	15-Nov-16	02-Dec-16	97	
8614	MECHANICAL TRIMOUT @ LEVEL 5 (RESTROOMS)	10	22-Nov-16	07-Dec-16	96	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

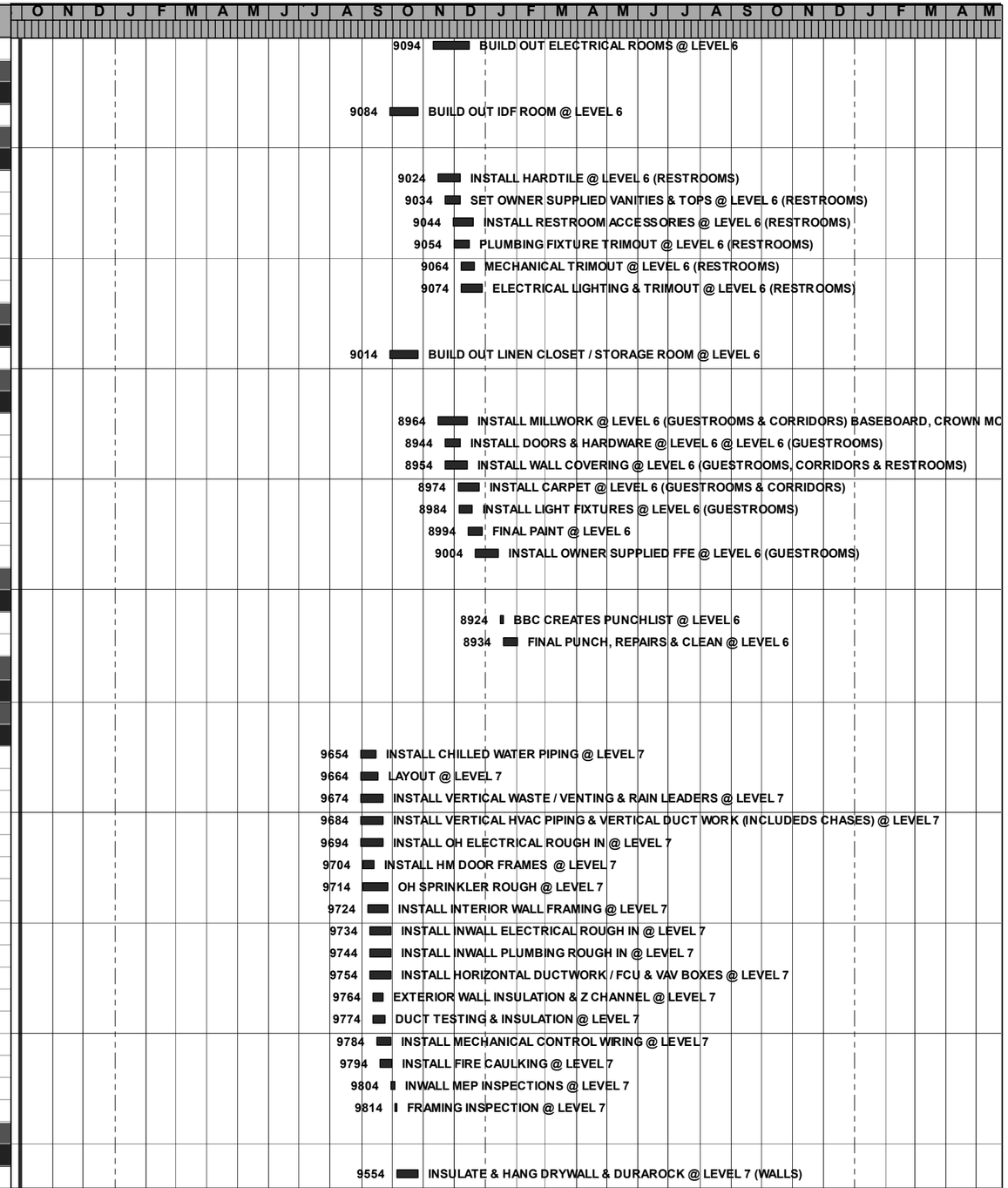
TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
8624	ELECTRICAL LIGHTING & TRIMOUT @ LEVEL 5 (RESTROOMS)	15	22-Nov-16	14-Dec-16	91	
LINEN / STORAGE CLOSET		20	15-Sep-16	12-Oct-16	134	
		20	15-Sep-16	12-Oct-16	134	
8564	BUILD OUT LINEN CLOSET / STORAGE ROOM @ LEVEL 5	20	15-Sep-16	12-Oct-16	134	
FINAL FINISHES, MILLWORK, & MEP TRIMOUT		40	01-Nov-16	29-Dec-16	81	
		40	01-Nov-16	29-Dec-16	81	
8514	INSTALL MILLWORK @ LEVEL 5 (GUESTROOMS & CORRIDORS) BASEBOARD, CROWN MO	20	01-Nov-16	30-Nov-16	84	
8494	INSTALL DOORS & HARDWARE @ LEVEL 5 @ LEVEL 5 (GUESTROOMS)	10	08-Nov-16	21-Nov-16	106	
8504	INSTALL WALL COVERING @ LEVEL 5 (GUESTROOMS, CORRIDORS & RESTROOMS)	15	08-Nov-16	30-Nov-16	81	
8524	INSTALL CARPET @ LEVEL 5 (GUESTROOMS & CORRIDORS)	15	17-Nov-16	09-Dec-16	84	
8534	INSTALL LIGHT FIXTURES @ LEVEL 5 (GUESTROOMS)	10	18-Nov-16	05-Dec-16	98	
8544	FINAL PAINT @ LEVEL 5	10	01-Dec-16	14-Dec-16	81	
8554	INSTALL OWNER SUPPLIED FFE @ LEVEL 5 (GUESTROOMS)	15	08-Dec-16	29-Dec-16	81	check with tim
PUNCH & REPAIRS		13	30-Dec-16	18-Jan-17	81	
		13	30-Dec-16	18-Jan-17	81	
8474	BBC CREATES PUNCHLIST @ LEVEL 5	3	30-Dec-16	04-Jan-17	81	
8484	FINAL PUNCH, REPAIRS & CLEAN @ LEVEL 5	10	05-Jan-17	18-Jan-17	81	
LEVEL 6		116	17-Aug-16	01-Feb-17	71	
LEVEL 6		116	17-Aug-16	01-Feb-17	71	
FRAMING & MEP ROUGH IN		25	17-Aug-16	21-Sep-16	93	
		25	17-Aug-16	21-Sep-16	93	
9204	INSTALL CHILLED WATER PIPING @ LEVEL 6	10	17-Aug-16	30-Aug-16	103	
9214	LAYOUT @ LEVEL 6	12	17-Aug-16	01-Sep-16	51	
9224	INSTALL VERTICAL WASTE / VENTING & RAIN LEADERS @ LEVEL 6	15	17-Aug-16	07-Sep-16	103	
9234	INSTALL VERTICAL HVAC PIPING & VERTICAL DUCT WORK (INCLUDEDS CHASES) @ LEVI	15	17-Aug-16	07-Sep-16	55	
9244	INSTALL OH ELECTRICAL ROUGH IN @ LEVEL 6	15	17-Aug-16	07-Sep-16	98	
9254	INSTALL HM DOOR FRAMES @ LEVEL 6	6	19-Aug-16	26-Aug-16	51	
9264	OH SPRINKLER ROUGH @ LEVEL 6	16	19-Aug-16	12-Sep-16	95	
9274	INSTALL INTERIOR WALL FRAMING @ LEVEL 6	14	23-Aug-16	12-Sep-16	51	
9284	INSTALL INWALL ELECTRICAL ROUGH IN @ LEVEL 6	15	25-Aug-16	15-Sep-16	51	
9294	INSTALL INWALL PLUMBING ROUGH IN @ LEVEL 6	15	25-Aug-16	15-Sep-16	51	
9304	INSTALL HORIZONTAL DUCTWORK / FCU & VAV BOXES @ LEVEL 6	15	25-Aug-16	15-Sep-16	92	
9314	EXTERIOR WALL INSULATION & Z CHANNEL @ LEVEL 6	8	26-Aug-16	07-Sep-16	59	
9324	DUCT TESTING & INSULATION @ LEVEL 6	10	26-Aug-16	09-Sep-16	55	
9334	INSTALL MECHANICAL CONTROL WIRING @ LEVEL 6	10	01-Sep-16	15-Sep-16	51	
9344	INSTALL FIRE CAULKING @ LEVEL 6	10	02-Sep-16	16-Sep-16	52	
9354	INWALL MEP INSPECTIONS @ LEVEL 6	2	16-Sep-16	19-Sep-16	51	
9364	FRAMING INSPECTION @ LEVEL 6	2	20-Sep-16	21-Sep-16	51	
DRYWALL, HARDTILE, & PRIME PAINT		43	22-Sep-16	21-Nov-16	71	
		43	22-Sep-16	21-Nov-16	71	
9104	INSULATE & HANG DRYWALL & DURAROCK @ LEVEL 6 (WALLS)	15	22-Sep-16	12-Oct-16	51	
9114	CEILING & SOFFIT FRAMING @ LEVEL 6	12	28-Sep-16	13-Oct-16	71	
9124	TAPE & FINISH DRYWALL WALLS @ LEVEL 6	15	29-Sep-16	19-Oct-16	84	
9134	MECHANICAL ROUGH IN CEILINGS & SOFFITS @ LEVEL 6	10	03-Oct-16	14-Oct-16	71	
9144	ELECTRICAL ROUGH IN CEILINGS & SOFFITS @ LEVEL 6	10	03-Oct-16	14-Oct-16	71	
9154	OH & CEILING SOFFIT MEP INSPECTION @ LEVEL 6	2	17-Oct-16	18-Oct-16	71	
9164	SOFFIT FRAMING INSPECTION @ LEVEL 6	2	19-Oct-16	20-Oct-16	71	
9174	HANG DRYWALL CEILINGS & SOFFITS @ LEVEL 6	14	21-Oct-16	09-Nov-16	71	
9184	TAPE & FINISH DRYWALL CEILINGS & SOFFITS @ LEVEL 6	12	01-Nov-16	16-Nov-16	71	
9194	PRIME & 1ST COAT @ LEVEL 6	10	08-Nov-16	21-Nov-16	71	
ELECTRICAL CLOSETS		25	10-Nov-16	16-Dec-16	92	
		25	10-Nov-16	16-Dec-16	92	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

R - 16959

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
9094	BUILD OUT ELECTRICAL ROOMS @ LEVEL 6	25	10-Nov-16	16-Dec-16	92	
IDF ROOM		20	29-Sep-16	26-Oct-16	124	
		20	29-Sep-16	26-Oct-16	124	
9084	BUILD OUT IDF ROOM @ LEVEL 6	20	29-Sep-16	26-Oct-16	124	
BATHROOMS		30	15-Nov-16	29-Dec-16	81	
		30	15-Nov-16	29-Dec-16	81	
9024	INSTALL HARDTILE @ LEVEL 6 (RESTROOMS)	15	15-Nov-16	07-Dec-16	81	
9034	SET OWNER SUPPLIED VANITIES & TOPS @ LEVEL 6 (RESTROOMS)	10	22-Nov-16	07-Dec-16	87	
9044	INSTALL RESTROOM ACCESSORIES @ LEVEL 6 (RESTROOMS)	15	30-Nov-16	20-Dec-16	87	
9054	PLUMBING FIXTURE TRIMOUT @ LEVEL 6 (RESTROOMS)	12	01-Dec-16	16-Dec-16	87	
9064	MECHANICAL TRIMOUT @ LEVEL 6 (RESTROOMS)	10	08-Dec-16	21-Dec-16	86	
9074	ELECTRICAL LIGHTING & TRIMOUT @ LEVEL 6 (RESTROOMS)	15	08-Dec-16	29-Dec-16	81	
LINEN / STORAGE CLOSET		20	29-Sep-16	26-Oct-16	124	
		20	29-Sep-16	26-Oct-16	124	
9014	BUILD OUT LINEN CLOSET / STORAGE ROOM @ LEVEL 6	20	29-Sep-16	26-Oct-16	124	
FINAL FINISHES, MILLWORK, & MEP TRIMOUT		40	15-Nov-16	13-Jan-17	71	
		40	15-Nov-16	13-Jan-17	71	
8964	INSTALL MILLWORK @ LEVEL 6 (GUESTROOMS & CORRIDORS) BASEBOARD, CROWN MO	20	15-Nov-16	14-Dec-16	74	
8944	INSTALL DOORS & HARDWARE @ LEVEL 6 @ LEVEL 6 (GUESTROOMS)	10	22-Nov-16	07-Dec-16	96	
8954	INSTALL WALL COVERING @ LEVEL 6 (GUESTROOMS, CORRIDORS & RESTROOMS)	15	22-Nov-16	14-Dec-16	71	
8974	INSTALL CARPET @ LEVEL 6 (GUESTROOMS & CORRIDORS)	15	05-Dec-16	26-Dec-16	74	
8984	INSTALL LIGHT FIXTURES @ LEVEL 6 (GUESTROOMS)	10	06-Dec-16	19-Dec-16	88	
8994	FINAL PAINT @ LEVEL 6	10	15-Dec-16	29-Dec-16	71	
9004	INSTALL OWNER SUPPLIED FFE @ LEVEL 6 (GUESTROOMS)	15	22-Dec-16	13-Jan-17	71	check with tim
PUNCH & REPAIRS		13	16-Jan-17	01-Feb-17	71	
		13	16-Jan-17	01-Feb-17	71	
8924	BBC CREATES PUNCHLIST @ LEVEL 6	3	16-Jan-17	18-Jan-17	71	
8934	FINAL PUNCH, REPAIRS & CLEAN @ LEVEL 6	10	19-Jan-17	01-Feb-17	71	
LEVEL 7		116	31-Aug-16	15-Feb-17	61	
LEVEL 7		116	31-Aug-16	15-Feb-17	61	
FRAMING & MEP ROUGH IN		25	31-Aug-16	05-Oct-16	83	
		25	31-Aug-16	05-Oct-16	83	
9654	INSTALL CHILLED WATER PIPING @ LEVEL 7	10	31-Aug-16	14-Sep-16	93	
9664	LAYOUT @ LEVEL 7	12	31-Aug-16	16-Sep-16	51	
9674	INSTALL VERTICAL WASTE / VENTING & RAIN LEADERS @ LEVEL 7	15	31-Aug-16	21-Sep-16	93	
9684	INSTALL VERTICAL HVAC PIPING & VERTICAL DUCT WORK (INCLUDEDS CHASES) @ LEVI	15	31-Aug-16	21-Sep-16	55	
9694	INSTALL OH ELECTRICAL ROUGH IN @ LEVEL 7	15	31-Aug-16	21-Sep-16	88	
9704	INSTALL HM DOOR FRAMES @ LEVEL 7	6	02-Sep-16	12-Sep-16	51	
9714	OH SPRINKLER ROUGH @ LEVEL 7	16	02-Sep-16	26-Sep-16	85	
9724	INSTALL INTERIOR WALL FRAMING @ LEVEL 7	14	07-Sep-16	26-Sep-16	51	
9734	INSTALL INWALL ELECTRICAL ROUGH IN @ LEVEL 7	15	09-Sep-16	29-Sep-16	51	
9744	INSTALL INWALL PLUMBING ROUGH IN @ LEVEL 7	15	09-Sep-16	29-Sep-16	51	
9754	INSTALL HORIZONTAL DUCTWORK / FCU & VAV BOXES @ LEVEL 7	15	09-Sep-16	29-Sep-16	82	
9764	EXTERIOR WALL INSULATION & Z CHANNEL @ LEVEL 7	8	12-Sep-16	21-Sep-16	59	
9774	DUCT TESTING & INSULATION @ LEVEL 7	10	12-Sep-16	23-Sep-16	55	
9784	INSTALL MECHANICAL CONTROL WIRING @ LEVEL 7	10	16-Sep-16	29-Sep-16	51	
9794	INSTALL FIRE CAULKING @ LEVEL 7	10	19-Sep-16	30-Sep-16	52	
9804	INWALL MEP INSPECTIONS @ LEVEL 7	2	30-Sep-16	03-Oct-16	51	
9814	FRAMING INSPECTION @ LEVEL 7	2	04-Oct-16	05-Oct-16	51	
DRYWALL, HARDTILE, & PRIME PAINT		43	06-Oct-16	07-Dec-16	61	
		43	06-Oct-16	07-Dec-16	61	
9554	INSULATE & HANG DRYWALL & DURAROCK @ LEVEL 7 (WALLS)	15	06-Oct-16	26-Oct-16	51	



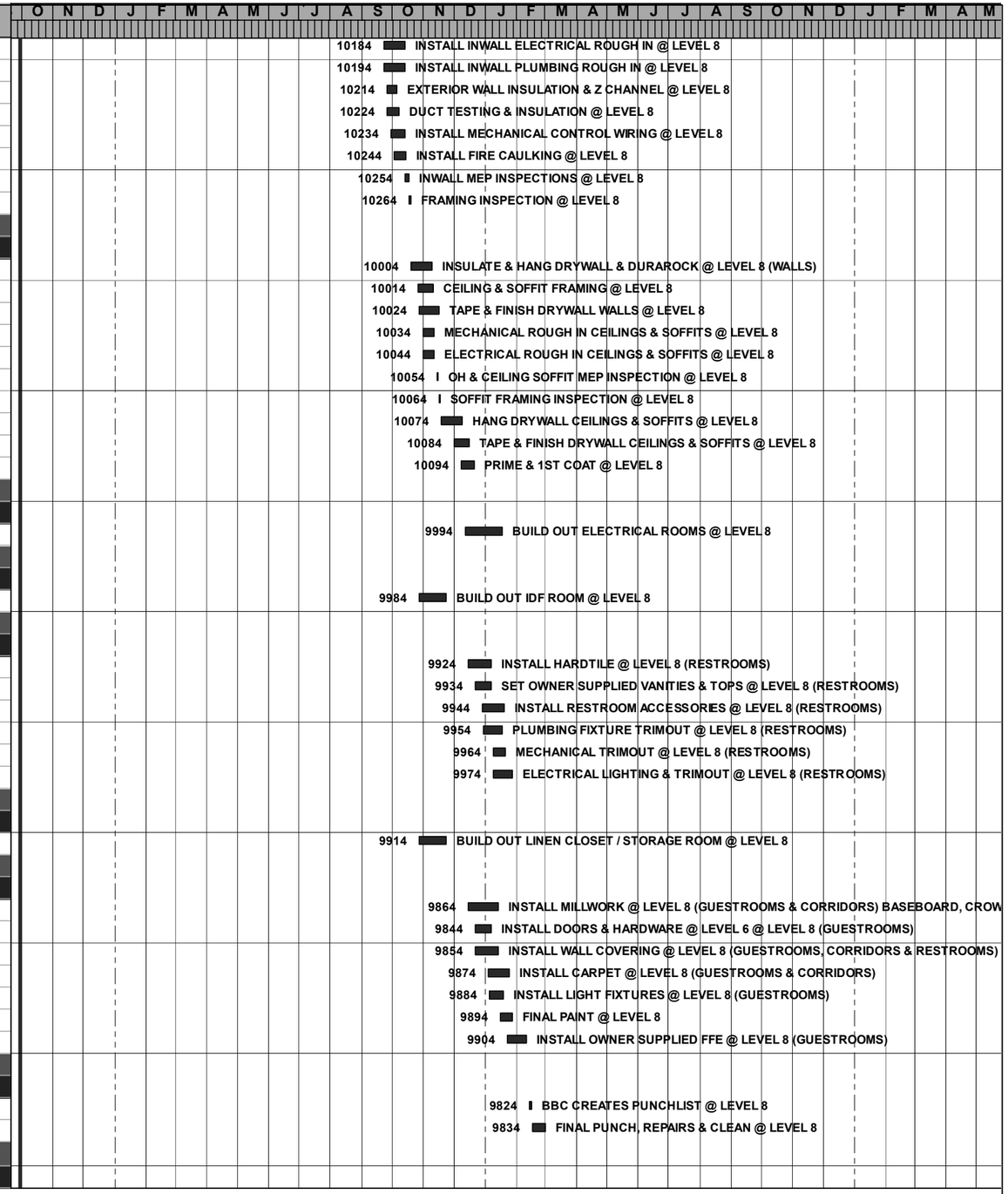
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
9564	CEILING & SOFFIT FRAMING @ LEVEL 7	12	12-Oct-16	27-Oct-16	61	
9574	TAPE & FINISH DRYWALL WALLS @ LEVEL 7	15	13-Oct-16	02-Nov-16	74	
9584	MECHANICAL ROUGH IN CEILINGS & SOFFITS @ LEVEL 7	10	17-Oct-16	28-Oct-16	61	
9594	ELECTRICAL ROUGH IN CEILINGS & SOFFITS @ LEVEL 7	10	17-Oct-16	28-Oct-16	61	
9604	OH & CEILING SOFFIT MEP INSPECTION @ LEVEL 7	2	31-Oct-16	01-Nov-16	61	
9614	SOFFIT FRAMING INSPECTION @ LEVEL 7	2	02-Nov-16	03-Nov-16	61	
9624	HANG DRYWALL CEILINGS & SOFFITS @ LEVEL 7	14	04-Nov-16	23-Nov-16	61	
9634	TAPE & FINISH DRYWALL CEILINGS & SOFFITS @ LEVEL 7	12	15-Nov-16	02-Dec-16	61	
9644	PRIME & 1ST COAT @ LEVEL 7	10	22-Nov-16	07-Dec-16	61	
ELECTRICAL CLOSETS		25	28-Nov-16	03-Jan-17	82	
		25	28-Nov-16	03-Jan-17	82	
9544	BUILD OUT ELECTRICAL ROOMS @ LEVEL 7	25	28-Nov-16	03-Jan-17	82	
IDF ROOM		20	13-Oct-16	09-Nov-16	114	
		20	13-Oct-16	09-Nov-16	114	
9534	BUILD OUT IDF ROOM @ LEVEL 7	20	13-Oct-16	09-Nov-16	114	
BATHROOMS		30	01-Dec-16	13-Jan-17	71	
		30	01-Dec-16	13-Jan-17	71	
9474	INSTALL HARDTILE @ LEVEL 7 (RESTROOMS)	15	01-Dec-16	21-Dec-16	71	
9484	SET OWNER SUPPLIED VANITIES & TOPS @ LEVEL 7 (RESTROOMS)	10	08-Dec-16	21-Dec-16	77	
9494	INSTALL RESTROOM ACCESSORIES @ LEVEL 7 (RESTROOMS)	15	14-Dec-16	05-Jan-17	77	
9504	PLUMBING FIXTURE TRIMOUT @ LEVEL 7 (RESTROOMS)	12	15-Dec-16	03-Jan-17	77	
9514	MECHANICAL TRIMOUT @ LEVEL 7 (RESTROOMS)	10	22-Dec-16	06-Jan-17	76	
9524	ELECTRICAL LIGHTING & TRIMOUT @ LEVEL 7 (RESTROOMS)	15	22-Dec-16	13-Jan-17	71	
LINEN / STORAGE CLOSET		20	13-Oct-16	09-Nov-16	114	
		20	13-Oct-16	09-Nov-16	114	
9464	BUILD OUT LINEN CLOSET / STORAGE ROOM @ LEVEL 7	20	13-Oct-16	09-Nov-16	114	
FINAL FINISHES, MILLWORK, & MEP TRIMOUT		40	01-Dec-16	27-Jan-17	61	
		40	01-Dec-16	27-Jan-17	61	
9414	INSTALL MILLWORK @ LEVEL 7 (GUESTROOMS & CORRIDORS) BASEBOARD, CROWN MO	20	01-Dec-16	29-Dec-16	64	
9394	INSTALL DOORS & HARDWARE @ LEVEL 6 @ LEVEL 7 (GUESTROOMS)	10	08-Dec-16	21-Dec-16	86	
9404	INSTALL WALL COVERING @ LEVEL 7 (GUESTROOMS, CORRIDORS & RESTROOMS)	15	08-Dec-16	29-Dec-16	61	
9424	INSTALL CARPET @ LEVEL 7 (GUESTROOMS & CORRIDORS)	15	19-Dec-16	10-Jan-17	64	
9434	INSTALL LIGHT FIXTURES @ LEVEL 7 (GUESTROOMS)	10	20-Dec-16	04-Jan-17	78	
9444	FINAL PAINT @ LEVEL 7	10	30-Dec-16	13-Jan-17	61	
9454	INSTALL OWNER SUPPLIED FFE @ LEVEL 7 (GUESTROOMS)	15	09-Jan-17	27-Jan-17	61	check with tim
PUNCH & REPAIRS		13	30-Jan-17	15-Feb-17	61	
		13	30-Jan-17	15-Feb-17	61	
9374	BBC CREATES PUNCHLIST @ LEVEL 7	3	30-Jan-17	01-Feb-17	61	
9384	FINAL PUNCH, REPAIRS & CLEAN @ LEVEL 7	10	02-Feb-17	15-Feb-17	61	
LEVEL 8		116	15-Sep-16	01-Mar-17	51	
LEVEL 8		116	15-Sep-16	01-Mar-17	51	
FRAMING & MEP ROUGH IN		25	15-Sep-16	19-Oct-16	73	
		25	15-Sep-16	19-Oct-16	73	
10104	INSTALL CHILLED WATER PIPING @ LEVEL 8	10	15-Sep-16	28-Sep-16	83	
10114	LAYOUT @ LEVEL 8	12	15-Sep-16	30-Sep-16	51	
10124	INSTALL VERTICAL WASTE / VENTING & RAIN LEADERS @ LEVEL 8	15	15-Sep-16	05-Oct-16	83	
10134	INSTALL VERTICAL HVAC PIPING & VERTICAL DUCT WORK (INCLUDEDS CHASES) @ LEVI	15	15-Sep-16	05-Oct-16	55	
10144	INSTALL OH ELECTRICAL ROUGH IN @ LEVEL 8	15	15-Sep-16	05-Oct-16	78	
10154	INSTALL HM DOOR FRAMES @ LEVEL 8	6	19-Sep-16	26-Sep-16	51	
10164	OH SPRINKLER ROUGH @ LEVEL 8	16	19-Sep-16	10-Oct-16	75	
10174	INSTALL INTERIOR WALL FRAMING @ LEVEL 8	14	21-Sep-16	10-Oct-16	51	
10204	INSTALL HORIZONTAL DUCTWORK / FCU & VAV BOXES @ LEVEL 8	15	23-Sep-16	13-Oct-16	72	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

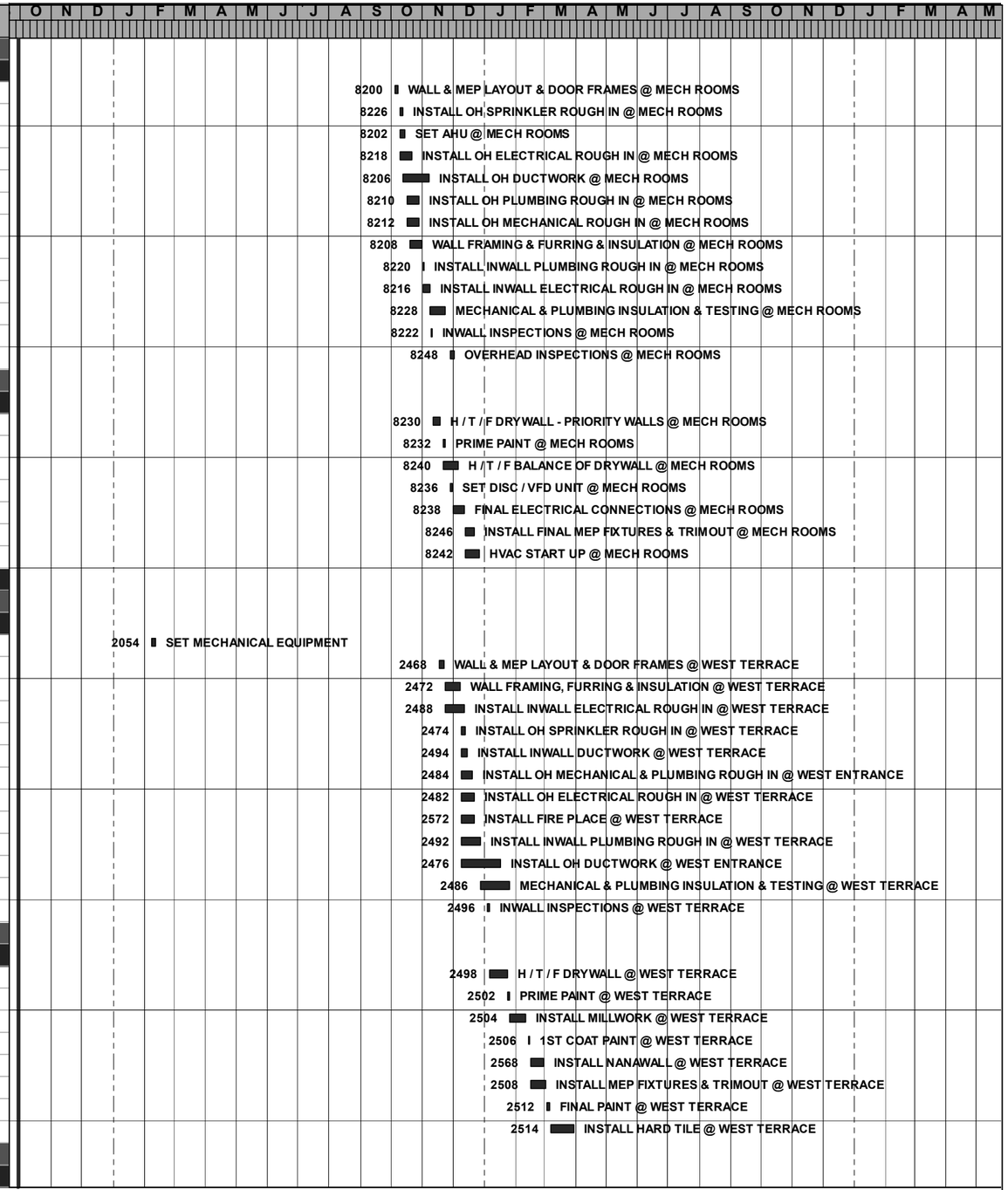
TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
10184	INSTALL INWALL ELECTRICAL ROUGH IN @ LEVEL 8	15	23-Sep-16	13-Oct-16	51	
10194	INSTALL INWALL PLUMBING ROUGH IN @ LEVEL 8	15	23-Sep-16	13-Oct-16	51	
10214	EXTERIOR WALL INSULATION & Z CHANNEL @ LEVEL 8	8	26-Sep-16	05-Oct-16	59	
10224	DUCT TESTING & INSULATION @ LEVEL 8	10	26-Sep-16	07-Oct-16	55	
10234	INSTALL MECHANICAL CONTROL WIRING @ LEVEL 8	10	30-Sep-16	13-Oct-16	51	
10244	INSTALL FIRE CAULKING @ LEVEL 8	10	03-Oct-16	14-Oct-16	52	
10254	INWALL MEP INSPECTIONS @ LEVEL 8	2	14-Oct-16	17-Oct-16	51	
10264	FRAMING INSPECTION @ LEVEL 8	2	18-Oct-16	19-Oct-16	51	
DRYWALL, HARDTILE, & PRIME PAINT		43	20-Oct-16	21-Dec-16	51	
		43	20-Oct-16	21-Dec-16	51	
10004	INSULATE & HANG DRYWALL & DURAROCK @ LEVEL 8 (WALLS)	15	20-Oct-16	09-Nov-16	51	
10014	CEILING & SOFFIT FRAMING @ LEVEL 8	12	26-Oct-16	10-Nov-16	51	
10024	TAPE & FINISH DRYWALL WALLS @ LEVEL 8	15	27-Oct-16	16-Nov-16	64	
10034	MECHANICAL ROUGH IN CEILINGS & SOFFITS @ LEVEL 8	10	31-Oct-16	11-Nov-16	51	
10044	ELECTRICAL ROUGH IN CEILINGS & SOFFITS @ LEVEL 8	10	31-Oct-16	11-Nov-16	51	
10054	OH & CEILING SOFFIT MEP INSPECTION @ LEVEL 8	2	14-Nov-16	15-Nov-16	51	
10064	SOFFIT FRAMING INSPECTION @ LEVEL 8	2	16-Nov-16	17-Nov-16	51	
10074	HANG DRYWALL CEILINGS & SOFFITS @ LEVEL 8	14	18-Nov-16	09-Dec-16	51	
10084	TAPE & FINISH DRYWALL CEILINGS & SOFFITS @ LEVEL 8	12	01-Dec-16	16-Dec-16	51	
10094	PRIME & 1ST COAT @ LEVEL 8	10	08-Dec-16	21-Dec-16	51	
ELECTRICAL CLOSETS		25	12-Dec-16	17-Jan-17	72	
		25	12-Dec-16	17-Jan-17	72	
9994	BUILD OUT ELECTRICAL ROOMS @ LEVEL 8	25	12-Dec-16	17-Jan-17	72	
IDF ROOM		20	27-Oct-16	23-Nov-16	104	
		20	27-Oct-16	23-Nov-16	104	
9984	BUILD OUT IDF ROOM @ LEVEL 8	20	27-Oct-16	23-Nov-16	104	
BATHROOMS		30	15-Dec-16	27-Jan-17	61	
		30	15-Dec-16	27-Jan-17	61	
9924	INSTALL HARDTILE @ LEVEL 8 (RESTROOMS)	15	15-Dec-16	06-Jan-17	61	
9934	SET OWNER SUPPLIED VANITIES & TOPS @ LEVEL 8 (RESTROOMS)	10	22-Dec-16	06-Jan-17	67	
9944	INSTALL RESTROOM ACCESSORIES @ LEVEL 8 (RESTROOMS)	15	29-Dec-16	19-Jan-17	67	
9954	PLUMBING FIXTURE TRIMOUT @ LEVEL 8 (RESTROOMS)	12	30-Dec-16	17-Jan-17	67	
9964	MECHANICAL TRIMOUT @ LEVEL 8 (RESTROOMS)	10	09-Jan-17	20-Jan-17	66	
9974	ELECTRICAL LIGHTING & TRIMOUT @ LEVEL 8 (RESTROOMS)	15	09-Jan-17	27-Jan-17	61	
LINEN / STORAGE CLOSET		20	27-Oct-16	23-Nov-16	104	
		20	27-Oct-16	23-Nov-16	104	
9914	BUILD OUT LINEN CLOSET / STORAGE ROOM @ LEVEL 8	20	27-Oct-16	23-Nov-16	104	
FINAL FINISHES, MILLWORK, & MEP TRIMOUT		40	15-Dec-16	10-Feb-17	51	
		40	15-Dec-16	10-Feb-17	51	
9864	INSTALL MILLWORK @ LEVEL 8 (GUESTROOMS & CORRIDORS) BASEBOARD, CROWN MO	20	15-Dec-16	13-Jan-17	54	
9844	INSTALL DOORS & HARDWARE @ LEVEL 6 @ LEVEL 8 (GUESTROOMS)	10	22-Dec-16	06-Jan-17	76	
9854	INSTALL WALL COVERING @ LEVEL 8 (GUESTROOMS, CORRIDORS & RESTROOMS)	15	22-Dec-16	13-Jan-17	51	
9874	INSTALL CARPET @ LEVEL 8 (GUESTROOMS & CORRIDORS)	15	04-Jan-17	24-Jan-17	54	
9884	INSTALL LIGHT FIXTURES @ LEVEL 8 (GUESTROOMS)	10	05-Jan-17	18-Jan-17	68	
9894	FINAL PAINT @ LEVEL 8	10	16-Jan-17	27-Jan-17	51	
9904	INSTALL OWNER SUPPLIED FFE @ LEVEL 8 (GUESTROOMS)	15	23-Jan-17	10-Feb-17	51	check with tim
PUNCH & REPAIRS		13	13-Feb-17	01-Mar-17	51	
		13	13-Feb-17	01-Mar-17	51	
9824	BBC CREATES PUNCHLIST @ LEVEL 8	3	13-Feb-17	15-Feb-17	51	
9834	FINAL PUNCH, REPAIRS & CLEAN @ LEVEL 8	10	16-Feb-17	01-Mar-17	51	
LEVEL 9		305	08-Feb-16	18-Apr-17	71	
MECHANICAL ROOMS		57	05-Oct-16	27-Dec-16	99	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

R - 16962

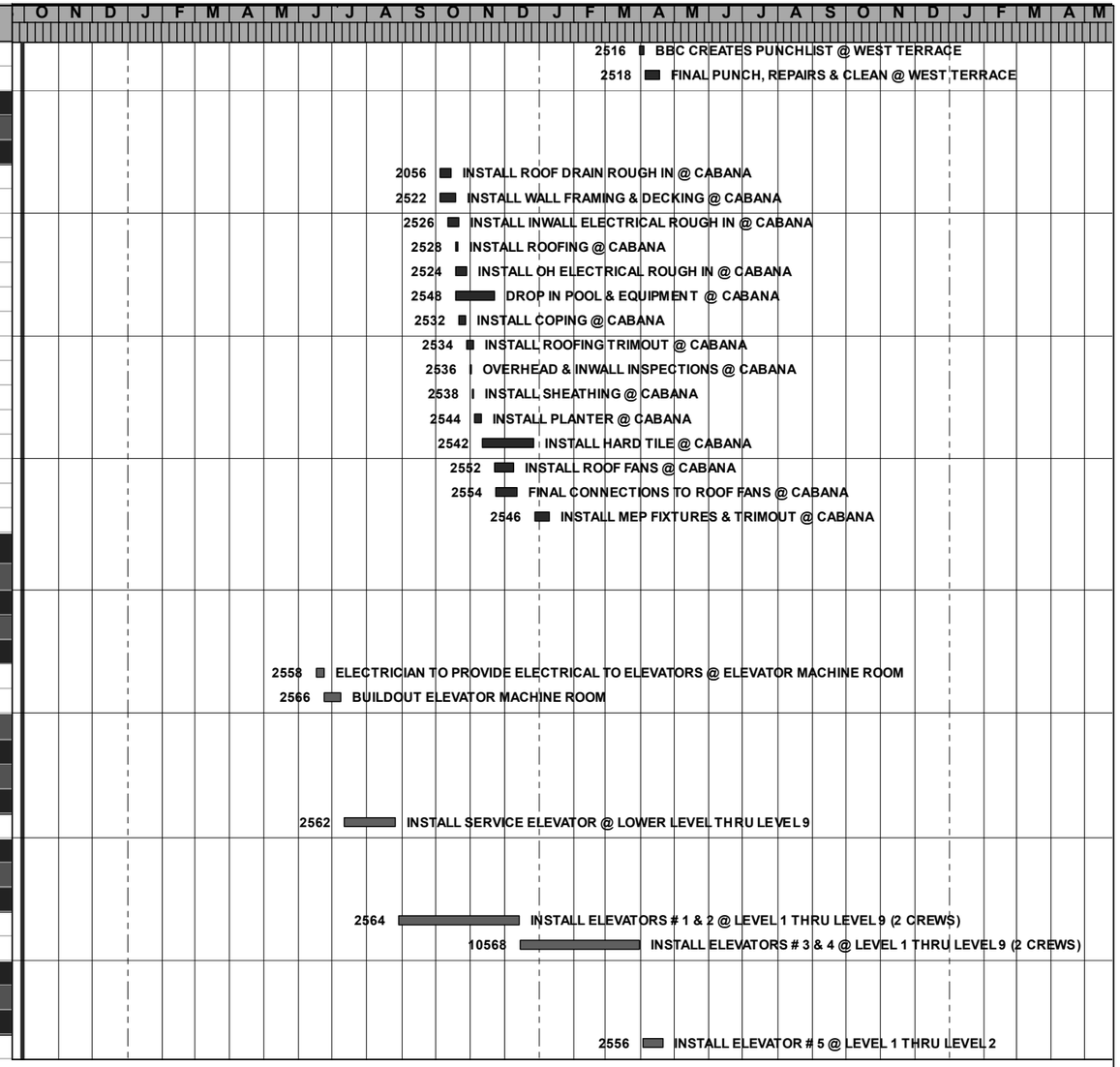
TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
	FRAMING & MEP ROUGH IN	41	05-Oct-16	02-Dec-16	107	
		41	05-Oct-16	02-Dec-16	107	
8200	WALL & MEP LAYOUT & DOOR FRAMES @ MECH ROOMS	3	05-Oct-16	07-Oct-16	80	
8226	INSTALL OH SPRINKLER ROUGH IN @ MECH ROOMS	3	10-Oct-16	12-Oct-16	80	
8202	SET AHU @ MECH ROOMS	5	10-Oct-16	14-Oct-16	113	
8218	INSTALL OH ELECTRICAL ROUGH IN @ MECH ROOMS	10	10-Oct-16	21-Oct-16	130	
8206	INSTALL OH DUCTWORK @ MECH ROOMS	18	13-Oct-16	07-Nov-16	80	
8210	INSTALL OH PLUMBING ROUGH IN @ MECH ROOMS	10	17-Oct-16	28-Oct-16	125	
8212	INSTALL OH MECHANICAL ROUGH IN @ MECH ROOMS	10	17-Oct-16	28-Oct-16	113	
8208	WALL FRAMING & FURRING & INSULATION @ MECH ROOMS	8	20-Oct-16	31-Oct-16	80	
8220	INSTALL INWALL PLUMBING ROUGH IN @ MECH ROOMS	2	01-Nov-16	02-Nov-16	84	
8216	INSTALL INWALL ELECTRICAL ROUGH IN @ MECH ROOMS	6	01-Nov-16	08-Nov-16	80	
8228	MECHANICAL & PLUMBING INSULATION & TESTING @ MECH ROOMS	12	08-Nov-16	23-Nov-16	107	
8222	INWALL INSPECTIONS @ MECH ROOMS	2	09-Nov-16	10-Nov-16	80	
8248	OVERHEAD INSPECTIONS @ MECH ROOMS	5	28-Nov-16	02-Dec-16	107	
	DRYWALL, HARDTILE, & PRIME PAINT	30	11-Nov-16	27-Dec-16	99	
		30	11-Nov-16	27-Dec-16	99	
8230	H / T / F DRYWALL - PRIORITY WALLS @ MECH ROOMS	6	11-Nov-16	18-Nov-16	80	
8232	PRIME PAINT @ MECH ROOMS	3	21-Nov-16	23-Nov-16	80	
8240	H / T / F BALANCE OF DRYWALL @ MECH ROOMS	10	21-Nov-16	06-Dec-16	105	
8236	SET DISC / VFD UNIT @ MECH ROOMS	3	28-Nov-16	30-Nov-16	80	RENAME?
8238	FINAL ELECTRICAL CONNECTIONS @ MECH ROOMS	8	01-Dec-16	12-Dec-16	80	
8246	INSTALL FINAL MEP FIXTURES & TRIMOUT @ MECH ROOMS	8	13-Dec-16	22-Dec-16	101	
8242	HVAC START UP @ MECH ROOMS	10	13-Dec-16	27-Dec-16	80	
	WEST TERRACE	305	08-Feb-16	18-Apr-17	71	
	FRAMING & MEP ROUGH IN	246	08-Feb-16	25-Jan-17	130	
		246	08-Feb-16	25-Jan-17	130	
2054	SET MECHANICAL EQUIPMENT	4	08-Feb-16	11-Feb-16	213	
2468	WALL & MEP LAYOUT & DOOR FRAMES @ WEST TERRACE	4	17-Nov-16	22-Nov-16	17	
2472	WALL FRAMING, FURRING & INSULATION @ WEST TERRACE	10	23-Nov-16	08-Dec-16	17	
2488	INSTALL INWALL ELECTRICAL ROUGH IN @ WEST TERRACE	12	23-Nov-16	12-Dec-16	31	
2474	INSTALL OH SPRINKLER ROUGH IN @ WEST TERRACE	3	09-Dec-16	13-Dec-16	159	
2494	INSTALL INWALL DUCTWORK @ WEST TERRACE	5	09-Dec-16	15-Dec-16	28	
2484	INSTALL OH MECHANICAL & PLUMBING ROUGH IN @ WEST ENTRANCE	8	09-Dec-16	20-Dec-16	21	
2482	INSTALL OH ELECTRICAL ROUGH IN @ WEST TERRACE	10	09-Dec-16	22-Dec-16	152	
2572	INSTALL FIRE PLACE @ WEST TERRACE	10	09-Dec-16	22-Dec-16	23	CONFIRM
2492	INSTALL INWALL PLUMBING ROUGH IN @ WEST TERRACE	13	09-Dec-16	28-Dec-16	20	
2476	INSTALL OH DUCTWORK @ WEST ENTRANCE	25	09-Dec-16	16-Jan-17	17	
2486	MECHANICAL & PLUMBING INSULATION & TESTING @ WEST TERRACE	20	28-Dec-16	25-Jan-17	17	
2496	INWALL INSPECTIONS @ WEST TERRACE	2	04-Jan-17	05-Jan-17	17	
	DRYWALL, HARDTILE, & PRIME PAINT	60	06-Jan-17	30-Mar-17	17	
		60	06-Jan-17	30-Mar-17	17	
2498	H / T / F DRYWALL @ WEST TERRACE	12	06-Jan-17	23-Jan-17	17	
2502	PRIME PAINT @ WEST TERRACE	2	24-Jan-17	25-Jan-17	17	
2504	INSTALL MILLWORK @ WEST TERRACE	12	26-Jan-17	10-Feb-17	17	
2506	1ST COAT PAINT @ WEST TERRACE	2	13-Feb-17	14-Feb-17	17	
2568	INSTALL NANAWALL @ WEST TERRACE	10	15-Feb-17	28-Feb-17	19	
2508	INSTALL MEP FIXTURES & TRIMOUT @ WEST TERRACE	12	15-Feb-17	02-Mar-17	17	
2512	FINAL PAINT @ WEST TERRACE	2	03-Mar-17	06-Mar-17	17	
2514	INSTALL HARD TILE @ WEST TERRACE	18	07-Mar-17	30-Mar-17	17	
	PUNCH & REPAIRS	13	31-Mar-17	18-Apr-17	17	
		13	31-Mar-17	18-Apr-17	17	



R - 16963

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

TASK ID	TASK	WORK DAYS	START DATE	FINISH DATE	Total Float	COMMENTS
2516	BBC CREATES PUNCHLIST @ WEST TERRACE	3	31-Mar-17	04-Apr-17	17	
2518	FINAL PUNCH, REPAIRS & CLEAN @ WEST TERRACE	10	05-Apr-17	18-Apr-17	17	
CABANA		65	05-Oct-16	09-Jan-17	93	
		65	05-Oct-16	09-Jan-17	93	
		65	05-Oct-16	09-Jan-17	93	
2056	INSTALL ROOF DRAIN ROUGH IN @ CABANA	8	05-Oct-16	14-Oct-16	101	
2522	INSTALL WALL FRAMING & DECKING @ CABANA	10	05-Oct-16	18-Oct-16	91	
2526	INSTALL INWALL ELECTRICAL ROUGH IN @ CABANA	8	12-Oct-16	21-Oct-16	96	
2528	INSTALL ROOFING @ CABANA	2	19-Oct-16	20-Oct-16	136	
2524	INSTALL OH ELECTRICAL ROUGH IN @ CABANA	8	19-Oct-16	28-Oct-16	91	
2548	DROP IN POOL & EQUIPMENT @ CABANA	25	19-Oct-16	22-Nov-16	121	PROCUREMENT
2532	INSTALL COPING @ CABANA	5	21-Oct-16	27-Oct-16	136	
2534	INSTALL ROOFING TRIMOUT @ CABANA	5	28-Oct-16	03-Nov-16	136	
2536	OVERHEAD & INWALL INSPECTIONS @ CABANA	2	31-Oct-16	01-Nov-16	91	
2538	INSTALL SHEATHING @ CABANA	2	02-Nov-16	03-Nov-16	91	
2544	INSTALL PLANTER @ CABANA	5	04-Nov-16	10-Nov-16	91	
2542	INSTALL HARD TILE @ CABANA	30	11-Nov-16	27-Dec-16	91	
2552	INSTALL ROOF FANS @ CABANA	12	22-Nov-16	09-Dec-16	80	PRED
2554	FINAL CONNECTIONS TO ROOF FANS @ CABANA	12	23-Nov-16	12-Dec-16	80	
2546	INSTALL MEP FIXTURES & TRIMOUT @ CABANA	8	28-Dec-16	09-Jan-17	91	
VERTICAL TRANSPORTATION		215	17-Jun-16	21-Apr-17	15	
ELEVATOR MACHINE ROOM		15	17-Jun-16	08-Jul-16	15	
		15	17-Jun-16	08-Jul-16	15	
		15	17-Jun-16	08-Jul-16	15	
		15	17-Jun-16	08-Jul-16	15	
2558	ELECTRICIAN TO PROVIDE ELECTRICAL TO ELEVATORS @ ELEVATOR MACHINE ROOM	5	17-Jun-16	23-Jun-16	15	
2566	BUILDOUT ELEVATOR MACHINE ROOM	10	24-Jun-16	08-Jul-16	15	
		200	11-Jul-16	21-Apr-17	15	
ELEVATOR # 6 (SERVICE)		35	11-Jul-16	26-Aug-16	15	
		35	11-Jul-16	26-Aug-16	15	
		35	11-Jul-16	26-Aug-16	15	
2562	INSTALL SERVICE ELEVATOR @ LOWER LEVEL THRU LEVEL 9	35	11-Jul-16	26-Aug-16	15	
ELEVATORS # 1 - 4		150	29-Aug-16	31-Mar-17	15	
		150	29-Aug-16	31-Mar-17	15	
		150	29-Aug-16	31-Mar-17	15	
2564	INSTALL ELEVATORS # 1 & 2 @ LEVEL 1 THRU LEVEL 9 (2 CREWS)	75	29-Aug-16	14-Dec-16	15	
10568	INSTALL ELEVATORS # 3 & 4 @ LEVEL 1 THRU LEVEL 9 (2 CREWS)	75	15-Dec-16	31-Mar-17	15	
ELEVATOR # 5		15	03-Apr-17	21-Apr-17	15	
		15	03-Apr-17	21-Apr-17	15	
		15	03-Apr-17	21-Apr-17	15	
2556	INSTALL ELEVATOR # 5 @ LEVEL 1 THRU LEVEL 2	15	03-Apr-17	21-Apr-17	15	



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

DEFENDANT LIBRARY ASSOCIATES, LLC'S

TRIAL EXHIBIT #94

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

PALMETTO SCHEDULING, L.L.C.

September 13, 2017

94

Mr. Walter Henry Bundy Jr.
1516 Old Trolley Road
Summerville, South Carolina 29485-8209

Ref: Hotel Bennett
Balfour Beatty Schedule Audit
Attorney-Client Privileged Information Prepared in Anticipation of Litigation

The following audit will review the schedule structure and progress accuracy of the Balfour Beatty 4Aug17 Hotel Bennett update schedule.

Project Overview

Hotel Bennett is a nine-story luxury hotel featuring 179 guestrooms. It is located on Marion Square in Charleston, SC. It features a signature restaurant, bar and roof top pool with cabanas and bar. The first and second levels also feature an array of meeting rooms, retail spaces and spa. The basement level provides parking.

Executive Summary of Findings

The first exercise of the schedule audit reviews the accuracy of the short term forecasted progress, gives observed manpower totals for each area and reviews the project schedule as to whether or not it adheres to the specification requirements and to acceptable scheduling practices. The second portion of the audit revises inaccuracies found in the Balfour Beatty schedule to document what if any variances would occur to the major milestones.

The main functions of a CPM schedule are coordination/communication, documentation and forecasting. As Balfour Beatty deleted all completed work from the schedule prior to submitting their latest update schedule for review, it is not possible to ascertain the accuracy of the documented actual dates. However, it is possible to glean the schedule's ability to forecast and coordinate the remaining work. Unfortunately, the Balfour Beatty schedule has such significant fatal flaws than it is neither an effective forecasting or coordination tool.

Numerous critical activities either do not have successors or have been assigned inappropriate successors resulting in the schedule's having no ability to accurately ascertain the affect that finishing or not finishing an activity has upon the overall project. Very few of the Owner furnished equipment dates shown in the schedule are accurate. Some are months off form dates Balfour Beatty has discussed and coordinated with the Owner through correspondence outside of the schedule.

Numerous sitewalks were completed by Palmetto Scheduling to observe progress and manpower levels. The 28Aug17 sitewalk has been used for the purpose of this report. The sitewalk compares dates forecasted by Balfour Beatty's 4Aug17 schedule update to actual

1942 Sam Rittenburg, Suite E
Charleston, South Carolina 29407

E-MAIL gquery@palmettoscheduling.com
TEL 843.377.0906 FAX 843.377.0907

conditions on 28Aug17, only three weeks later. As is shown in the progress review section, the Balfour Beatty schedule is ineffective in even forecasting the very shortest of terms. The lack of crew flow logic in the schedule also compounds the inaccurate forecasting by unrealistically stacking trades and allowing finishes to occur in the schedule much sooner than is realistic.

In the second portion of the audit exercise adjustments were made to the schedule to match progress observations, manpower totals and "owner furnished" delivery dates provided by the Owner. Further adjustments were made to activity calendars and schedule logic ties to bring Balfour Beatty's schedule in line with acceptable scheduling practices. All changes made to the schedule are well documented.

The resulting changes made to the Balfour Beatty 4Aug17 Update schedule result in large variance to each and every major completion milestone. Most notable of which is the overall Hotel Opening (Activity 1050) now reflects a 29Jun18 completion resulting in a loss of fifty-seven calendar days from the previous completion date of 3May18. This is not to say that a plan and subsequent schedule cannot be developed to achieve a 3May18 completion, it is merely a reflection of the inaccuracy of Balfour Beatty's project schedule.

Below are the major milestones from Balfour Beatty's 4 Aug17 update schedule and on the following page are the revised milestones.

Project Milestones as per GC's 4Aug17 Update Schedule

Activity ID	Activity Name	Finish	Total Float
1020	FINAL BUILDING DRY-IN - (NO TEMPORARY WINDOWS)	7-Aug-17	-96
1094	START RESTROOM VANITIES @ LEVEL 3 (OWNER)	17-Aug-17	182
1025	BASEMENT COMPLETE	20-Sep-17	158
24708	IDF ROOMS CLOSED TO CONSTRUCTION & READY FOR OWNER	30-Oct-17	-55
10784	PBX PHONE, TV & INTERNET SERVERS SYSTEM INSTALLED & READY	30-Oct-17	-55
1088	BBC START PUNCHLIST @ LVL 3	15-Nov-17	-61
10792	CORRIDORS, BOH, STORE ROOMS PUBLIC BATHROOMS COMPLETE	16-Nov-17	-98
10782	BALLROOMS READY FOR TURNOVER	27-Dec-17	-89
1096	INTERIOR SIGNAGE COMPLETE	22-Jan-18	-144
10800	HOTEL LIFE SAFETY INSPECTION COMPLETE	22-Jan-18	-112
10794	ELECTRONIC LOCK SYSTEM COMPLETE	26-Jan-18	-111
10846	KITCHEN TESTING & BURN IN	29-Jan-18	-146
1052	BUILDING FINAL INSPECTION	23-Feb-18	-166
10814	ALL POOL & SPA TESTING COMPLETE	23-Feb-18	-131
1082	GUEST ROOMS READY FOR TURNOVER	8-Mar-18	-140
10856	CURTAINS AVAILABLE FOR INSTALL	8-Mar-18	-140
10788	LAUNDRY ROOM TCO	15-Mar-18	-145
10850	LARGE OFFICES TCO	15-Mar-18	-145
10852	1ST FLOOR DINING AREA READY FOR FFE STAGING	15-Mar-18	-145
10796	OWNER FFE COMPLETE	15-Mar-18	-145
10854	SPA READY FOR TESTING	15-Mar-18	-145
1106	STOCKING PERMIT RECEIVED	15-Mar-18	35
1030	SUBSTANTIAL COMPLETION	15-Mar-18	-180
1050	HOTEL OPENING	3-May-18	-180

1942 Sam Rittenburg, Suite E
Charleston, South Carolina 29407

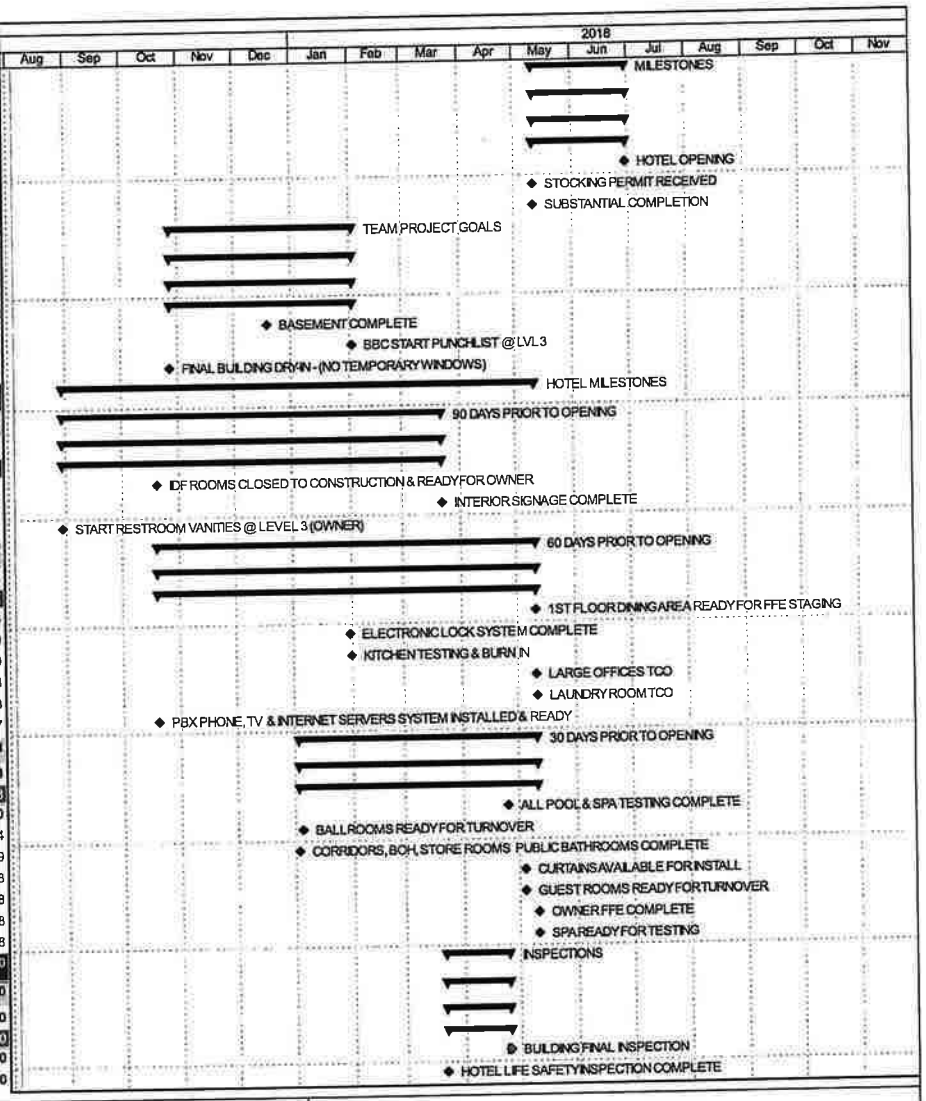
E-MAIL gquery@palmettoscheduling.com
TEL 843.377.0906 FAX 843.377.0907

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

R-16968

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Variance - BL1 Finish Date
MILESTONES		35	35	10-May-18	29-Jun-18	-38
		35	35	10-May-18	29-Jun-18	-38
		35	35	10-May-18	29-Jun-18	-38
		35	35	10-May-18	29-Jun-18	-38
1050	HOTEL OPENING	0	0		29-Jun-18*	-38
1106	STOCKING PERMIT RECEIVED	0	0		10-May-18	-38
1030	SUBSTANTIAL COMPLETION	0	0		10-May-18*	-38
TEAM PROJECT GOALS		64	64	27-Oct-17	02-Feb-18	-52
		64	64	27-Oct-17	02-Feb-18	-52
		64	64	27-Oct-17	02-Feb-18	-52
		64	64	27-Oct-17	02-Feb-18	-52
1025	BASEMENT COMPLETE	0	0		18-Dec-17	-61
1088	BBC START PUNCHLIST @ LVL3	0	0	02-Feb-18		-52
1020	FINAL BUILDING DRY-IN - (NO TEMPORARY WINDOWS)	0	0		27-Oct-17*	-58
HOTEL MILESTONES		176	176	30-Aug-17	10-May-18	-38
90 DAYS PRIOR TO OPENING		140	140	30-Aug-17	21-Mar-18	-40
		140	140	30-Aug-17	21-Mar-18	-40
		140	140	30-Aug-17	21-Mar-18	-40
24708	IDF ROOMS CLOSED TO CONSTRUCTION & READY FOR OWNER	0	0		19-Oct-17	7
1096	INTERIOR SIGNAGE COMPLETE	0	0		21-Mar-18	-40
1094	START RESTROOM VANITIES @ LEVEL 3 (OWNER)	0	0	30-Aug-17		-9
60 DAYS PRIOR TO OPENING		140	140	19-Oct-17	10-May-18	-38
		140	140	19-Oct-17	10-May-18	-38
		140	140	19-Oct-17	10-May-18	-38
10852	1ST FLOOR DINING AREA READY FOR FFE STAGING	0	0		10-May-18	-38
10794	ELECTRONIC LOCK SYSTEM COMPLETE	0	0		30-Jan-18	0
10846	KITCHEN TESTING & BURN IN	0	0		31-Jan-18	0
10850	LARGE OFFICES TCO	0	0		10-May-18	-38
10788	LAUNDRY ROOM TCO	0	0		10-May-18	-38
10784	PBX PHONE, TV & INTERNET SERVERS SYSTEM INSTALLED & READY	0	0		19-Oct-17	7
30 DAYS PRIOR TO OPENING		91	91	02-Jan-18	10-May-18	-38
		91	91	02-Jan-18	10-May-18	-38
		91	91	02-Jan-18	10-May-18	-38
10814	ALL POOL & SPA TESTING COMPLETE	0	0		24-Apr-18	-40
10782	BALLROOMS READY FOR TURNOVER	0	0		04-Jan-18	-4
10792	CORRIDORS, BOH, STORE ROOMS PUBLIC BATHROOMS COMPLETE	0	0		02-Jan-18	-29
10856	CURTAINS AVAILABLE FOR INSTALL	0	0		03-May-18	-36
1082	GUEST ROOMS READY FOR TURNOVER	0	0		03-May-18	-38
10796	OWNER FFE COMPLETE	0	0		10-May-18	-38
10854	SPA READY FOR TESTING	0	0		10-May-18	-38
INSPECTIONS		24	24	21-Mar-18	24-Apr-18	-40
		24	24	21-Mar-18	24-Apr-18	-40
		24	24	21-Mar-18	24-Apr-18	-40
		24	24	21-Mar-18	24-Apr-18	-40
1052	BUILDING FINAL INSPECTION	2	2	23-Apr-18	24-Apr-18	-40
10800	HOTEL LIFE SAFETY INSPECTION COMPLETE	0	0		21-Mar-18	-40



Remaining Level of Effort | Actual Work | Critical Remaining Work
Actual Level of Effort | Remaining Work | Milestone

Hotel Bennett 4Aug17 Update - Revised by Palmetto Scheduling

Data Date 04-Aug-17
page 1 of 1

DRAFT

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

Schedule Overview

Activities.....787
Not Started.....723
In Progress.....64
Completed.....0
Relationships.....1464
Activities with Constraint.....96

The project is currently showing -180 days of float for the project completion milestone 1050 Hotel Opening Milestone.

Constraints

An exorbitant amount of activities have assigned constraints dictating logic. As a practice, this is a poor scheduling technique, but since Balfour Beatty sent the schedule with only activities in progress and not completed in the xer file they submitted for this review, it is understandable why the large amount of constraints are present. While receiving only the incomplete activities does not allow for a full review of the schedule's logic ties, since the purpose of this review exercise is to evaluate the remaining work and project a reasonable completion the submitted schedule will be adequate.

Activities without predecessors.....89

This would be completely unacceptable except for the aforementioned way Balfour Beatty submitted the schedule's xer file with only activities in progress and not completed.

Activities without successors.....20

Only Activity:1050 - HOTEL OPENING activity should have no successor. Having this many opened ended activities reduces the efficiency of the schedule's ability to project cause and effect scenarios and limits the schedules ability to project completion dates. The activities listed have no successors.

Activity:1025 BASEMENT COMPLETE
Activity:1050 HOTEL OPENING
Activity:1055 ALL MOLD ISSUE DRYWALL REMOVED AND PATHCHED
Activity:1094 START RESTROOM VANITIES @ LEVEL 3 (OWNER)
Activity:1106 STOCKING PERMIT RECEIVED
Activity:2104 INSTALL ELECTRICAL FIXTURES & TRIMOUT @ SPA & RETAIL
Activity:2386 INSTALL TOILET ACCESSORIES @ 2ND FLOOR SPA (BATHROOMS)
Activity:2402 PRIME PAINT CEILINGS @ 2ND FLOOR SPA
Activity:24707 RELEASE, FAB & DELIVER TYPE LW2 FIXTURES
Activity:24960 INSTALL SHUTTERS & ORNAMENTAL WORKS @ SOUTHWEST

1942 Sam Rittenburg, Suite E
Charleston, South Carolina 29407

E-MAIL gquery@palmettoscheduling.com
TEL 843.377.0906 FAX 843.377.0907

ELEVATION
Activity:2572 INSTALL FIRE PLACE @ WEST TERRACE
Activity:31587 INSTALL BALANCE OF STEEL FOR MARQUIS @ SOUTHWEST ELEVATION
Activity:337223 INSTALL TEMP DOORS & HARDWARE @ LEVEL 4 (GUESTROOMS)
Activity:337224 INSTALL OWNER FFE BOOK CASES @ LEVEL 4 (GUEST ROOMS)
Activity:337278 INSTALL OWNER FFE BOOK CASES @ LEVEL 6 (GUEST ROOMS)
Activity: 337305 INSTALL OWNER FFE BOOK CASES @ LEVEL 7 (GUEST ROOMS)
Activity: 3420 INSTALL OWNER FFE BOOK CASES @ LEVEL 3 (GUEST ROOMS)
Activity: 4236 PRIME PAINT WALLS @ CAMELLIAS LOUNGE
Activity:4346 INSTALL ONS SCAFFOLDING UP TO 2ND FLOOR 2 NORTH ELEVATION
Activity: 8238 FINAL ELECTRICAL CONNECTIONS @ EAST TERRACE

Schedule Calendars

There is no calendar for inclement weather. As per the specifications, the average rainfall totals listed below should have been incorporated into the schedule. Although Balfour Beatty could argue that time for inclement weather has been incorporated into the exterior activities, this is not the acceptable scheduling practice to account to anticipated inclement weather. Calendars with the anticipated weather days below as "Non-work" days should be assigned to all work activities that have the potential to be effected by adverse weather.

Projected mean number of days with precipitation greater than or equal to .01" for Charleston, South Carolina

January	6.0 Days	May	6.3 Days	September	8.1 Days
February	6.4 Days	June	7.4 Days	October	5.2 Days
March	6.4 Days	July	9.7 Days	November	3.9 Days
April	5.8 Days	August	9.0 Days	December	5.9 Days

Calendars used in the Schedule:

7 Day Week

- Solely used as calendar for the curing of the stucco.

Marion Square Hotel 5 Day Workweek

Assigned to the majority of activities. Holidays are included, but only

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

through the end of 2017, so at least one day will be lost for New Year's Day 2018.

Marion Square 6 Day

Assigned to the following activities listed below. Holidays are included, but no New Year's Day, 2018. Also, unrealistic Saturday work is included, such as the day before Christmas eve and the Saturday after Christmas.

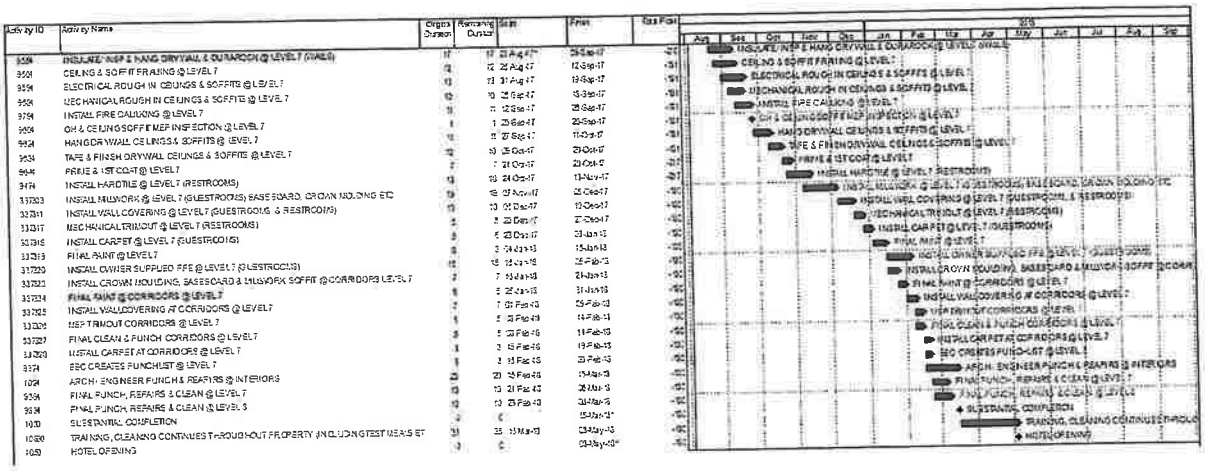
Activity ID	Activity Name	riginal Durati	aining Dura	Start	Finish	Total Float
8634	BUILD OUT IDF ROOM @ LEVEL 5	11-Apr-00	19	27-Apr-17 A	25-Aug-17	-87
8564	BUILD OUT LINEN CLOSET / STORAGE ROOM @ LEVEL 5	11-Apr-00	19	27-Apr-17 A	25-Aug-17	-87
7964	INSTALL HARDTILE @ LEVEL 3 (RESTROOMS)	18-Feb-00	10	19-Jun-17 A	15-Aug-17	-159
24948	SET PRECAST QUOINS @ SOUTHWEST ELEVATION	8-Jan-00	4	31-Jul-17 A	8-Aug-17	-61
36882	WATERPROOFING @ NORTHWEST ELEVATION (TROWEL)	2-Jan-00	2	4-Aug-17	5-Aug-17	-57
8124	INSTALL HARDTILE @ LEVEL 4 (RESTROOMS)	18-Jan-00	18	4-Aug-17	24-Aug-17	-180
25062	CAULKING @ NORTHEAST ELEVATION	3-Jan-00	3	8-Aug-17	10-Aug-17	-35
2338	PRIME PAINT & 1ST COAT @ DINING & PRIVATE DINING	4-Jan-00	4	08-Aug-17*	11-Aug-17	-86
2444	TAPE & FINISH DRYWALL WALLS & CEILINGS @ PREFUNCTION & BALL ROOM	23-Jan-00	23	12-Aug-17	8-Sep-17	-143
2348	FINAL POINT UP @ DINING & PRIVATE DINING	2-Jan-00	2	12-Aug-17	14-Aug-17	-86
25050	REMOVE PREMIER SCAFFOLDING @ NORTHWEST ELEVATION	3-Jan-00	3	12-Aug-17	15-Aug-17	-46
29867	INSTALL ROOF FRAMING @ EAST ELEVATION	2-Jan-00	2	14-Aug-17*	15-Aug-17	-32
8574	INSTALL HARDTILE @ LEVEL 5 (RESTROOMS)	18-Jan-00	18	15-Aug-17	5-Sep-17	-180
25214	FLOAT & REPAIR CMU WALL @ NORTHEAST ELEVATION	2-Jan-00	2	18-Aug-17	19-Aug-17	-66
29871	INSTALL FLOOR TILE @ SOUTHEAST ELEVATION	6-Jan-00	6	19-Aug-17	25-Aug-17	-32
25216	WATERPROOFING @ NORTHEAST ELEVATION	3-Jan-00	3	21-Aug-17	23-Aug-17	-66
9554	INSULATE/ INSP & HANG DRYWALL & DURAROCK @ LEVEL 7 (WALLS)	17-Jan-00	17	21-Aug-17*	9-Sep-17	-218
39575	INSTALL MERECRETE & HARD TILE @ POOL DECK	14-Feb-00	45	21-Aug-17*	12-Oct-17	-204
36900	INSTALL FLOOR TILE @ NORTHWEST ELEVATION	8-Jan-00	8	24-Aug-17	1-Sep-17	-44
36906	INSTALL FLOOR TILE @ NORTHWEST ELEVATION	7-Jan-00	7	25-Aug-17	1-Sep-17	-37
2366	INSTALL HARD TILE @ CAMELLIAS LOUNGE (SI-51)	24-Jan-00	24	29-Aug-17	26-Sep-17	-119
2172	TILE LAYOUT @ LOBBY, ROTUNDA & RETAIL	3-Jan-00	3	30-Aug-17	1-Sep-17	-120
24846	INSTALL FLASHING, MERKERETE, WATER TEST & TILE AND TILE PROTECTION @ LEVELS 3 THRU 9 CENTER COURTYARD	8-Jan-00	8	30-Aug-17	8-Sep-17	-48
34701	INSTALL FLOOR TILE @ SOUTHWEST ELEVATION	6-Jan-00	6	30-Aug-17	6-Sep-17	-54
3336	INSTALL INWALL MEP ROUGH IN & INSPECT @ BATHROOMS	4	4	7-Sep-17	11-Sep-17	-127
2110	INSTALL HARD TILE & BASE @ SPA & RETAIL	14	14	7-Sep-17	22-Sep-17	-128
9024	INSTALL HARDTILE @ LEVEL 6 (RESTROOMS)	18	18	8-Sep-17	28-Sep-17	-188
9025	INSTALL HARDTILE @ LEVEL 6 CONCIERGE)	8	8	8-Sep-17	16-Sep-17	-96
36880	INSTALL FLOOR TILE @ WEST ELEVATION	10	10	13-Sep-17	23-Sep-17	-62
31556	DECKING & TPO ROOFING & MEP TIE IN'S @ SOUTHWEST ELEVATION	5	5	16-Sep-17	21-Sep-17	-61
2542	INSTALL HARD TILE @ CABANA'S	18	18	22-Sep-17	12-Oct-17	-132
2498	H / T / F DRYWALL - WALLS @ WEST TERRACE	12	12	23-Sep-17	6-Oct-17	-178
2382	INSTALL PLUMBING FIXTURES @ 2ND FLOOR SPA (BATHROOMS)	4	4	3-Oct-17	6-Oct-17	169
2503	INSTALL HARDTILE @ EAST TERRACE (MENS RESTROOM)	6	6	7-Oct-17	13-Oct-17	-178
2505	INSTALL HARDTILE @ EAST TERRACE (WOMENS RESTROOM)	6	6	14-Oct-17	20-Oct-17	-164
2188	INSTALL FINISH FLOORING @ LOBBY, ROTUNDA & RETAIL	45	45	20-Oct-17	13-Dec-17	-162
9644	PRIME & 1ST COAT @ LEVEL 7	7	7	21-Oct-17	28-Oct-17	-217
9474	INSTALL HARDTILE @ LEVEL 7 (RESTROOMS)	18	18	24-Oct-17	13-Nov-17	-217
9924	INSTALL HARDTILE @ LEVEL 8 (RESTROOMS)	18	18	26-Oct-17	15-Nov-17	-202
A1018	PUNCH & REPAIRS @ SOUTHWEST ELEVATION	5	5	27-Oct-17	1-Nov-17	-86
29665	INSTALL FLOOR TILE @ EAST ELEVATION	10	10	31-Oct-17	10-Nov-17	-97
2458	INSTALL HARD TILE FLOORING @ PREFUNCTION & BALL ROOM	10	10	25-Nov-17	6-Dec-17	-143
8240	INSTALL HARDTILE @ EAST TERRACE (MENS)	5	5	6-Dec-17	11-Dec-17	-185
2196	INSTALL MONUMENTAL STAIR TILE @ LOBBY, ROTUNDA & RETAIL	10	10	8-Dec-17	19-Dec-17	-162
8241	INSTALL HARDTILE @ EAST TERRACE (WOMENS)	5	5	12-Dec-17	16-Dec-17	-185
39563	INSTALL HARDTILE @ ELEVATOR LOBBY LVL 1	8	8	16-Dec-17	26-Dec-17	-190
39561	INSTALL HARDTILE @ ELEVATOR LOBBY LVL 2	8	8	27-Dec-17	4-Jan-18	-198

1942 Sam Rittenburg, Suite E
Charleston, South Carolina 29407

E-MAIL gquery@palmettoscheduling.com
TEL 843.377.0906 FAX 843.377.0907

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

Balfour Beatty Schedule's Longest Path



The longest path is driven by the hanging of the drywall on the seventh-floor walls. This drives the ceiling and soffit framing and subsequent rough-in. Once the overhead inspection is complete on 26Sep17, the ceilings can be sheet rocked, taped and finished and painted. Paint drives the tile and millwork installation. Once millwork is complete, wall covering proceeds followed by mechanical trim-out, carpet and final paint. Final paint drives owner supplied FF&E as well as crown molding and baseboard, which drives final punch activities. The project is currently showing -180 days of float for the project completion milestone 1050 Hotel Opening Milestone.

Owner Coordination

Critical Milestone listed in the schedule are inaccurate and have not been adequately coordinated with the Owner. Below are the schedule's Owner supplied delivery dates. Notes in red were comments added by Debra Robinson – ADM on 8-30-17

RESTROOM VANITIES @ LEVEL 3 (OWNER) – 17Aug17

Yes – on 8-17-17 schedule this is what is shown - these items are from Berman Falk and are all in the warehouse

LIGHTING FIXTURES (OWNER) 9TH FLOOR ONLY – 13Nov17

Don't see this on their schedule – and the short version they sent on 8-18-17 only goes through the 8th floor for owner lighting – and shows 8th floor on 12-1. If that is rooftop area – we have lighting from Spike lighting – DC-42 & DC-42 which are due in around Nov 20th

LIGHTING FIXTURES (OWNER) 1ST FLOOR ONLY – 13Nov17

On the short schedule they sent on 8-17 - they listed PD/CAM lighting on 10-18 and Lobby Rotunda 10-30

On the larger schedule dated 8-17-17 it shows Dining and Private Dining lighting 11-14 – but I see no other lighting listed for the other areas of the public area on the large schedule. We have DW-27 Dining Room, DW-11, DW-12, DC-10, DC-28, DC-30 all from Spike lighting for 1st level lighting – due in around Nov 20th We also have DC-6 & DC-

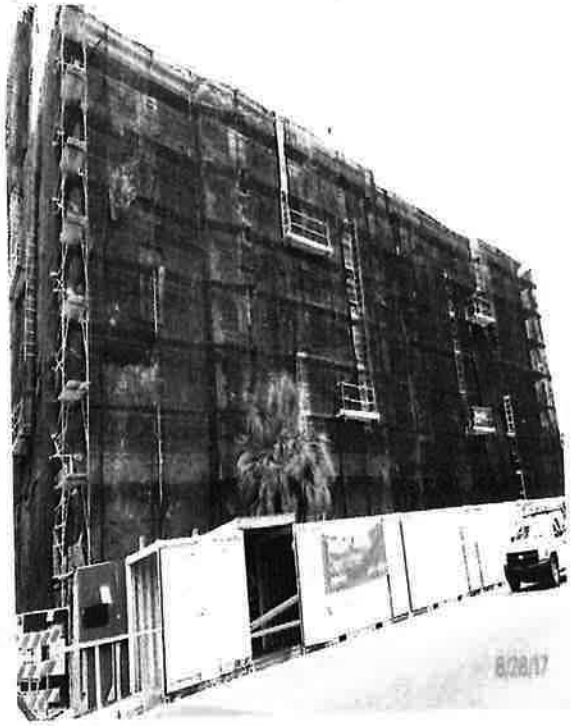
1942 Sam Rittenburg, Suite E
Charleston, South Carolina 29407

E-MAIL gquery@palmettoscheduling.com
TEL 843.377.0906 FAX 843.377.0907

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108





ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

B. Hotel Bennet Schedule Progress Review

2. Progress shown on 4Aug17 Schedule Update vs. Actual site conditions as of 28Aug17

a. Exterior Envelope

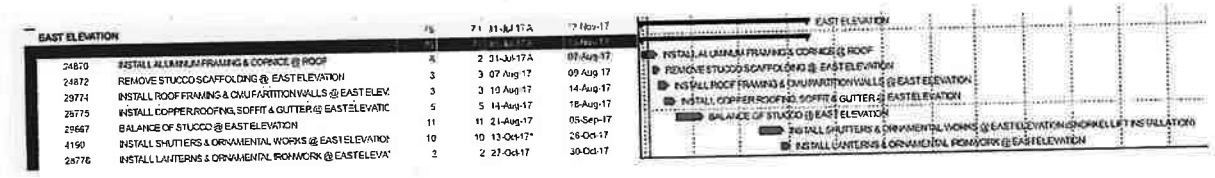
i. East Elevation

1. Near term progress shown on 4Aug17 schedule

a. Installation of Aluminum Framing & Cornice at Roof Started 31JUL17 to Complete 07AUG17.
b. Remove Stucco Scaffolding at East Elevation to Start 07AUG17 and Complete on 09AUG17.
c. Install Roof Framing & CMU Partition Walls at East Elevation to Start 10AUG17 and Complete 14AUG17.
d. Install Copper Roofing, Soffit & Gutter at East Elevation to Start 14AUG17 and Complete 18AUG17.
e. Balance of Stucco at East Elevation to Start 21AUG17 and Complete 05SEP17.

2. Actual site conditions as of 28Aug17

a. Installation of Aluminum Framing & Cornice at Roof - Completed
b. Remove Stucco Scaffolding at East - Completed
c. Install Roof Framing & CMU Partition Walls at East - Completed
d. Install Copper Roofing, Soffit & Gutter at East Elevation - Completed
e. Balance of Stucco at East Elevation - Completed



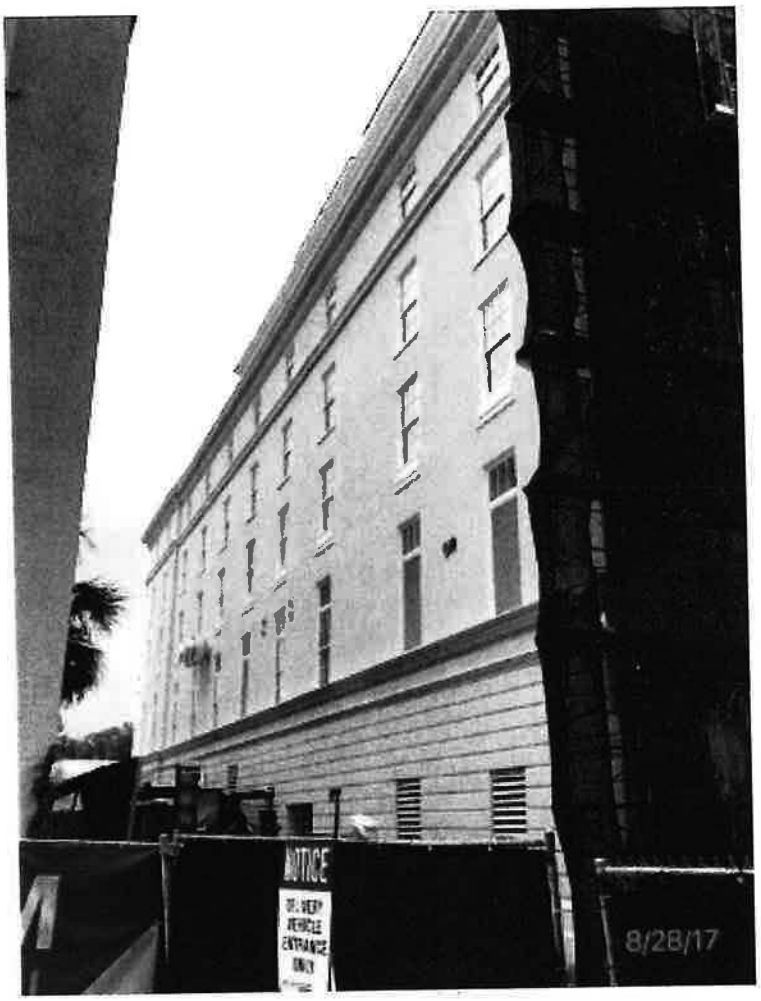
3. Resources Observed in Area:

a. No workers observed in area during walk-thru (**Rain)

4. Current Site Condition Pictures:

Please see next page (East Elevation)

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

C. Hotel Bennet Schedule Progress Review

3. Progress shown on 4Aug17 Schedule Update vs. Actual site conditions as of 28Aug17

a. Exterior Envelope

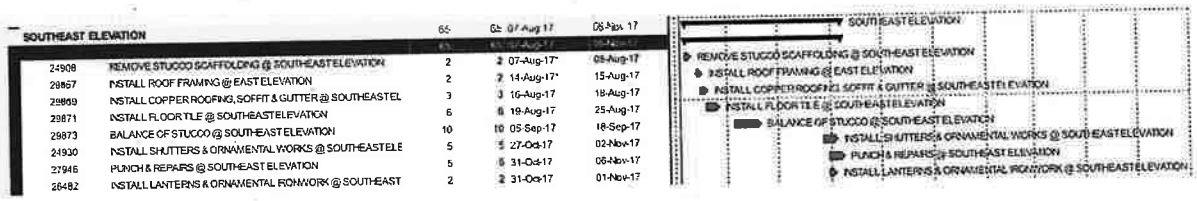
i. South East Elevation

1. Near term progress shown on 4Aug17 schedule

a. Remove Stucco Scaffolding at South East Elevation to Start 07AUG17 to Complete 08AUG17.
b. Install Roof Framing at South East Elevation to Start 14AUG17 and Complete on 15AUG17.
c. Install Copper Roofing, Soffit & Gutter at South East Elevation to Start 16AUG17 and Complete 18AUG17.
d. Install Floor Tile at South East Elevation to Start 19AUG17 and Complete 25AUG17.
e. Balance of Stucco at South East Elevation to Start 05SEP17 and Complete 18SEP17.

2. Actual site conditions as of 28Aug17

a. Remove Stucco Scaffolding at South East Elevation - Complete
b. Install Roof Framing at South East Elevation - Complete
c. Install Copper Roofing, Soffit & Gutter at South East Elevation - Complete
d. Install Floor Tile at South East Elevation – Not Started
e. Balance of Stucco at South East Elevation - Complete



SOUTHEAST ELEVATION		65	07-Aug-17	08-Nov-17
24908	REMOVE STUCCO SCAFFOLDING @ SOUTHEAST ELEVATION	2	07-Aug-17*	08-Aug-17
29867	INSTALL ROOF FRAMING @ EAST ELEVATION	2	14-Aug-17*	15-Aug-17
29869	INSTALL COPPER ROOFING, SOFFIT & GUTTER @ SOUTHEAST EL	3	16-Aug-17	18-Aug-17
29871	INSTALL FLOOR TILE @ SOUTHEAST ELEVATION	6	19-Aug-17	25-Aug-17
29873	BALANCE OF STUCCO @ SOUTHEAST ELEVATION	10	05-Sep-17	18-Sep-17
24930	INSTALL SHUTTERS & ORNAMENTAL WORKS @ SOUTHEAST ELE	5	27-Oct-17	02-Nov-17
27946	PUNCH & REPAIRS @ SOUTHEAST ELEVATION	5	31-Oct-17	06-Nov-17
26482	INSTALL LANTERNS & ORNAMENTAL IRONWORK @ SOUTHEAST	2	31-Oct-17	01-Nov-17

3. Resources Observed in Area:

a. No workers observed in area during walk-thru (**Rain)

4. Current Site Condition Pictures:

Please see next page (South East Elevation)

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

D. Hotel Bennet Schedule Progress Review

4. Progress shown on 4Aug17 Schedule Update vs. Actual site conditions as of 28Aug17

a. Exterior Envelope

i. South Center Elevation

1. Near term progress shown on 4Aug17 schedule

a. Install WP at South Center Elevation Started 01AUG17 to Complete 04AUG17.
b. Install Bead & Scratch & Brown Coat Stucco at South Center Elevation to Start 07AUG17 and Complete on 11AUG17.
c. Cure Stucco at South Center Elevation to Start 12AUG17 and Complete 18AUG17.
d. Apply Finish Stucco Coat at South Center Elevation to Start 21AUG17 and Complete 22AUG17.
e. Caulking at South Center Elevation to Start 23AUG17 and Complete 23AUG17.
f. Remove Stucco Scaffolding at South Center Elevation to Start 24AUG17 and Complete 24AUG17.

2. Actual site conditions as of 28Aug17

a. Install WP at South Center Elevation - Complete
b. Install Bead & Scratch & Brown Coat Stucco at South Center Elevation - Complete
c. Cure Stucco at South Central - Complete
d. Apply Finish Stucco Coat at South Center Elevation – Not Started.
e. Caulking at South Center Elevation –Not Started.
f. Remove Stucco Scaffolding at South Center Elevation –Not Started.



SOUTH CENTER ELEVATION (FLOORS 1 & 2)					
A1016	INSTALL WP @ SOUTH CENTER ELEVATION	4	1	01-Aug-17A	04-Aug-17
24764	INSTALL BEAD & SCRATCH & BROWN COAT STUCCO @ SOUTH CE	5	5	07-Aug-17	11-Aug-17
24766	CURE STUCCO @ SOUTH CENTER ELEVATION	7	7	12-Aug-17	18-Aug-17
24768	APPLY FINISH STUCCO COAT @ SOUTH CENTER ELEVATION	2	2	21-Aug-17	22-Aug-17
24770	CAULKING @ SOUTH CENTER ELEVATION	1	1	23-Aug-17	23-Aug-17
24774	REMOVE STUCCO SCAFFOLDING @ SOUTH CENTER ELEVATION	1	1	24-Aug-17	24-Aug-17
29425	PUNCH & REPAIRS @ SOUTH CENTER ELEVATION	5	5	14-Sep-17	20-Sep-17

3. Resources Observed in Area:

a. No workers observed in area during walk-thru (**Rain)

4. Current Site Condition Pictures:

Please see next page (South Center Elevation)

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

E. Hotel Bennet Schedule Progress Review

5. Progress shown on 4Aug17 Schedule Update vs. Actual site conditions as of 28Aug17

a. Exterior Envelope

i. Level 3 Thru 9 Center Courtyard

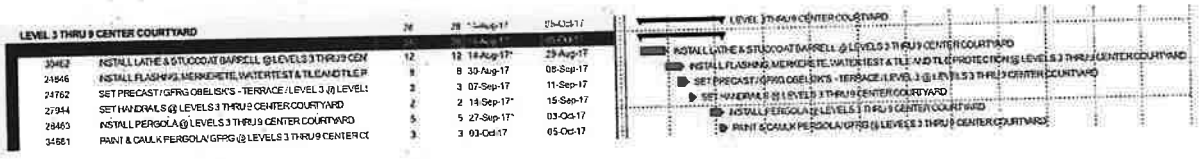
1. Near term progress shown on 4Aug17 schedule

a. Install Lathe & Stucco at Levels 3 Thru 9 Center Courtyard to Start 14AUG17 to Complete 29AUG17.
b. Install Flashing, Merkerete & Tile at Levels 3 Thru 9 Center Courtyard to Start 30AUG17 and Complete on 08SEP17.

2. Actual site conditions as of 28Aug17

a. Install Lathe & Stucco at Levels 3 Thru 9 Center Courtyard - Complete

b. Install Flashing, Merkerete & Tile at Levels 3 Thru 9 Center - Not Started.



3. Resources Observed in Area:

a. No workers observed in area during walk-thru (**Rain)

4. Current Site Condition Pictures:

Please see next page (Level 3 Thru 9 Center Courtyard)

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108











F. Hotel Bennet Schedule Progress Review

6. Progress shown on 4Aug17 Schedule Update vs. Actual site conditions as of 28Aug17

a. Exterior Envelope

i. South West Elevation

1. Near term progress shown on 4Aug17 schedule

a. Set Precast Quoins at South West Elevation Started 31JUL17 to Complete 08AUG17.
b. Install Bead & Scratch & Brown Coat Stucco at South West Elevation Started 03AUG17 to Complete on 11AUG17.
c. Install Aluminum Cornice at Roof South West Elevation to Start 07AUG17 and Complete 18AUG17.
d. Cure Stucco Coat at South West Elevation to Start 12AUG17 and Complete 18AUG17.
e. Remove Premier Scaffolding at South West Elevation to Start 14AUG17 and Complete 16AUG17.
f. Install Roof Framing at South West Elevation to Start 17AUG17 and Complete 18AUG17.
g. Apply Finish Stucco Coat at South West Elevation to Start 21AUG17 and Complete 25AUG17.
h. Install Copper Roofing, Soffit & Gutter at South West Elevation to Start 21AUG17 and Complete 23AUG17.
i. Install Flashing, Merkerete & Protection at South West Elevation to Start 24AUG17 and Complete 29AUG17.
j. Caulking at South West Elevation to Start 28AUG17 and Complete 01SEP17.
k. Install Floor Tile at South West Elevation to Start 30AUG17 and Complete 06SEP17.

(Continued on Next Page)

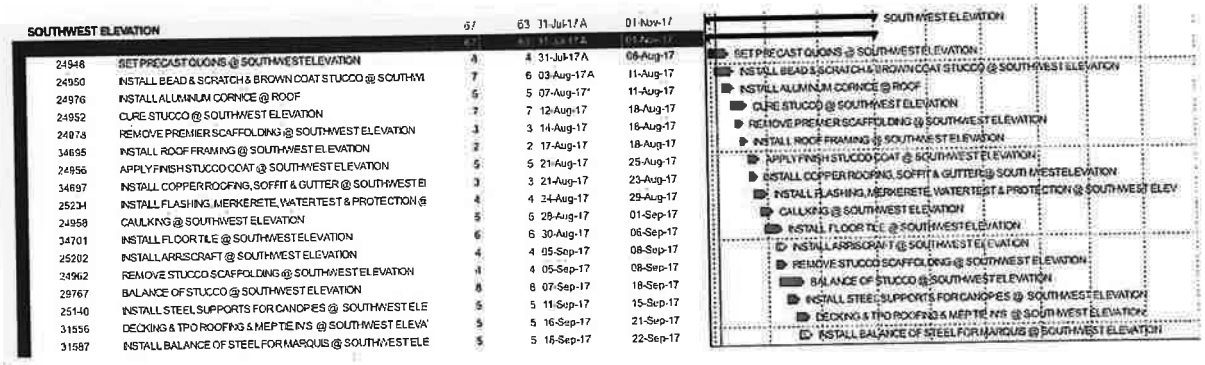
ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

(F. South West Elevation Continuation Page)

2. Actual site conditions as of 28Aug17

   a. Set Precast Quoins at South West Elevation - Complete
   b. Install Bead & Scratch & Brown Coat Stucco at South West Elevation - Complete
   c. Install Aluminum Cornice at Roof South West Elevation - Complete
   d. Cure Stucco Coat at South West Elevation - Complete
   e. Remove Premier Scaffolding at South West Elevation - Complete
   f. Install Roof Framing at South West Elevation - Complete
   g. Apply Finish Stucco Coat at South West Elevation has started – 75% Complete
   h. Install Copper Roofing, Soffit & Gutter at South West - Complete
   i. Install Flashing, Merkerete & Protection at South West Elevation - Not Started.
   j. Caulking at South West Elevation – Not Started.
   k. Install Floor Tile at South West Elevation - Not Started.



SOUTHWEST ELEVATION		67	63	31-Jul-17 A	01-Nov-17
24946	SET PRECAST QUOINS @ SOUTHWEST ELEVATION	4	4	31-Jul-17 A	08-Aug-17
24950	INSTALL BEAD & SCRATCH & BROWN COAT STUCCO @ SOUTHWI	7	6	03-Aug-17 A	11-Aug-17
24976	INSTALL ALUMINUM CORNICE @ ROOF	5	5	07-Aug-17*	11-Aug-17
24952	CURE STUCCO @ SOUTHWEST ELEVATION	7	7	12-Aug-17	18-Aug-17
24978	REMOVE PREMIER SCAFFOLDING @ SOUTHWEST ELEVATION	3	3	14-Aug-17	18-Aug-17
34695	INSTALL ROOF FRAMING @ SOUTHWEST ELEVATION	2	2	17-Aug-17	18-Aug-17
24956	APPLY FINISH STUCCO COAT @ SOUTHWEST ELEVATION	5	5	21-Aug-17	25-Aug-17
34697	INSTALL COPPER ROOFING, SOFFIT & GUTTER @ SOUTHWEST EI	3	3	21-Aug-17	23-Aug-17
25234	INSTALL FLASHING, MERKERETE, WATERTEST & PROTECTION @	4	4	24-Aug-17	29-Aug-17
24958	CAULKING @ SOUTHWEST ELEVATION	5	5	28-Aug-17	01-Sep-17
34701	INSTALL FLOOR TILE @ SOUTHWEST ELEVATION	6	6	30-Aug-17	06-Sep-17
25202	INSTALL ARRISCRAFT @ SOUTHWEST ELEVATION	4	4	05-Sep-17	08-Sep-17
24962	REMOVE STUCCO SCAFFOLDING @ SOUTHWEST ELEVATION	4	4	05-Sep-17	08-Sep-17
28767	BALANCE OF STUCCO @ SOUTHWEST ELEVATION	8	8	07-Sep-17	18-Sep-17
25140	INSTALL STEEL SUPPORTS FOR CANOPIES @ SOUTHWEST ELE	5	5	11-Sep-17	15-Sep-17
31556	DECKING & TPO ROOFING & MEPTE INS @ SOUTHWEST ELEVA	5	5	16-Sep-17	21-Sep-17
31587	INSTALL BALANCE OF STEEL FOR MARQUIS @ SOUTHWEST ELE	5	5	16-Sep-17	22-Sep-17

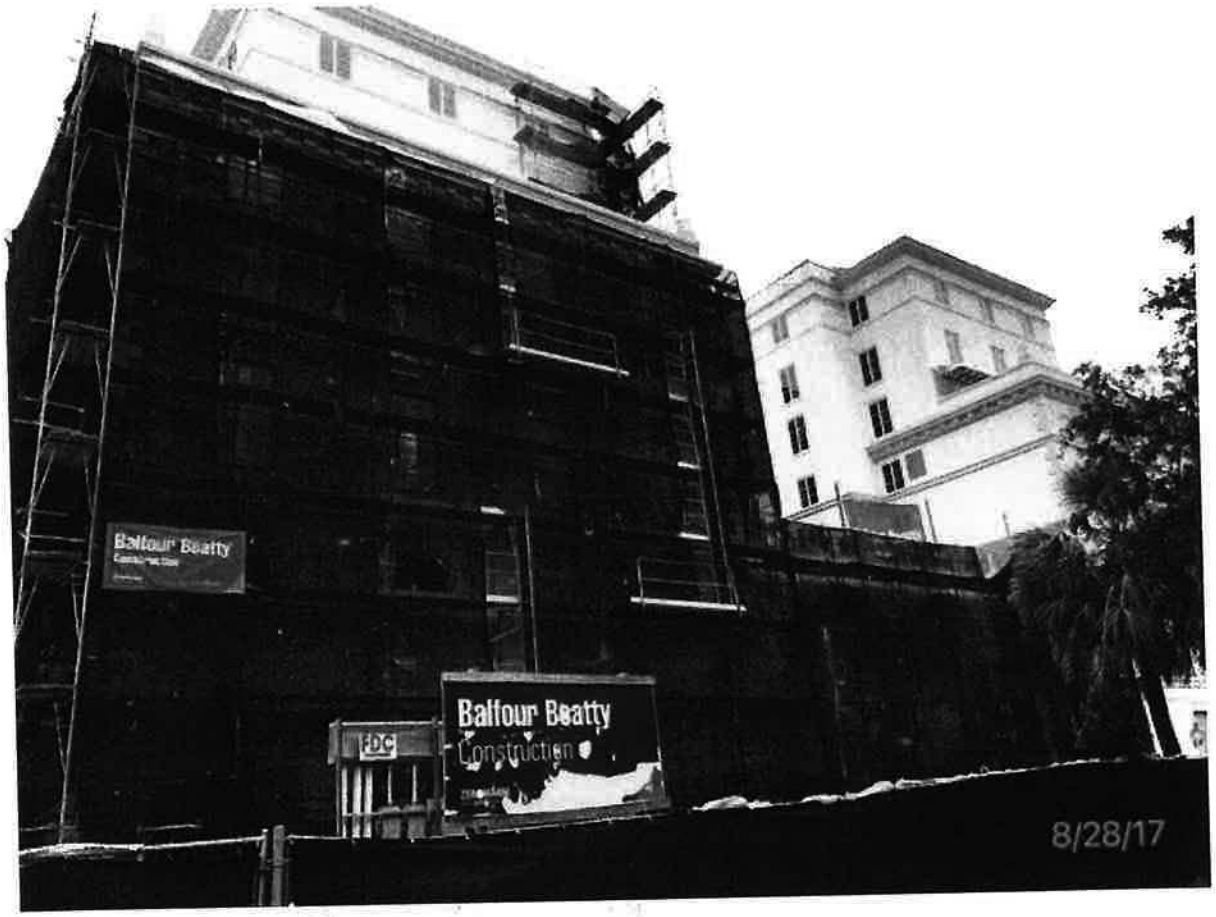
3. Resources Observed in Area:

   a. No workers observed in area during walk-thru (**Rain)

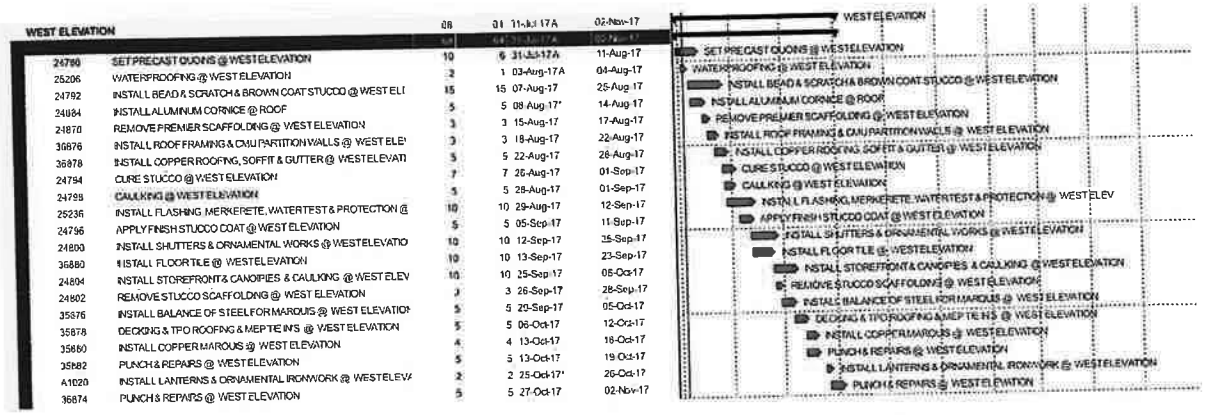
4. Current Site Condition Pictures:

   Please see next page (South West Elevation)

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108



(G. West Elevation Continuation Page)



WEST ELEVATION					
		08	01 11-Jul-17 A	02-Nov-17	
24780	SET PRECAST QUOINS @ WEST ELEVATION	10	6 31-Jul-17 A	11-Aug-17	
25206	WATERPROOFING @ WEST ELEVATION	2	1 03-Aug-17 A	04-Aug-17	
24792	INSTALL BEAD & SCRATCH & BROWN COAT STUCCO @ WEST ELI	15	15 07-Aug-17	25-Aug-17	
24484	INSTALL ALUMINUM CORNICE @ ROOF	5	5 08-Aug-17*	14-Aug-17	
24870	REMOVE PREMIER SCAFFOLDING @ WEST ELEVATION	3	3 15-Aug-17	17-Aug-17	
36876	INSTALL ROOF FRAMING & CMU PARTITION WALLS @ WEST ELE	3	3 18-Aug-17	22-Aug-17	
36878	INSTALL COPPER ROOFING, SOFFIT & GUTTER @ WEST ELEVATI	5	5 22-Aug-17	28-Aug-17	
24794	CURE STUCCO @ WEST ELEVATION	7	7 26-Aug-17	01-Sep-17	
24798	CAULKING @ WEST ELEVATION	5	5 28-Aug-17	01-Sep-17	
25236	INSTALL FLASHING, MERKERETE, WATERTEST & PROTECTION @	10	10 29-Aug-17	12-Sep-17	
24796	APPLY FINISH STUCCO COAT @ WEST ELEVATION	5	5 05-Sep-17	11-Sep-17	
24800	INSTALL SHUTTERS & ORNAMENTAL WORKS @ WEST ELEVATIO	10	10 12-Sep-17	25-Sep-17	
36880	INSTALL FLOOR TILE @ WEST ELEVATION	10	10 13-Sep-17	23-Sep-17	
24804	INSTALL STOREFRONT & CANOPIES & CAULKING @ WEST ELEV	10	10 25-Sep-17	05-Oct-17	
24802	REMOVE STUCCO SCAFFOLDING @ WEST ELEVATION	3	3 26-Sep-17	28-Sep-17	
35876	INSTALL BALANCE OF STEEL FOR MARQUIS @ WEST ELEVATION	5	5 29-Sep-17	05-Oct-17	
35878	DECKING & TPO ROOFING & MEPTE INS @ WEST ELEVATION	5	5 06-Oct-17	12-Oct-17	
35880	INSTALL COPPER MARQUIS @ WEST ELEVATION	4	4 13-Oct-17	18-Oct-17	
35882	PUNCH & REPAIRS @ WEST ELEVATION	5	5 13-Oct-17	19-Oct-17	
A1020	INSTALL LANTERNS & ORNAMENTAL IRONWORK @ WEST ELEV	2	2 25-Oct-17*	26-Oct-17	
36874	PUNCH & REPAIRS @ WEST ELEVATION	5	5 27-Oct-17	02-Nov-17	

3. Resources Observed in Area:

   a. No workers observed in area during walk-thru (**Rain)

4. Current Site Condition Pictures:

   Please see next page (West Elevation)

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

H. Hotel Bennet Schedule Progress Review

8. Progress shown on 4Aug17 Schedule Update vs. Actual site conditions as of 28Aug17

a. Exterior Envelope

i. North West Elevation

1. Near term progress shown on 4Aug17 schedule

a. Waterproofing at North West Elevation to Start 04AUG17 and Complete 04AUG17.
b. Install Aluminum Cornice at Roof North West Elevation to Start 07AUG17 and Complete on 11AUG17.
c. Remove Premiere Scaffolding at North West Elevation to Start 12AUG17 and Complete 15AUG17.
d. Install Roof Framing at North West Elevation to Start 16AUG17 and Complete 18AUG17.
e. Install Bead & Scratch & Brown Coat Stucco at North West Elevation to Start 21AUG17 and Complete 25AUG17.
f. Install Copper Roofing, Soffit & Gutter at North West Elevation to Start 21AUG17 and Complete 23AUG17.
g. Install Flashing, Merkerete & Protection at North West Elevation to Start 24AUG17 and Complete 07SEP17.
h. Install Floor Tile at North West Elevation to Start 24AUG17 and Complete 01SEP17.
i. Cure Stucco at North West Elevation to Start 26AUG17 and Complete 01SEP17.
j. Install Arriscraft at North West Elevation to Start 28AUG17 and Complete 31AUG17.
k. Caulking at North West Elevation to Start 28AUG17 and Complete 01SEP17.

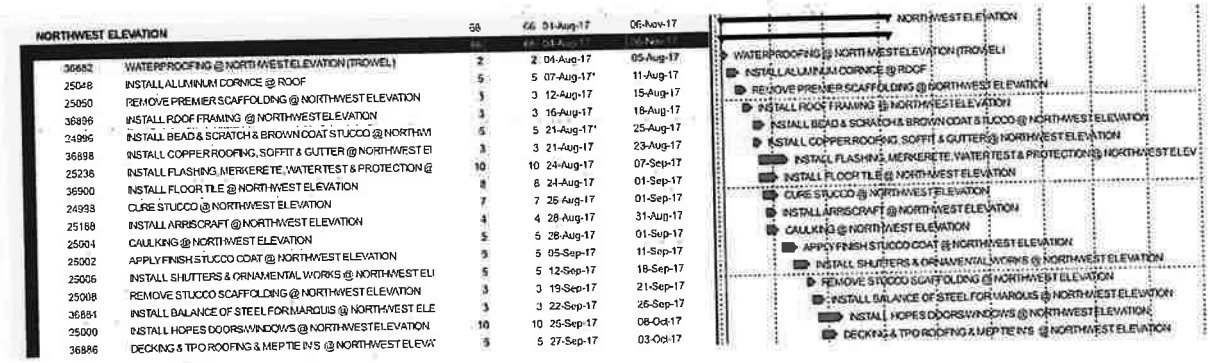
(Continued on Next Page)

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

(H. North West Elevation Continuation Page)

2. Actual site conditions as of 28Aug17

   a. Waterproofing at North West Elevation - Complete
   b. Install Aluminum Cornice at Roof North West Elevation - Complete
   c. Remove Premiere Scaffolding at North West Elevation - Complete
   d. Install Roof Framing at North West Elevation - Complete
   e. Install Bead & Scratch & Brown Coat Stucco at North West Elevation - Complete
   f. Install Copper Roofing, Soffit & Gutter at North West Elevation - Complete
   g. Install Flashing, Merkerete & Protection at North West Elevation – Not Started
   h. Install Floor Tile at North West Elevation – Not Started
   i. Cure Stucco at North West Elevation - Complete
   j. Install Arriscraft at North West Elevation – Not Started
   k. Caulking at North West Elevation – Not Started



NORTHWEST ELEVATION		58	56	01-Aug-17	05-Nov-17
36882	WATERPROOFING @ NORTHWEST ELEVATION (TROWEL)	2	2	04-Aug-17	05-Aug-17
25048	INSTALL ALUMINUM CORNICE @ ROOF	5	5	07-Aug-17*	11-Aug-17
25050	REMOVE PREMIER SCAFFOLDING @ NORTHWEST ELEVATION	3	3	12-Aug-17	15-Aug-17
36896	INSTALL ROOF FRAMING @ NORTHWEST ELEVATION	3	3	16-Aug-17	18-Aug-17
24996	INSTALL BEAD & SCRATCH & BROWN COAT STUCCO @ NORTHWI	5	5	21-Aug-17*	25-Aug-17
36898	INSTALL COPPER ROOFING, SOFFIT & GUTTER @ NORTHWEST EI	3	3	21-Aug-17	23-Aug-17
25236	INSTALL FLASHING, MERKERETE, WATER TEST & PROTECTION @	10	10	24-Aug-17	07-Sep-17
36900	INSTALL FLOOR TILE @ NORTHWEST ELEVATION	8	8	24-Aug-17	01-Sep-17
24998	CURE STUCCO @ NORTHWEST ELEVATION	7	7	25-Aug-17	01-Sep-17
25188	INSTALL ARRISCRAFT @ NORTHWEST ELEVATION	4	4	28-Aug-17	31-Aug-17
25004	CAULKING @ NORTHWEST ELEVATION	5	5	28-Aug-17	01-Sep-17
25002	APPLY FINISH STUCCO COAT @ NORTHWEST ELEVATION	5	5	05-Sep-17	11-Sep-17
25006	INSTALL SHUTTERS & ORNAMENTAL WORKS @ NORTHWEST ELI	5	5	12-Sep-17	18-Sep-17
25008	REMOVE STUCCO SCAFFOLDING @ NORTHWEST ELEVATION	3	3	19-Sep-17	21-Sep-17
36881	INSTALL BALANCE OF STEEL FOR MARQUIS @ NORTHWEST ELE	3	3	22-Sep-17	26-Sep-17
25000	INSTALL HOPES DOORS/WINDOWS @ NORTHWEST ELEVATION	10	10	25-Sep-17	08-Oct-17
36886	DECKING & TPO ROOFING & MEP TIE IN'S @ NORTHWEST ELEVA	5	5	27-Sep-17	03-Oct-17

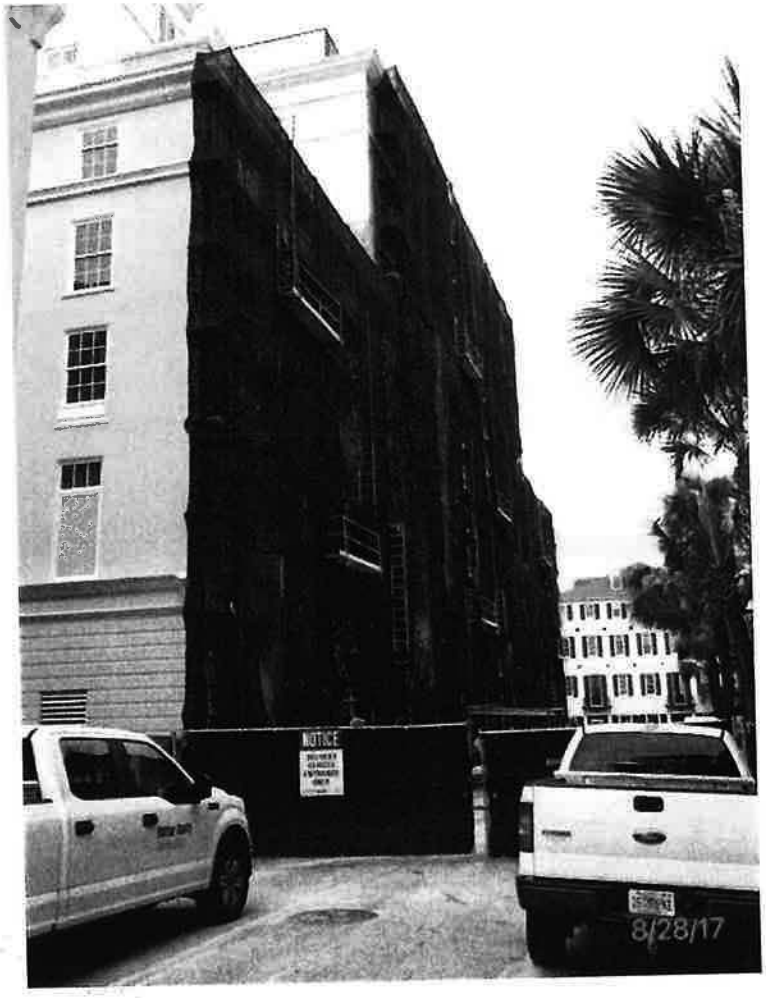
3. Resources Observed in Area:

   a. No workers observed in area during walk-thru (**Rain)

4. Current Site Condition Pictures:

   Please see next page (North West Elevation)

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

I. Hotel Bennet Schedule Progress Review

9. Progress shown on 4Aug17 Schedule Update vs. Actual site conditions as of 28Aug17

a. Exterior Envelope

i. North East Elevation

1. Near term progress shown on 4Aug17 schedule

a. Set Precast Cornice 2nd Floor at North East Elevation Started 24JUL17 to Complete 11AUG17.
b. Apply Finish Stucco Coat at North East Elevation Started 03AUG17 to Complete 07AUG17.
c. Caulking at North East Elevation to Start 08AUG17 and Complete 10AUG17.
d. Premiere Scaffolding Up to 6th Floor at North East Elevation to Start 14AUG17 and Complete 18AUG17.
e. Remove Stucco Scaffolding at North East Elevation to Start 15AUG17 and Complete 16AUG17.
f. Install Roof Framing & CMU Partition Walls at North East Elevation to Start 17AUG17 and Complete 21AUG17.
g. Float & Repair CMU at North East Elevation to Start 18AUG17 and Complete 19AUG17.
h. Waterproofing at North East Elevation to Start 21AUG17 and Complete 23AUG17.
i. Install Copper Roofing, Soffit & Gutter at North East Elevation to Start 22AUG17 and Complete 24AUG17.
j. Install Bead & Scratch & Brown Coat Stucco at North East Elevation to Start 24AUG17 and Complete 30AUG17.
k. Install Floor Tile at North East Elevation to Start 25AUG17 and Complete 01SEP17.
l. Caulking at North East Elevation to Start 30AUG17 and Complete 06SEP17.
m. Cure Stucco at North East Elevation to Start 31AUG17 and Complete 06SEP17.

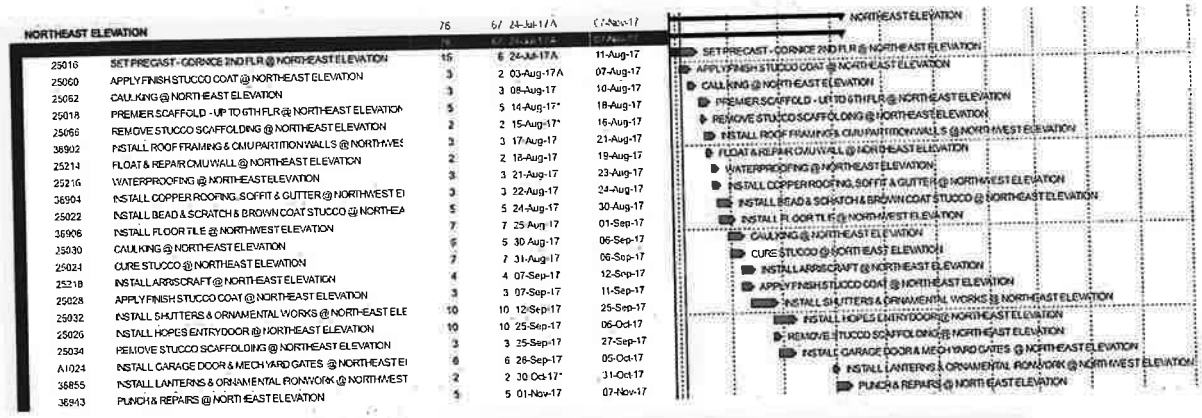
(Continued on Next Page)

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

(I. North East Elevation Continuation Page)

2. Actual site conditions as of 28Aug17

   a. Set Precast Cornice 2nd Floor at North East Elevation – Not Started
   b. Apply Finish Stucco Coat at North East Elevation Started 03AUG17 – 50% Complete
   c. Caulking at North East Elevation – Not Started
   d. Premiere Scaffolding Up to 6th Floor at North East Elevation - Complete
   e. Remove Stucco Scaffolding at North East Elevation - Complete
   f. Install Roof Framing & CMU Partition Walls at North East Elevation - Complete
   g. Float & Repair CMU at North East Elevation - Complete
   h. Waterproofing at North East Elevation – Not Started
   i. Install Copper Roofing, Soffit & Gutter at North East Elevation - Complete
   j. Install Bead & Scratch & Brown Coat Stucco at North East Elevation – Started 75% Complete
   k. Install Floor Tile at North East Elevation – Not Started
   l. Caulking at North East Elevation – Not Started
   m. Cure Stucco at North East Elevation – Not Started



NORTHEAST ELEVATION		76	67	24-Jul-17 A	07-Nov-17
25016	SET PRECAST - CORNICE 2ND FLR @ NORTHEAST ELEVATION	15	6	24-Jul-17 A	11-Aug-17
25060	APPLY FINISH STUCCO COAT @ NORTHEAST ELEVATION	3	2	03-Aug-17 A	07-Aug-17
25062	CAULKING @ NORTHEAST ELEVATION	3	3	08-Aug-17	10-Aug-17
25018	PREMIER SCAFFOLD - UP TO 6TH FLR @ NORTHEAST ELEVATION	5	5	14-Aug-17*	18-Aug-17
25066	REMOVE STUCCO SCAFFOLDING @ NORTHEAST ELEVATION	2	2	15-Aug-17*	16-Aug-17
36902	INSTALL ROOF FRAMING & CMU PARTITION WALLS @ NORTHWES	3	3	17-Aug-17	21-Aug-17
25214	FLOAT & REPAIR CMU WALL @ NORTHEAST ELEVATION	2	2	18-Aug-17	19-Aug-17
25216	WATERPROOFING @ NORTHEAST ELEVATION	3	3	21-Aug-17	23-Aug-17
36904	INSTALL COPPER ROOFING, SOFFIT & GUTTER @ NORTHWEST EI	3	3	22-Aug-17	24-Aug-17
25022	INSTALL BEAD & SCRATCH & BROWN COAT STUCCO @ NORTHEA	5	5	24-Aug-17	30-Aug-17
36906	INSTALL FLOOR TILE @ NORTHWEST ELEVATION	7	7	25-Aug-17	01-Sep-17
25030	CAULKING @ NORTHEAST ELEVATION	6	5	30-Aug-17	06-Sep-17
25024	CURE STUCCO @ NORTHEAST ELEVATION	7	7	31-Aug-17	06-Sep-17
25218	INSTALL ARRISCRAFT @ NORTHEAST ELEVATION	4	4	07-Sep-17	12-Sep-17
25028	APPLY FINISH STUCCO COAT @ NORTHEAST ELEVATION	3	3	07-Sep-17	11-Sep-17
25032	INSTALL SHUTTERS & ORNAMENTAL WORKS @ NORTHEAST ELE	10	10	12-Sep-17	25-Sep-17
25026	INSTALL HOPES ENTRY DOOR @ NORTHEAST ELEVATION	10	10	25-Sep-17	06-Oct-17
25034	REMOVE STUCCO SCAFFOLDING @ NORTHEAST ELEVATION	3	3	25-Sep-17	27-Sep-17
A1024	INSTALL GARAGE DOOR & MECH YARD GATES @ NORTHEAST EI	6	6	28-Sep-17	05-Oct-17
36855	INSTALL LANTERNS & ORNAMENTAL IRONWORK @ NORTHWEST	2	2	30-Oct-17*	31-Oct-17
36943	PUNCH & REPAIRS @ NORTHEAST ELEVATION	5	5	01-Nov-17	07-Nov-17

(**Check Activities "Finish Stucco" and "Scratch Coat", these seem to be out of order.**)

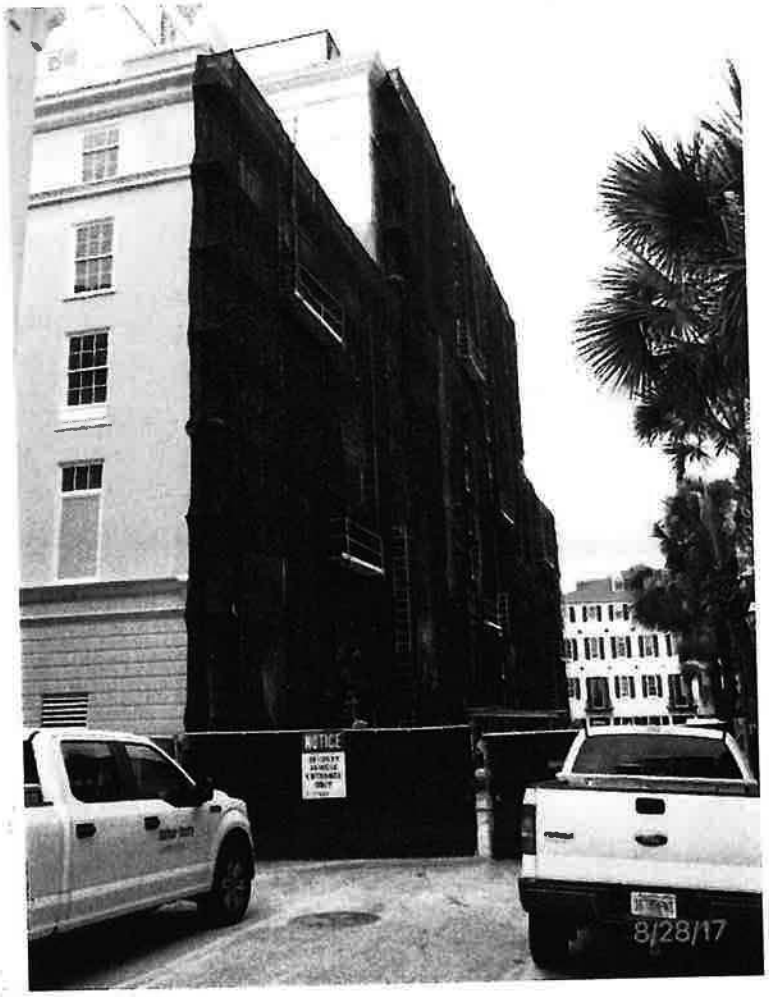
3. Resources Observed in Area:

   a. No workers observed in area during walk-thru (**Rain)

4. Current Site Condition Pictures:

   Please see next page (North East Elevation)

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

J. Hotel Bennet Schedule Progress Review

10. Progress shown on 4Aug17 Schedule Update vs. Actual site conditions as of 28Aug17

a. Exterior Envelope

i. North Center Elevation

1. Near term progress shown on 4Aug17 schedule

a. Install Dowels & Waterproofing at North Center Elevation Started 01AUG17 to Complete 08AUG17.
b. Install Precast 2nd Floor at North Center Elevation Started 02AUG17 to Complete 07AUG17.
c. Install Premiere Scaffolding at North Center Elevation to Start 10AUG17 and Complete 17AUG17.
d. Float & Repair CMU Wall at North Center Elevation to Start 18AUG17 and Complete 24AUG17.
e. Install Waterproofing for 8th Floor Precast at North Center Elevation to Start 21AUG17 and Complete 21AUG17.
f. Install Precast at 8th Floor at North Center Elevation to Start 28AUG17 and Complete 30AUG17.
g. Install Bead & Scratch & Brown Coat Stucco at North Center Elevation to Start 31AUG17 and Complete 14SEP17.

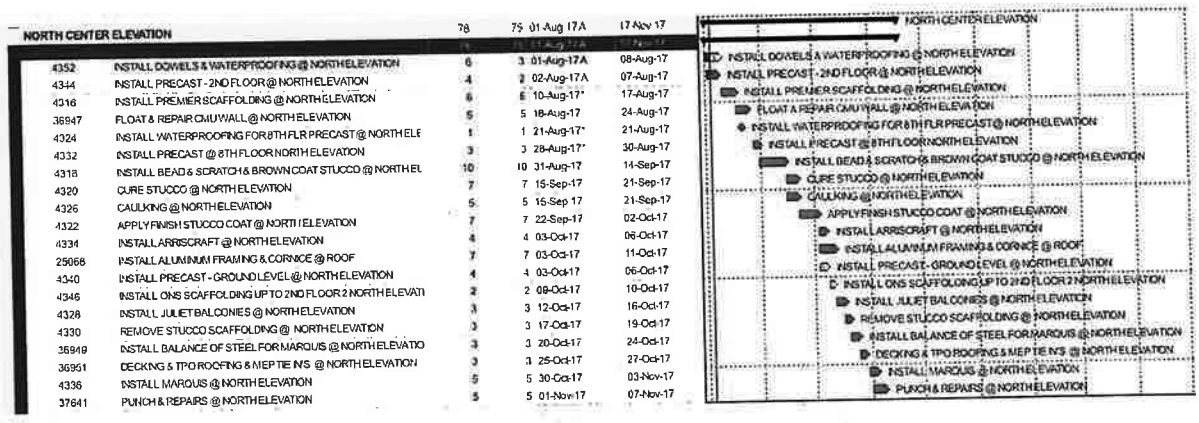
2. Actual site conditions as of 28Aug17

a. Install Dowels & Waterproofing at North Center Elevation - Complete
b. Install Precast 2nd Floor at North Center Elevation Started 02AUG17 – 25% Complete
c. Install Premiere Scaffolding at North Center Elevation - Complete
d. Float & Repair CMU Wall at North Center Elevation - Complete
e. Install Waterproofing for 8th Floor Precast at North Center Elevation – Complete
f. Install Precast at 8th Floor at North Center Elevation -- Not Started
g. Install Bead & Scratch & Brown Coat Stucco at North Center Elevation – Not Started

(Continued on Next Page)

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

(J. North Center Elevation Continuation Page)



NORTH CENTER ELEVATION		78	75	01-Aug-17A	17-Nov-17
4352	INSTALL DOWELS & WATERPROOFING @ NORTH ELEVATION	6	3	01-Aug-17A	08-Aug-17
4344	INSTALL PRECAST - 2ND FLOOR @ NORTH ELEVATION	4	2	02-Aug-17A	07-Aug-17
4316	INSTALL PREMIER SCAFFOLDING @ NORTH ELEVATION	6	6	10-Aug-17*	17-Aug-17
36947	FLOAT & REPAIR CMU WALL @ NORTH ELEVATION	5	5	18-Aug-17	24-Aug-17
4324	INSTALL WATERPROOFING FOR 8TH FLR PRECAST @ NORTH ELE	1	1	21-Aug-17*	21-Aug-17
4332	INSTALL PRECAST @ 8TH FLOOR NORTH ELEVATION	3	3	28-Aug-17*	30-Aug-17
4318	INSTALL BEAD & SCRATCH & BROWN COAT STUCCO @ NORTH EL	10	10	31-Aug-17	14-Sep-17
4320	CURE STUCCO @ NORTH ELEVATION	7	7	15-Sep-17	21-Sep-17
4326	CAULKING @ NORTH ELEVATION	5	5	15-Sep-17	21-Sep-17
4322	APPLY FINISH STUCCO COAT @ NORTH ELEVATION	7	7	22-Sep-17	02-Oct-17
4334	INSTALL ARRISCRAFT @ NORTH ELEVATION	4	4	03-Oct-17	06-Oct-17
25066	INSTALL ALUMINUM FRAMING & CORNICE @ ROOF	7	7	03-Oct-17	11-Oct-17
4340	INSTALL PRECAST - GROUND LEVEL @ NORTH ELEVATION	4	4	03-Oct-17	06-Oct-17
4346	INSTALL ONS SCAFFOLDING UP TO 2ND FLOOR 2 NORTH ELEVATI	2	2	09-Oct-17	10-Oct-17
4328	INSTALL JULIET BALCONIES @ NORTH ELEVATION	3	3	12-Oct-17	16-Oct-17
4330	REMOVE STUCCO SCAFFOLDING @ NORTH ELEVATION	3	3	17-Oct-17	19-Oct-17
36949	INSTALL BALANCE OF STEEL FOR MARQUIS @ NORTH ELEVATIO	3	3	20-Oct-17	24-Oct-17
36951	DECKING & TPO ROOFING & MEP TIE INS @ NORTH ELEVATION	3	3	25-Oct-17	27-Oct-17
4336	INSTALL MARQUIS @ NORTH ELEVATION	5	5	30-Oct-17	03-Nov-17
37641	PUNCH & REPAIRS @ NORTH ELEVATION	5	5	01-Nov-17	07-Nov-17

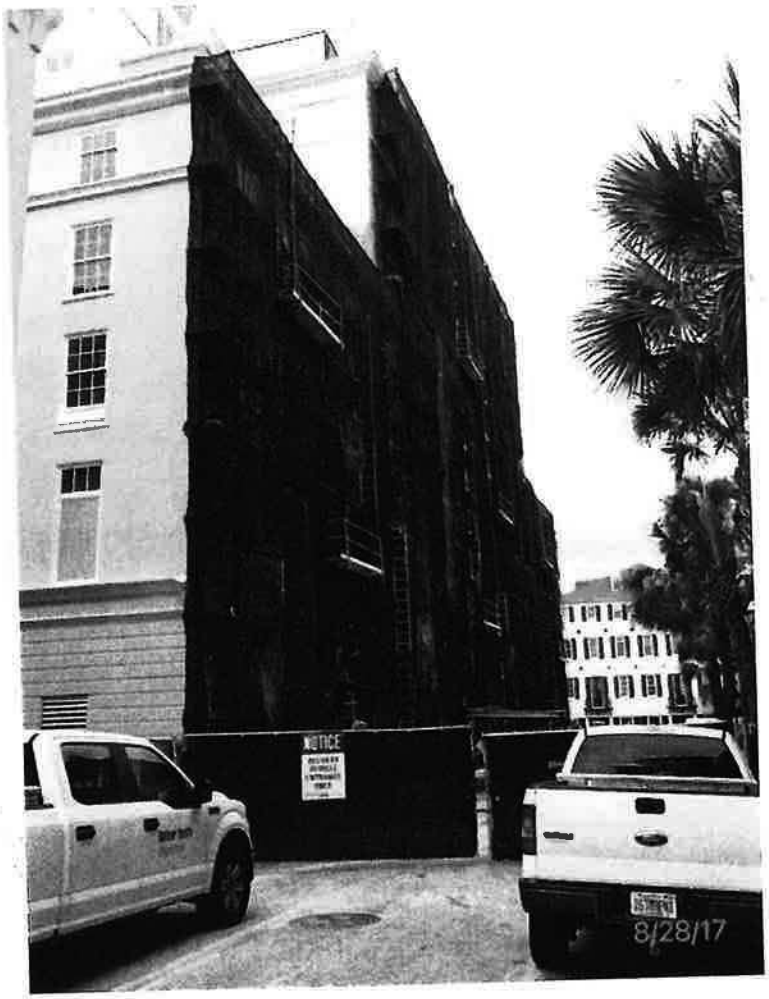
3. Resources Observed in Area:

   a. No workers observed in area during walk-thru (**Rain)

4. Current Site Condition Pictures:

   Please see next page (North Center Elevation)

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108



ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

K. Hotel Bennet Schedule Progress Review

11. Progress shown on 4Aug17 Schedule Update vs. Actual site conditions as of 28Aug17

a. Exterior

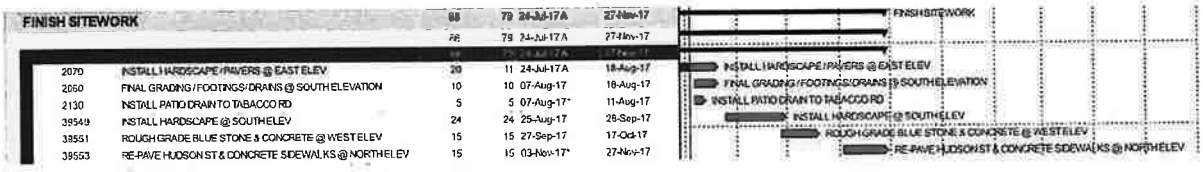
i. Finish Site Work

1. Near term progress shown on 4Aug17 schedule

a. Install Hardscape/ Pavers at East Elevation Started 24JUL17 to Complete 18AUG17.
b. Final Grading/ Footings/ Drains at South Elevation to Start 07AUG17 and Complete 18AUG17.
c. Install Patio Drain to Tabacco Rd. to Start 07AUG17 and Complete 11AUG17.
d. Install Hardscape at South Elevation to Start 25AUG17 and Complete 28SEP17.

2. Actual site conditions as of 28Aug17

a. Install Hardscape/ Pavers at East Elevation Started – 75% Complete
b. Final Grading/ Footings/ Drains at South Elevation Started – 25% Complete
c. Install Patio Drain to Tabacco Rd. – Not Started
d. Install Hardscape at South Elevation – Not Started



FINISH SITEWORK		68	79	24-Jul-17 A	27-Nov-17
	FS		79	24-Jul-17 A	27-Nov-17
2070	INSTALL HARDSCAPE/PAVERS @ EAST ELEV	20	11	24-Jul-17 A	18-Aug-17
2060	FINAL GRADING / FOOTINGS/ DRAINS @ SOUTH ELEVATION	10	10	07-Aug-17	18-Aug-17
2130	INSTALL PATIO DRAIN TO TABACCO RD	5	5	07-Aug-17*	11-Aug-17
39549	INSTALL HARDSCAPE @ SOUTH ELEV	24	24	25-Aug-17	28-Sep-17
39551	ROUGH GRADE BLUE STONE & CONCRETE @ WEST ELEV	15	15	27-Sep-17	17-Oct-17
39553	RE-PAVE HUDSON ST & CONCRETE SIDEWALKS @ NORTH ELEV	15	15	03-Nov-17*	27-Nov-17

3. Resources Observed in Area:

a. No workers observed in area during walk-thru (**Rain)

4. Current Site Condition Pictures:

Please see next page (Finish Site Work)

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108





ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

G. Hotel Bennet Schedule Progress Review

7. Progress shown on 4Aug17 Schedule Update vs. Actual site conditions as of 28Aug17

a. Exterior Envelope

i. West Elevation

1. Near term progress shown on 4Aug17 schedule

a. Set Precast Quoins at West Elevation Started 31JUL17 to Complete 114AUG17.
b. Waterproofing at West Elevation Started 03AUG17 to Complete 04AUG17.
c. Install Bead & Scratch & Brown Coat Stucco at West Elevation to Start 07AUG17 and Complete 25AUG17.
d. Install Aluminum Cornice at Roof West Elevation to Start 08AUG17 and Complete 14AUG17.
e. Remove Premiere Scaffolding at West Elevation to Start 15AUG17 and Complete 17AUG17.
f. Install Roof Framing & CMU Partition Walls at West Elevation to Start 18AUG17 and Complete 22AUG17.
g. Install Copper Roofing, Soffit & Gutter at West Elevation to Start 22AUG17 and Complete 28AUG17.
h. Cure Stucco at West Elevation to Start 26AUG17 and Complete 01SEP17.
i. Caulking at West Elevation to Start 28AUG17 and Complete 01SEP17.
j. Install Merkerete & Protection at West Elevation to Start 29AUG17 and Complete 12SEP17.

2. Actual site conditions as of 28Aug17

a. Set Precast Quoins at West Elevation - Complete
b. Waterproofing at West Elevation - Complete
c. Install Bead & Scratch & Brown Coat Stucco at West Elevation - Complete
d. Install Aluminum Cornice at Roof West Elevation - Complete
e. Remove Premiere Scaffolding at West Elevation - Complete
f. Install Roof Framing & CMU Partition Walls at West Elevation - Complete
g. Install Copper Roofing, Soffit & Gutter at West Elevation - Complete
h. Cure Stucco at West Elevation - Complete
i. Caulking at West Elevation – Not Started
j. Install Merkerete & Protection at West Elevation – Not Started

(Continued on Next Page)

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

L. Hotel Bennet Schedule Progress Review

12. Progress shown on 4Aug17 Schedule Update vs. Actual site conditions as of 28Aug17

a. Interior

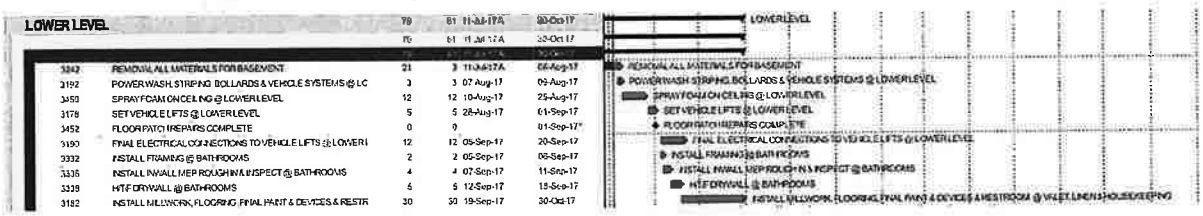
i. Lower Level

1. Near term progress shown on 4Aug17 schedule

a. Remove All Material for Basement Started 11JUL17 to Complete 08AUG17.
b. Power Wash, Striping, Bollards & Vehicle Systems to Start 07AUG17 and Complete 09AUG17.
c. Spray Foam on Ceiling to Start 10AUG17 and Complete 25AUG17.
d. Set Vehicle Lifts to Start 28AUG17 and Complete 01SEP17.

2. Actual site conditions as of 28Aug17

a. Remove All Material for Basement Started 11JUL17 – 75% Complete.
b. Power Wash, Striping, Bollards & Vehicle Systems – Complete.
c. Spray Foam on Ceiling – Complete.
d. Set Vehicle Lifts – Complete.

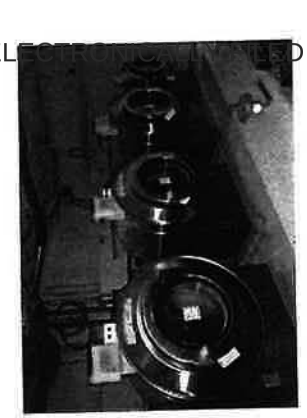


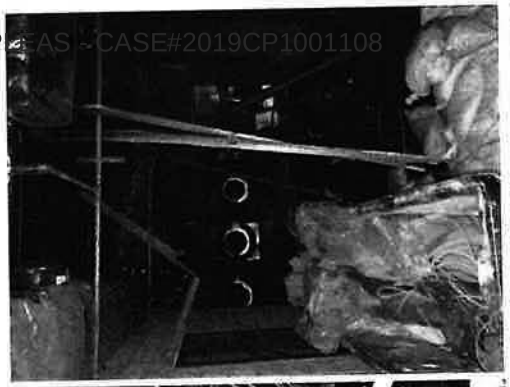
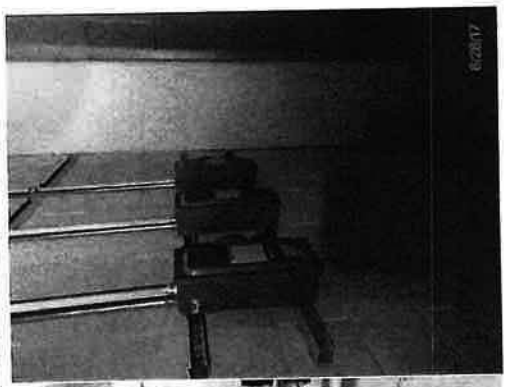
3. Resources Observed in Area:

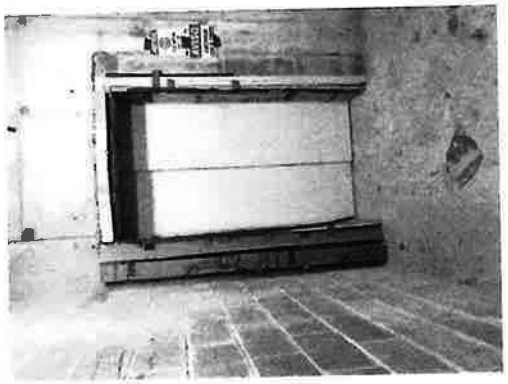
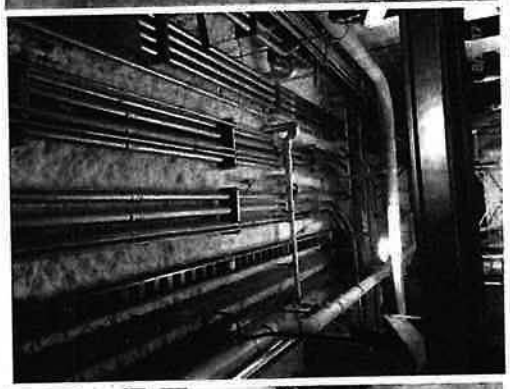
a. Clean-up Personnel – x2

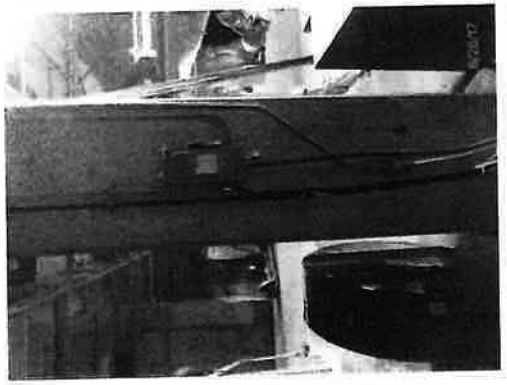
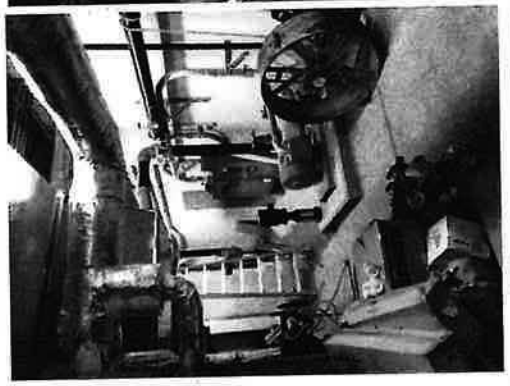
4. Current Site Condition Pictures: Please see next page (Lower Level)

ELECTRONICALLY FILED - 2023 May 16 11:48 AM - CHARLESTON - COMMON PLEAS - CASE#2019CP1001108

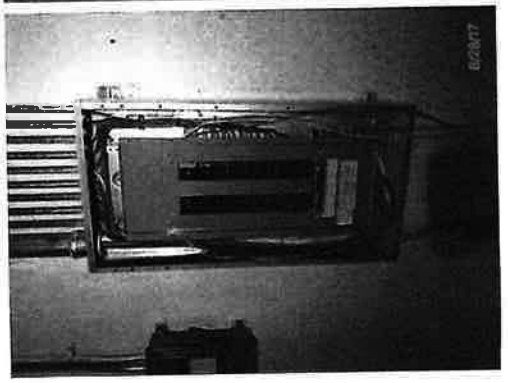




R-17000