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September 1, 1991

Mr. Larry Oestenstad
Project Manager
Kraus-Anderson Construction Company
525 South Eighth Street
Minneapolis, Minnesota 55404

Re: *Hinckley Grand Casino* - data run and early start/early finish bar chart

Dear Larry:

Enclosed are two translations of the planning and scheduling material we produced during our recent diagraming session. The first of these, labeled A on the attached Post-It, is a data run showing all the material in the network models, sheets #1 and #2, issue #1, dated August 27, 1991, and listed in early start, early finish sequence.

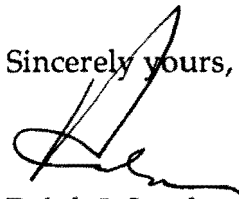
The listing is most easily read by looking down the early start column to the current date and high lighting it. On an early start schedule all the activities above that line must have started. For instance if you were evaluating the job on September 3, 1991 you would high light item 20. Item 20 and all activities above it should have started if the project is on the early start schedule.

The same technique can be used with a late start or a late finish sequence to see how close the job is running to these dates if desired.

The second translation marked B on the Post-It is a bar chart derived directly from the data run described above. The open bars show the early starts and finishes, the black bars show the late starts and finishes. I have sent these stapled in a 6 page set. If you wish you can tape them together and make a composite print. However I find the smaller sheets are usually adequate for reference purposes.

If there is any other material you wish or if you have any questions, please don't hesitate to call. I shall be in touch with you shortly to set our next planning session to suit your needs. Thank you for Dave's and your courtesy during our work meetings. Good luck on the project.

Sincerely yours,



Ralph J. Stephenson P. E.

	activity	early start	early finish	late start	late finish
1	T/R TO CONTRACT DATE - JULY 15, 1991	7/15/91	7/15/91	7/15/91	7/15/91
2	T/R TO START MOVING ON JOB SITE - 3	7/15/91	7/17/91	7/15/91	7/17/91
3	T/R TO START OF FIELD OPERATIONS - 5	7/15/91	7/19/91	7/15/91	7/19/91
4	COMPLETE EXECUTE CONTRACT - 26	7/15/91	8/19/91	7/15/91	8/19/91
5	MOBILIZE & MOVE ON JOB SITE - 2	7/18/91	7/19/91	7/18/91	7/19/91
6	MASS GRADE & BALANCE BUILDING AREA - 18	7/22/91	8/14/91	7/29/91	8/21/91
7	PART MASS GRADE & BALANCE WEST PARKING LOT - 22	7/22/91	8/20/91	7/22/91	8/20/91
8	PART INSTALL PERIMETER WALL & COLUMN FOOTINGS (MOVE FROM SE TO NW) - 4	8/15/91	8/20/91	8/22/91	8/27/91
9	T/R TO FAB & DELIVER ROOF MOUNTED EQUIPMENT - ?	8/20/91	8/20/91	11/18/91	11/18/91
10	E T/R TO SET LATE FINISH OF ACTIVITY	8/20/91	9/3/91	8/20/91	9/3/91
11	PART FORM, REINF, POUR & STRIP PERIMETER FOUNDATION WALLS (FROM SE TO NW) - 4	8/21/91	8/26/91	8/28/91	9/3/91
12	CONT(1) INSTALL PERIM WALL & COL FTGS - 4	8/21/91	8/26/91	8/28/91	9/3/91
13	PART INSTL SITE STORM WATER, SANITARY SEWER & WATER SERVICES - 9	8/21/91	9/3/91	8/21/91	9/3/91
14	COMP MASS GRADE & BALANCE WEST PARKING LOT - 9	8/21/91	9/3/91	8/21/91	9/3/91
15	CONT(1) FORM, REINF, POUR & STRIP PERIMETER FOUNDATION WALLS (FROM SE TO NW) - 4	8/27/91	8/30/91	9/4/91	9/9/91
16	COMP INSTALL PERIM WALL & COL FTGS - 4	8/27/91	8/30/91	9/4/91	9/9/91
17	T/R TO BEGIN WORK ON INT FOOTINGS & WALLS - 08/28/91	8/28/91	8/28/91	9/5/91	9/5/91
18	PART INSTL INT WALL & COL FTGS & PIERS - 4	8/28/91	9/3/91	9/5/91	9/10/91
19	COMP FORM, REINF, POUR & STRIP PERIMETER FOUNDATION WALLS (FROM SE TO NW) - 5	9/3/91	9/9/91	9/10/91	9/16/91
20	PART SET INSUL & BACKFILL FOUND WALLS - 5	9/3/91	9/9/91	9/10/91	9/16/91
21	COMP INSTALL STORM WATER, SANITARY SEWER & WATER SERVICES - 3	9/4/91	9/6/91	9/4/91	9/6/91
22	CONT(1) INSTL INT WALL & COL FTGS & PIERS - 4	9/4/91	9/9/91	9/11/91	9/16/91
23	MASS GRADE & BALANCE EAST PARKING LOT - 5	9/4/91	9/10/91	9/4/91	9/10/91
24	PART FORM, REINF, POUR & STRIP INT FOUNDATION WALLS - 4	9/10/91	9/13/91	9/17/91	9/20/91
25	CONT(1) SET INSUL & BACKFILL FOUND WALLS - 4	9/10/91	9/13/91	9/17/91	9/20/91

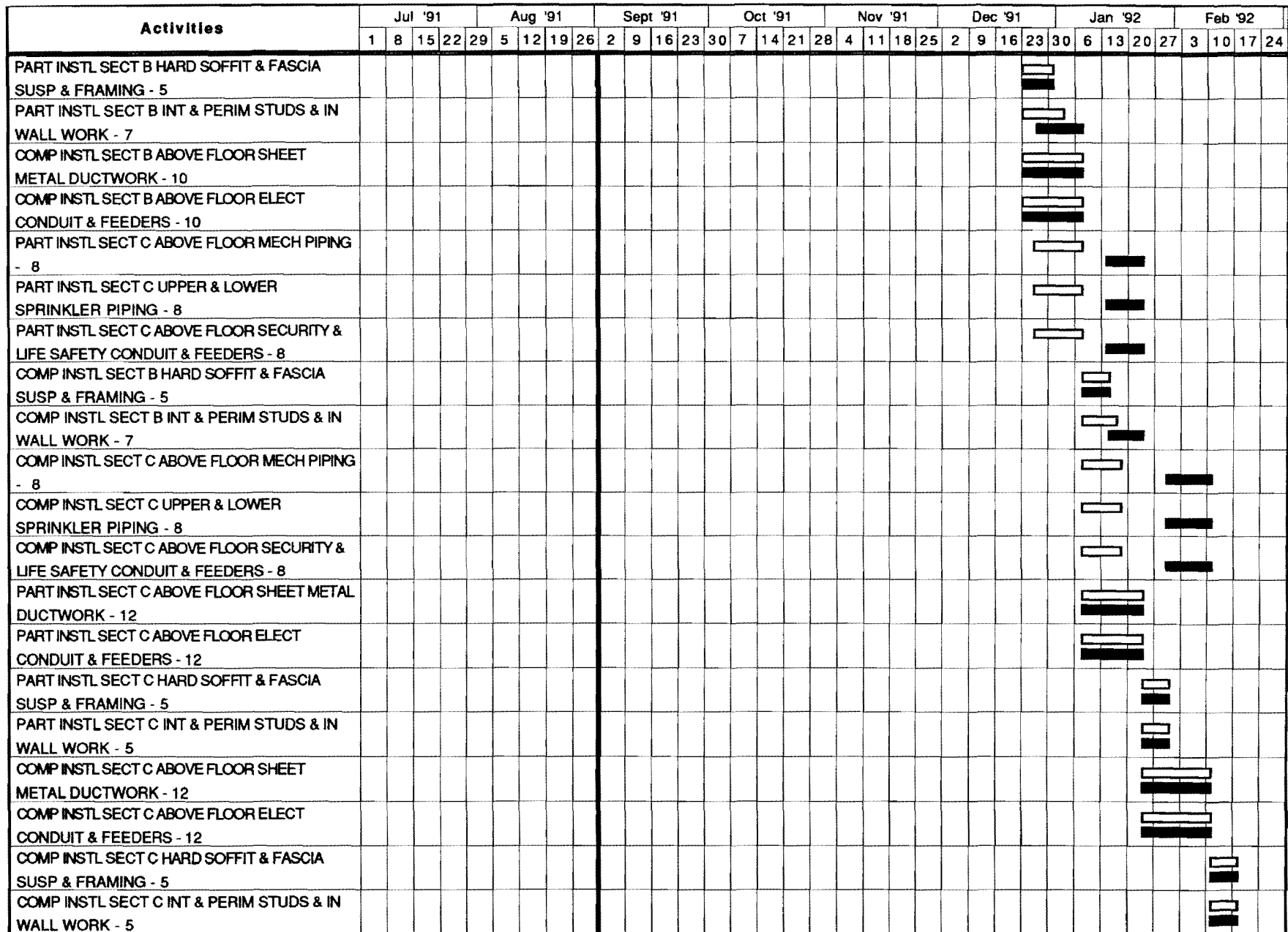
	activity	early start	early finish	late start	late finish
2 6	COMP INSTL INT WALL & COL FTGS & PIERS - 4	9/10/91	9/13/91	9/23/91	9/26/91
2 7	ERECT MASONRY BEARING WALLS AT ADMIN/SERV AREA TO PC BEARING - 5	9/10/91	9/16/91	9/18/91	9/24/91
2 8	COMP FORM, REINF, POUR & STRIP INT FOUND WALLS - 3	9/16/91	9/18/91	9/27/91	10/1/91
2 9	CONT (2) BACKFILL FOUND WALLS - 3	9/17/91	9/19/91	9/25/91	9/27/91
3 0	SUBSTANT COMP BACKFILL FOUND WALLS EXCEPT AT THE PRECAST WALL PANELS ON FOOTINGS - 3	9/20/91	9/24/91	10/2/91	10/4/91
3 1	T/R TO DELIVER EARLY STRUCT STEEL & JOISTS - 09/23/91	9/23/91	9/23/91	9/23/91	9/23/91
3 2	PART ERECT BLDG STRUCT STEEL & JOISTS (MOVE FROM S TO N) - 5	9/23/91	9/27/91	9/23/91	9/27/91
3 3	CONT (1) ERECT BLDG STRUCT STEEL & JOISTS - 5	9/30/91	10/4/91	9/30/91	10/4/91
3 4	PART PLUMB & DETAIL BLDG STRUCT STEEL & JOISTS - 5	9/30/91	10/4/91	9/30/91	10/4/91
3 5	ERECT & GROUT PRECAST PLANK AT SOUTH MEZZ - 2	10/7/91	10/8/91	10/18/91	10/21/91
3 6	CONT (1) PLUMB & DETAIL BLDG STRUCT STEEL & JOISTS - 5	10/7/91	10/11/91	10/7/91	10/11/91
3 7	PART ERECT & WELD BLDG METAL DECK - 5	10/7/91	10/11/91	10/7/91	10/11/91
3 8	SUBSTANT COMP BLDG ERECT STRUCT STEEL & JOISTS - 5	10/7/91	10/11/91	10/7/91	10/11/91
3 9	SUBSTANT COMP PLUMB & DETAIL BLDG STRUCT STEEL & JOISTS - 5	10/14/91	10/18/91	10/14/91	10/18/91
4 0	CONT (1) ERECT & WELD BLDG METAL DECK - 5	10/14/91	10/18/91	10/14/91	10/18/91
4 1	PART EXCAV, INSTL, TEST & BACKFILL INT UG UTILITIES (MOVE S TO N) - 5	10/14/91	10/18/91	10/14/91	10/18/91
4 2	T/R TO DELIVER EARLY PRECAST WALL PANELS OCT 15, 1991	10/15/91	10/15/91	10/15/91	10/15/91
4 3	PART ERECT EXT PRECAST WALL PANELS - 5	10/15/91	10/21/91	10/15/91	10/21/91
4 4	ERECT & GROUT PRECAST PLANK AT NORTH MEZZ - 2	10/21/91	10/22/91	11/1/91	11/4/91
4 5	COMP ERECT & WELD BLDG METAL DECK - 5	10/21/91	10/25/91	10/21/91	10/25/91
4 6	CONT (1) EXCAV, INSTL, TEST & BACKFILL INT UG UTILITIES - 5	10/21/91	10/25/91	10/21/91	10/25/91
4 7	PART PLACE VAPOR BARRIER & SAND CUSHION FOR SLAB ON GRADE - 5	10/21/91	10/25/91	10/21/91	10/25/91
4 8	PART INSTALL ROOF CURBS & BLOCKING - 3	10/22/91	10/24/91	10/23/91	10/25/91
4 9	ERECT EXT WALL STUDS INSUL & GYP BD & METAL SIDING ABOVE SOUTH MEZZ - 4	10/22/91	10/25/91	10/22/91	10/25/91
5 0	CONT (1) ERECT EXT PRECAST WALL PANELS - 5	10/22/91	10/28/91	10/22/91	10/28/91

	activity	early start	early finish	late start	late finish
5 1	COMP EXCAV, INSTL, TEST & BKFL INT UG UTILITIES - 5	10/28/91	11/1/91	10/28/91	11/1/91
5 2	CONT (1) PLACE VAPOR BARRIER & SAND CUSHION FOR SLAB ON GRADE - 5	10/28/91	11/1/91	10/28/91	11/1/91
5 3	PART SET IN FL WORK & POUR SLAB ON GRAD - 5	10/28/91	11/1/91	10/28/91	11/1/91
5 4	PART LAY INSUL & ROOFING - 5	10/28/91	11/1/91	10/28/91	11/1/91
5 5	CONT (1) INSTALL ROOF CURBS & BLOCKING - 3	10/29/91	10/31/91	10/30/91	11/1/91
5 6	COMP ERECT EXT PRECAST WALL PANELS - 5	10/29/91	11/4/91	10/29/91	11/4/91
5 7	COMP PLACE VAPOR BARRIER & SAND CUSHION FOR SLAB ON GRADE - 5	11/4/91	11/8/91	11/4/91	11/8/91
5 8	CONT (1) SET IN FL WORK & POUR SLAB ON GRADE - 5-	11/4/91	11/8/91	11/4/91	11/8/91
5 9	CONT (1) LAY INSUL & ROOFING - 5	11/4/91	11/8/91	11/4/91	11/8/91
6 0	INSTL SECT A ABOVE CEILING MISC IRON HANGERS - 5	11/4/91	11/8/91	11/13/91	11/19/91
6 1	PART INSTL SECT A ABOVE FLOOR MECH PIPING - 10	11/4/91	11/15/91	11/6/91	11/19/91
6 2	PART INSTL SECT A UPPER & LOWER SPRINKLER PIPING - 10	11/4/91	11/15/91	11/6/91	11/19/91
6 3	PART INSTL SECT A ABOVE FLOOR SECURITY & LIFE SAFETY CONDUIT & FEEDERS - 10	11/4/91	11/15/91	11/6/91	11/19/91
6 4	PART INSTL SECT A ABOVE FLOOR SHEET METAL DUCTWORK - 12	11/4/91	11/19/91	11/4/91	11/19/91
6 5	PART INSTL SECT A ABOVE FLOOR ELECT CONDUIT & FEEDERS - 12	11/4/91	11/19/91	11/4/91	11/19/91
6 6	COMP INSTALL ROOF CURBS & BLOCKING - 3	11/5/91	11/7/91	11/6/91	11/8/91
6 7	ERECT EXT WALL STUDS, INSUL, GYP BD & MTL SIDING ABOVE NORTH MEZZ - 4	11/5/91	11/8/91	11/5/91	11/8/91
6 8	PART INSTL EXT MAN DOORS & HARDWARE - 3	11/11/91	11/13/91	11/11/91	11/13/91
6 9	COMP SET IN FL WORK & POUR SLAB ON GRADE - 5	11/11/91	11/15/91	11/11/91	11/15/91
7 0	SUBSTANT COMP LAY INSUL & ROOFING - 5	11/11/91	11/15/91	11/11/91	11/15/91
7 1	INSTL SECT B ABOVE CEILING MISC IRON HANGERS - 5	11/11/91	11/15/91	12/19/91	12/26/91
7 2	COMP INSTL EXT MAN DOORS & HARDWARE - 3	11/14/91	11/18/91	11/14/91	11/18/91
7 3	INSTALL DOCK LEVELER - 1	11/18/91	11/18/91	11/18/91	11/18/91
7 4	SET ROOF MOUNTED EQUIPMENT - 2	11/18/91	11/19/91	11/18/91	11/19/91
7 5	INSTL OVERHEAD DOORS AT LOADING DOCK - 3	11/18/91	11/20/91	11/18/91	11/20/91

	activity	early start	early finish	late start	late finish
76	COMP INSTL ROOF FLASHINGS & TRIM - 3	11/18/91	11/20/91	11/18/91	11/20/91
77	PART INSTL EXT STOREFRONT & ENTRY FRAMING - 5	11/18/91	11/22/91	11/18/91	11/22/91
78	INSTL SECT C ABOVE CEILING MISC IRON HANGERS - 5	11/18/91	11/22/91	1/17/92	1/23/92
79	COMP INSTL SECT A ABOVE FLOOR MECH PIPING - 10	11/18/91	12/2/91	11/22/91	12/6/91
80	COMP INSTL SECT A UPPER & LOWER SPRINKLER PIPING - 10	11/18/91	12/2/91	11/22/91	12/6/91
81	COMP INSTL SECT A ABOVE FLOOR SECURITY & LIFE SAFETY CONDUIT & FEEDERS - 10	11/18/91	12/2/91	11/22/91	12/6/91
82	ERECT SECT A INT MASONRY WALLS	11/19/91	11/19/91	12/4/91	12/4/91
83	PART INSTL SECT A HARD SOFFIT & FASCIA SUSP & FRAMING - 5	11/20/91	11/26/91	11/27/91	12/4/91
84	PART INSTL SECT A INT & PERIM STUDS & IN WALL WORK - 10	11/20/91	12/4/91	11/20/91	12/4/91
85	COMP INSTL SECT A ABOVE FLOOR SHEET METAL DUCTWORK - 12	11/20/91	12/6/91	11/20/91	12/6/91
86	COMP INSTL SECT A ABOVE FLOOR ELECT CONDUIT & FEEDERS - 12	11/20/91	12/6/91	11/20/91	12/6/91
87	COMP INSTL EXT STOREFRONT & ENTRY FRAMING - 5	11/25/91	12/2/91	11/25/91	12/2/91
88	PART GLAZE EXT STOREFRONT & ENTRIES - 5	11/25/91	12/2/91	11/25/91	12/2/91
89	COMP GLAZE EXT STOREFRONT & ENTRIES - 5	12/3/91	12/9/91	12/3/91	12/9/91
90	PART INSTL SECT B ABOVE FLOOR MECH PIPING - 8	12/3/91	12/12/91	12/11/91	12/20/91
91	PART INSTL SECT B UPPER & LOWER SPRINKLER PIPING - 8	12/3/91	12/12/91	12/11/91	12/20/91
92	PART INSTL SECT B ABOVE FLOOR SECURITY & LIFE SAFETY CONDUIT & FEEDERS - 8	12/3/91	12/12/91	12/11/91	12/20/91
93	INSTALL REVOLVING DOOR HOUSING AND DOOR & GLAZE - 15	12/3/91	12/23/91	12/3/91	12/23/91
94	COMP INSTL SECT A HARD SOFFIT & FASCIA SUSP & FRAMING - 5	12/9/91	12/13/91	12/9/91	12/13/91
95	PART INSTL SECT B ABOVE FLOOR SHEET METAL DUCTWORK - 10	12/9/91	12/20/91	12/9/91	12/20/91
96	PART INSTL SECT B ABOVE FLOOR ELECT CONDUIT & FEEDERS - 10	12/9/91	12/20/91	12/9/91	12/20/91
97	COMP INSTL SECT A INT & PERIM STUDS & IN WALL WORK - 10	12/9/91	12/20/91	12/12/91	12/26/91
98	COMP INSTL SECT B ABOVE FLOOR MECH PIPING - 8	12/13/91	12/24/91	12/26/91	1/7/92
99	COMP INSTL SECT B UPPER & LOWER SPRINKLER PIPING - 8	12/13/91	12/24/91	12/26/91	1/7/92
100	COMP INSTL SECT B ABOVE FLOOR SECURITY & LIFE SAFETY CONDUIT & FEEDERS - 8	12/13/91	12/24/91	12/26/91	1/7/92

	activity	early start	early finish	late start	late finish
101	PART INSTL SECT B HARD SOFFIT & FASCIA SUSP & FRAMING - 5	12/23/91	12/30/91	12/23/91	12/30/91
102	PART INSTL SECT B INT & PERIM STUDS & IN WALL WORK - 7	12/23/91	1/2/92	12/27/91	1/7/92
103	COMP INSTL SECT B ABOVE FLOOR SHEET METAL DUCTWORK - 10	12/23/91	1/7/92	12/23/91	1/7/92
104	COMP INSTL SECT B ABOVE FLOOR ELECT CONDUIT & FEEDERS - 10	12/23/91	1/7/92	12/23/91	1/7/92
105	PART INSTL SECT C ABOVE FLOOR MECH PIPING - 8	12/26/91	1/7/92	1/14/92	1/23/92
106	PART INSTL SECT C UPPER & LOWER SPRINKLER PIPING - 8	12/26/91	1/7/92	1/14/92	1/23/92
107	PART INSTL SECT C ABOVE FLOOR SECURITY & LIFE SAFETY CONDUIT & FEEDERS - 8	12/26/91	1/7/92	1/14/92	1/23/92
108	COMP INSTL SECT B HARD SOFFIT & FASCIA SUSP & FRAMING - 5	1/8/92	1/14/92	1/8/92	1/14/92
109	COMP INSTL SECT B INT & PERIM STUDS & IN WALL WORK - 7	1/8/92	1/16/92	1/15/92	1/23/92
110	COMP INSTL SECT C ABOVE FLOOR MECH PIPING - 8	1/8/92	1/17/92	1/30/92	2/10/92
111	COMP INSTL SECT C UPPER & LOWER SPRINKLER PIPING - 8	1/8/92	1/17/92	1/30/92	2/10/92
112	COMP INSTL SECT C ABOVE FLOOR SECURITY & LIFE SAFETY CONDUIT & FEEDERS - 8	1/8/92	1/17/92	1/30/92	2/10/92
113	PART INSTL SECT C ABOVE FLOOR SHEET METAL DUCTWORK - 12	1/8/92	1/23/92	1/8/92	1/23/92
114	PART INSTL SECT C ABOVE FLOOR ELECT CONDUIT & FEEDERS - 12	1/8/92	1/23/92	1/8/92	1/23/92
115	PART INSTL SECT C HARD SOFFIT & FASCIA SUSP & FRAMING - 5	1/24/92	1/30/92	1/24/92	1/30/92
116	PART INSTL SECT C INT & PERIM STUDS & IN WALL WORK - 5	1/24/92	1/30/92	1/24/92	1/30/92
117	COMP INSTL SECT C ABOVE FLOOR SHEET METAL DUCTWORK - 12	1/24/92	2/10/92	1/24/92	2/10/92
118	COMP INSTL SECT C ABOVE FLOOR ELECT CONDUIT & FEEDERS - 12	1/24/92	2/10/92	1/24/92	2/10/92
119	COMP INSTL SECT C HARD SOFFIT & FASCIA SUSP & FRAMING - 5	2/11/92	2/17/92	2/11/92	2/17/92
120	COMP INSTL SECT C INT & PERIM STUDS & IN WALL WORK - 5	2/11/92	2/17/92	2/11/92	2/17/92

Sunday, September 1, 91



1. *Grand Casino Hinckley - Hinckley, Minnesota*
2. *Meeting in KA office*
3. *By Ralph J. Stephenson*
4. *Those attending*
 - 4.1. *Larry Oestenstad - Project Manager*
 - 4.2. *Dave Stolts - Project Superintendent*
 - 4.3. *Ralph J. Stephenson - Consultant*
5. *Discussion re underfloor electrical duct*
 - 5.1. *Proposed locations of underfloor duct or other electrical floor system*
 - 5.1.1. *Main gaming area*
 - Area of underfloor duct - about 45,000 square feet
 - Lineal feet of underfloor duct - 20,000 lineal feet
 - 5.1.2. *Bingo area - no information on this now*
 - Area of underfloor duct - no information
 - Lineal feet of underfloor duct - no information
 - 5.2. *Advantages of underfloor duct*
 - 5.2.1. *Flexibility in relocating slot machines*
 - 5.2.2. *Flexibility in expanding slot machine function into bingo area*
 - 5.2.3. *Frequency of outlet locations possible*
 - 5.2.4. *Could use roll carpeting or squares*
 - 5.2.5. *Do not need to purchase overrun amounts to patch carpet*
 - How to patch carpet?
 - 5.2.6. *Proven product*
 - 5.2.7. *Monuments easily available?*
 - 5.3. *Disadvantages of underfloor duct*
 - 5.3.1. *Difficult to level and set in floor work during slab pour*
 - 5.3.2. *Reduces rate of concrete placement over conventional slab*
 - 5.3.3. *Exposes finish concrete floor & underfloor duct plates to construction traffic & potential damage*
 - 5.3.4. *Requires good finish for floor slab to lay carpet*
 - 5.3.5. *With roll carpet, difficult to mark & patch revised outlet areas - how to patch roll carpet*
 - 5.4. *Alternatives to underfloor duct*
 - 5.4.1. *Base floor slab with raised floor system*
 - Advantages
 - Allows use of carpet squares for easier patching
 - Gives complete locational flexibility for locating outlets
 - Permits rough finish on slab on grade
 - Allows faster placement of slab on grade
 - Fewer potential weather restraints than with underfloor duct
 - Allows additional below floor services to be installed
 - Disadvantages
 - Requires both a slab on grade & a supported floor
 - Increased capital cost ?
 - Does not take roll carpeting
 - Potential problem getting monuments
 - 5.5. *Cost considerations*
 - 5.5.1. *With carpet sq*
 - 5.6. *Miscellaneous*
 - 5.6.1. *With carpet squares need to buy additional amounts of 15 to 25% for owner storage*

9:55:58 AM - Tuesday, August 27, 1991

5.6.2. *Must not use a patterned carpet square that requires special alignment of replacement squares*

5.6.3. *Should allow for additional monuments for ower storage*