General Electric Financial Assurance Call Center
Lynchburg, Virginia

Ralph J. Stephenson, P.E.
Consulting Engineer
May 7, 1999

Monitoring report #1: General Electric Financial Assurance Call Center

Dates of monitoring: Tuesday and Wednesday May 4 and 5, 1999 (wd 342 and 343)

Key dates:

Starting date: No later than March 29, 1999 (wd 316)

Building #2

- August 30, 1999 P.M. (wd 425) - Substantial completion.
- September 9, 1999 P.M. (wd 432) - Final completion.
- September 20, 1999 A.M. (wd 438) to October 8, 1999 P.M. (wd 453) - Owner move in.

Building #1

- September 29, 1999 P.M. (wd 446) - Substantial completion.
- October 10, 1999 P.M. (wd 453) - Final completion.
- October 11, 1999 A,M. (wd 453) to October 29, 1999 P.M. (wd 468) - Owner move-in.

Network models in effect:

- Issue #1 - sheet #1 - Building #1 - dated April 6, 1999 (wd 322)
- Issue #1 - sheet #2 - Building #2 - dated April 6, 1999 (wd 322)
- Issue #1 - sheet #1 - Procurement - dated April 6, 1999 (wd 322)

Those attending meetings:

- Thomas Asch - Project Manager - Woolfolk Construction Company
- Steve Greene - Associate Vice President - Facilities Director - General Electric Financial Assurance
- Henry Shelton - Field Superintendent - Woolfolk Construction Company
- Ralph J. Stephenson, P.E. - Consultant

Actions taken:

- Inspected project with Mr. Greene.
- Monitored project progress with Mr. Green, Mr. Shelton and Mr. Asch.
- Reviewed networks for need to update and reissue.
- Updated Sheet #2, Building #2, issue #1 to issue #2 dated May 4, 1999 (342)
- Prepared monitoring report to Mr. Greene.

date printed: 5/7/99

Building #2

Above ceiling installation of sheet metal ductwork has just begun and some fire protection piping has been installed at Building #2. Sheet metal ductwork was due to begin on a late start of April 27, 1999 (wd 337) and so currently lags the issue #1 network model by about five working days. We reduced this lag in the updated network model, issue #2 dated May 4, 1999 (wd 342) by realigning the rough work durations in light of Building #1 experiences with similar trades.

Perimeter wall demolition and window replacement is in work, and is currently about 85% complete. It has been found necessary to cover the insulation in perimeter walls with dry wall extending to the underside of the metal deck. This extension has started and appears to be proceeding well.

Due to the critical nature of perimeter wall work and long window delivery lead times, Mr. Shelton and Mr. Asch of Woolfolk have revised the sequencing of window installation so interior gyp board can be installed ahead of the windows. This revision has been reflected in the Issue #2 network model, as has the extension of drywall to the metal deck.

Work on demolition of the concrete floor slab and installation of underground utilities has fallen behind desired late starts and finishes shown in the Issue #1 network model. The lag is about 13 working days but can be generally eliminated by use of float time currently available in some subsequent activities. However it is imperative that this underground work and patching be brought to completion just as quickly as possible to allow ceiling suspension and grid to proceed by late June, 1999.

Building #1

Above ceiling rough sheet metal is currently meeting late starts and finishes and is proceeding well within the planned date ranges. Above floor rough sprinkler piping and electrical installation is currently meeting early starts and finishes and is also moving well.

As of May 4, 1999 (wd 342) perimeter wall masonry demolition is about 80% complete and meeting early starts and finishes. Perimeter wall furring and insulation is about 20% complete and meeting late start and late finish dates.

Demolition of existing floor slabs for installation of underground utility work

currently lags late starts and late finishes. The current plan of work reflected an operational desire to get the areas of heavy underground utilities ready for installation of finish work as soon as possible to avoid interference with above floor work. I suggest the project team carefully monitor underground utility progress to insure it will not cause delays to above floor interior finishes, particularly installation of ceiling work and raised floor work.

Metal stud installation is in work at the second floor and it appears that interior finish work should be able to proceed there in the near future without delay. We have not prepared a detailed network model for the second floor, and should reevaluate the need for a more detailed plan of work at our next planning session.

Overall, remodeling of Building #1 is currently in fair condition. Care must be taken however to insure that as Building #2 interior finishes proceed, particularly ceilings and raised floor installation, that adequate manning of similar trades in Building #1 is maintained at levels adequate to meet target completion dates.

The key to maintaining proper project progress is to closely and continuously expedite deliveries to the job site for both buildings, and to maintain good support management and direction of the sub contract trades.

Procurement

Information on procurement of materials and equipment was not fully available at this session but is presently being followed by Mr. Asch. Submittals are being processed promptly by Alan Burchette of Dewberry & Davis. It is essential to track all submittals continually and in detail. Of particular importance is to keep shop drawing resubmittals to a minimum.

Procurement items presently in work include the following items for Building #2. Building #1 delivery requirements will be similar.

- ✓ Exterior windows - very critical to completion of perimeter walls. Due on site 05/25/99 (wd 358)
- As of 6/22/99 ? Entry framing and glass - important to maintaining proper security as interior work proceeds. Due on site 06/30/99 (wd 383)
- 7/20/99 Switch gear - Submittals are in and being reviewed by the design team. Due on site 08/04/99 (wd 407)
- 8/12/99 Air handling equipment - Submittals are in and being reviewed by the design team.
- on job Hollow metal frames - Must be closely managed to insure proper fit with

hardware. Due on job 07/21/99 (wd 397)

- Cooling tower - Demolition of the existing tower has not started as yet. New air system will be required to maintain proper temperature and humidity for sensitive interior materials and finishes. Due on job 07/21/99 (wd 397)
- Ceramic tile - This is normally a long lead material. Ceramic is due to start in late May or early June, 1999. Due on job 06/15/99 (wd 372). Watch carefully.
- Fixtures, furniture and equipment - by owner - Apparently there is no problem with procurement at present. Lead time is very short and the owner does not want to order before being able to receive and handle properly at job site.
- Security system components - Hold delivery at 06/10/99(wd 369).
- Carpet tile - Due on job 08/04/99 (wd 407).
- Raised floor - Due on job 07/28/99 (wd 402).
- Toilet partitions - Due on job 07/14/99 (wd 392).
- Food service equipment - Due on job 07/15/99 (wd 393). If food service hoods are required, their installation must be meshed closely with installation of ceiling suspension.
- Boilers - Due on job 07/02/99 (wd 385).
- Control system components - Due on job 06/14/99 (wd 371).
- Light fixtures - Due on job 06/11/99 (wd 370).
- Quarry tile - Due on job 06/14/99 (wd 371).

The above dates are tentative targets that at present fit the installation requirements of the various items. However the dates must be validated regularly to insure they are properly timed with field work so as to prevent damage to installed work.

Summary

Progress at both buildings is currently fair with some lag being encountered in overhead rough work and in concrete and underground work. Perimeter wall remodeling is well in work. Deliveries are of prime concern at present and the procurement expediting needs to be continuous and closely monitored.

The project duration is short enough so that early planning for the close out of the project starts now. In light of this I have enclosed a preliminary close out check list with this report for use as desired by the project team. We shall review this check list at subsequent monitoring and planning sessions to insure that the project work can be closed out properly as the job approaches substantial completion and turn over to the owner.

This report is being sent to Mr. Steve Greene of General Electrical Financial

Management for his use and distribution to others as he desires. I shall be in touch shortly with Mr. Greene to confirm our next monitoring and planning date.

Sincerely yours,

Enclosure: Close out check list

Ralph J. Stephenson, P.E.

CLOSE OUT CHECK LIST

Ralph J. Stephenson, P.E. Consulting Engineer
323 Hiawatha Drive
Mt. Pleasant, Michigan 48858
ph 517 772 2537

Date: 5/7/99 Page 1

	Action	Who does?	Who's responsible?	Who has the authority?	AREA A	B	C	D	E
1	01 Prepare a construction record package. This set of documents was formerly called the as built drawing set. (contractor)								
2	02 Obtain, where appropriate, a certificate of occupancy, or equivalent document, from the local building department, or other regulatory and enforcement agency. (owner, architect/engineer, contractor)								
3	03 Prepare, distribute and have approved by the owner, the architect/engineer and the contractors, a punch out procedure. (contractor, architect/engineer, owner)								
4	04 Punch out the project and complete the punch list requirements within an agreed upon time frame. (architect/engineer, contractor, owner)								
5	05 Prepare, submit and accept the operating and maintenance manuals for the total project. (contractor, owner)								
6	06 Clear final payments on the project and obtain proper waivers of lien. (contractor, owner)								
7	07 Provide the owner with a proper set of construction documents for reference use. (contractor, owner)								
8	08 Collect and store job logs, diaries, daily reports, test reports and all other documentation generated by the job activities. (contractor, owner, architect/engineer)								
9	09 Bring all meeting minutes and record files up to date so as to permit easy use and retrieval of needed information. (contractor, owner, architect/engineer)								
10	10 Collect and bind all official and unofficial project photos. (contractor, owner, architect/engineer)								
11	11 Collect and record all project network plans, schedules and bar charts by issue number, subject and date. (contractor, owner)								
12	12 Close out and store all correspondence and other record files. (contractor, owner, architect/engineer)								
13	13 Assemble and properly store all shop drawings and other job related submittals. (contractor, owner, architect/engineer)								
14	14 Request the architect/engineer of record to make an inspection resulting in the granting of a certificate of substantial completion. This may be required to to obtain a certificate of occupancy. (contractor, owner)								

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	Action	Who does?	Who's responsible?	Who has the authority?	AREA A	B	C	D	E
15	15 Plan and implement grand opening or preview festivities for major team members, company principals and others contributing to the planning, design and construction of the facility. (owner, contractor)								
16	16 Each party should conduct their own job critique where responsible parties to the project meet and identify points of strength and weakness in carrying out the job. One major product of this critique should be a set of recommendations for performance improvement, and documentation of the problems encountered and how they were resolved. (contractor, owner, architect / engineer)								
17	17 Relinquish, or account for, all client owned tools, spare parts, and extra stocks of materials, rightfully the property of the owner. (contractor, owner)								
18	18 Provide the owner copies of all releases, including final inspection certificates, occupancy permits, operating certificates, health department approvals and permits, and all other similar documents to allow the owner to occupy the building under full understanding of the conditions of the turnover. (contractor, owner, architect/engineer)								
19	19 Label all electrical panel boxes, plumbing lines, valves and equipment as required for proper operation and maintenance. (contractor)								
20	20 Provide all keys and keying schedules. (contractor, owner)								
21	21 Submit a final statement of accounting, as required, to the owner and the architect/engineer. (owner, contractor, architect/engineer)								
22	22. Obtain, prepare or issue a final change order reflecting adjustments to the contract sums not previously made by change orders. (contractor, architect/engineer, owner)								
23	23 Send sincere thank you letters as appropriate to the owner, to the design team and to various contractors involved on the job. (contractor, architect/engineer)								
24	24 Provide the owner a complete list of contractors and vendors participating in the job and indicating their installation responsibilities. (contractor)								
25	25 Insure the owner is placed on the marketing call list, mailing list and other action tickler files as appropriate. (contractor, architect/engineer)								
26	26 Arrange for such open house activities as may be desired or required (owner, contractor, architect/engineer)								
27	27 Insure that your company identification is shown somewhere in the building if permitted. (owner, a/e and contractor)								
28	28 Insure the project is as clean or better than called for in the specifications when your staff moves off the job. Don't lose the good will of the owner by leaving him a dirty job. (contractor)								

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	Action	Who does?	Who's responsible?	Who has the authority?	AREA A	B	C	D	E
29	29 Establish and approve the start of all warranty and guarantee periods for all material and equipment on the job prior to owner making the facility operative. (owner, contractor, architect/ engineer)								
30	30 Properly train and turn over the facility to the owner's representatives								
31	31 Prepare and submit to the owner a construction record package. This package should contain the following: (contractor)								
32	31a -- The construction record set referred to in action #10 above.								
33	31b -- Specific warranties required by the specifications								
34	31c -- Workmanship or maintenance bonds required								
35	31d -- Maintenance agreements called for by the specifications								
36	31e -- Damage and settlement surveys of the site and the facilities								
37	31f -- Final property surveys of the site.								
38	32 Submit a final billing to the owner containing a list of all incomplete items and a properly assigned cost to each item. (contractor)								
39	33 Advise the owner of any insurance changes over existing or past requirements or dates. (contractor, architect/engineer)								
40	34 Complete all pre start up testing, run in and instruction along with submission of operating and maintenance manuals. (contractor, owner). Note: All pre start up and start up requirements should be fully described in the contract documents and clearly referenced to the warranty period								
41	35 Submit final meter readings for utilities, and measured records of stored fuel at the time of substantial completion. (contractor)								
42	36 Submit, to owner if required, the consent of surety to final payment (contractor)								

CLOSE OUT CHECK LIST

Ralph J. Stephenson, P.E. Consulting Engineer
323 Hiawatha Drive
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ph 517 772 2537

	Action	Who does?	Who's responsible?	Who has the authority?	AREA A	B	C	D	E
43	37 Have final inspection made by an experienced exterminator to rid the job of rodents, insects or other pests. (contractor, owner)								
44	38 Read the full contract document requirements (drawings, specifications, and contract) for closing out the job. (contractor, owner, architect/engineer)								
45	39 Define project conditions to be met for obtaining partial and total certificates of occupancy								
46	40 Define project conditions to be met for substantial completion.								
47	41 Establish and publish construction record set preparation procedures								
48	42 Establish and publish operating and maintenance manual (OMM) submittal procedures								
49	43 Establish and publish warranty procedures								
50	44 Follow up on corrective work required during warranty period								
51	45 Obtain certificates of substantial completion								
52	46 Obtain guarantees								
53	47 Obtain warranties								
54	48 Plan and implement training programs as required								
55	49 Turn over project to client								

Schedule:

- Ceiling grid to start: 6/15/99
- Building 2 Plumbing to be complete by 6/17/99
  Note: Plumbing causing delays for other trades
- Drywall Behind 7 days in building 2 and behind 15 days in building 1
  Note: Drywall causing delays for other trades.

Subcontractor superintendents to review and update schedule with Henry Shelton every Monday of each week.

Revised to update activities!
Lead time procurement date - May 18, 1999

1. 02000 - Check on telephone cable characteristics to buildings - fiber optic?
2. 08000 - Aluminum entries 5/25/99
3. 08000 - Glass – 6/7/99
4. 08000 - Hardware -
5. 08000 - Hollow metal doors 6/30/99
6. 08000 - Hollow metal frames 5/22/99
7. 08000 - Windows 5/24/99
8. 09000 - Carpet tile 6/21/99
9. 09000 - Ceramic tile – 6/17/99
10. 09000 - Quarry tile – 6/17/99
11. 10000 – De-mountable partitions - ? KI Industries -Shop drawings
12. 10000 - Raised floor – 7//6/99
13. 10000 - Toilet partitions - o.k.
14. 11000 - Food service equipment 6/15/99 - exhaust installed
15. 15000 - Air handling units 7/15/99 – RTU's 6/26/99
16. 15000 - Boilers 6/21/99
17. 15000 - Chillers – On site
18. 15000 - Cooling tower ship 6/18/99
19. 15000 - HVAC control systems
20. 15000 – 25 fan powers VAV – ship on 7/13/99
21. 15000 – 105 single box VAV – received on 6/7/99
22. 15000 - Linear diffusers 6/21/99
23. 15000 - Plumbing fixtures - o.k.
24. 16000 - Electrical boxes - o.k.
25. 16000 - Electrical switchgear – delivery on 8/12/99
26. 16000 - Light fixtures – See below
27. 16000 - Security systems – set up for scheduled installation
28. 16000 - Surveillance systems - set up for scheduled installation
29. 16000 - Telephone switchgear – 8/27/99
30. 16000 - Transformers 6/15/99

Light Fixtures:

Description:	Ship Date:	Manufacturer/Description:
Types A, A1, A2, C, K, M, M1	6/21/99	Columbia/Fluorescent
Types A1-Dim, A2-Dim	6/25/99	Columbia, Fluor./Dimming
Types B, D, D1	6/11/99	Columbia/Parabolic Strip
Types J, J1, U, V	6/10/99	GE/Low Bay/Wall Mount
Type L	6/28/99	GE/ 2 x 2 Fluorescent

Light Fixtures, Continued:

Description:	Ship Date:	Manufacturer/Description:
Types E, E1	6/25/99	Prescolite Exits
Types G, G1	Rec'd on site	Prescolite MH Downlights
Type H	6/25/99	Prescolite Emergency Lights
Types N & P	6/28/99	Prescolite CF Downlights
Type F	7/15/99	Concealite Emergency Light

Switchgear:

Description:	Ship Date:	Manufacturer/Description:
Outdoor Switchboard	8/12/98	General Electric
Switchboard "1MDP/2MDP"	7/14/99	General Electric
Motor Control Center "MCC1"	7/16/99	General Electric
Panelboards	6/10/99	General Electric
Transformers	6/15/99	General Electric
Disconnects	6/10/99	General Electric
Starters	Rec'd on site	General Electric
Fuses	6/2/99	General Electric
Bus Ducts	7/10/99	

RFI's:

- WCI refrigerator / icemaker size 6/4/99
- Omni Electrical RFI No.23 dated 6/7/99
- Omni Electrical RFI No.34 dated 6/7/99

Problems:

1. Switch gear delivery – 8/12/99
2. Damage to new work in place by different trades
3. Clean-up every Tuesday

Light Fixtures

Type A Ship 501. 6/22/99 BLDG 2

A1

Ship 501. 6/28/99 BLDG 1

Ralph J. Stephenson, P.E.
Consulting Engineer

Monitoring Report #2: General Electric Financial Assurance Call Center

Dates of monitoring: Tuesday and Wednesday June 22 and 23, 1999 (wd 376 & 377)

Key dates:

Starting date: No later than March 29, 1999 (wd 316)

Building #2

- August 30, 1999 P.M. (wd 425) - Substantial completion.
- September 9, 1999 P.M. (wd 432) - Final completion.
- September 20, 1999 A.M. (wd 438) to October 8, 1999 P.M. (wd 453) - Owner move in.

Building #1

- September 29, 1999 P.M. (wd 446) - Substantial completion.
- October 10, 1999 P.M. (wd 453) - Final completion.
- October 11, 1999 A,M. (wd 453) to October 29, 1999 P.M. (wd 468) - Owner move-in.

Network models in effect:

- Issue #3 - sheet #1 - Building #1 interior work - dated June 22, 1999 (wd 376)
- Issue #3 - sheet #2 - Building #2 interior work - dated June 22, 1999 (wd 376)

Those attending meetings:

- Thomas Asch - Project Manager - Woolfolk Construction Company
- Steve Greene - Associate Vice President - Facilities Director - General Electric Financial Assurance
- Henry Shelton - Field Superintendent - Woolfolk Construction Company
- Ralph J. Stephenson, P.E. - Consultant

Actions taken:

- Inspected project with Mr. Greene.
- Monitored project progress with Mr. Green, Mr. Shelton and Mr. Asch.
- Reviewed networks for need to update and reissue.
- Updated Sheet #1, Building #1, issue #1 to issue #3 dated June 22, 1999 (376)
- Updated Sheet #2, Building #2, issue #2 to issue #3 dated June 22, 1990 (376
- Prepared monitoring report to Mr. Greene.

Building #2

Above ceiling installation of rough sheet metal ductwork is nearly complete except for some fan powered variable volume units. The remaining units are scheduled for delivery on the pm of July 14, 1999 (wd 392). This delivery date imposes a projected lag on Building #2 of 21 to 22 working days. In the issue #3 updated network dated June 22, 1999 (wd 376) the lag in sheet metal ductwork installation was reduced by revising some of the restraints on ceiling grid to a later portion of the tile installation.

Above floor rough piping, except for connections to the variable volume boxes, is currently about 9 working days behind late starts and late finishes. Above floor rough electrical conduit and life safety cabling is currently complete.

Perimeter wall demolition and window replacement is substantially complete and has generally met targets between early and late starts and finishes. Installation of interior perimeter wall gyp board currently lags the issue #2 network However this lag was reduced in the updated network, issue #3, by revising the logic relationships of perimeter walls and wall finishes to ceiling installation.

Interior masonry work, interior underground utility work and concrete patching is substantially complete. Interior wall work on the raised concrete floors is in work and is about 14 working days behind late starts and late finishes. Some logic relationships between prime painting and ceiling work were revised in the updated network eliminating this current lag on interior work at the raised floor work. At toilet rooms on raised floors, ceramic tile is in progress and is currently meeting early start and early finish targets.

Cooling tower components are due on the job the pm of July 21, 1999 (wd 397) and will be erected as they arrive on site.

Taking into account the current status of the project, and the critical need to meet a final completion date of the pm of September 9, 1999 (wd 432) we updated the current network model using presently projected material and equipment delivery dates. It appears that by using an increased working day per week schedule, starting immediately and coupling this work with the revised logic in the network issue #3 dated June 22, 1999 (wd 376), the project team will be able to meet a final contract completion date of the pm of September 9, 1999(wd 432).

Procurement has been, and remains, a major difficulty on the project. Field

operations have also tended to move past late starts and late finishes on many activities. This slippage of deliveries and of field work must be halted quickly if the project is to meet current contract dates.

Building #1

Above ceiling sheet metal ductwork at building #1 has also been adversely affected by projected late delivery of the fan powered VAV units. By revising some restraints on ceiling installation from the overhead rough work, and from other selected activities, some major lags were able to be reduced. This allowed the project team to maintain a projected contract date for completing work by the pm of October 10, 1999 (wd 453).

Procurement

Information on procurement of materials and equipment was not fully available at this session but continues to be followed closely by Mr. Asch. Submittals are being processed promptly by Dewberry & Davis. It is to be emphasized that constant close attention to delivery schedules must be maintained if current contract dates are to be met.

A detailed list of procurement items and anticipated delivery dates is presently being prepared by Mr. Asch. Some of the critical dates were available at this updating session and were incorporated into the issue #3 network models dated June 22, 1999 (wd 376).

Summary

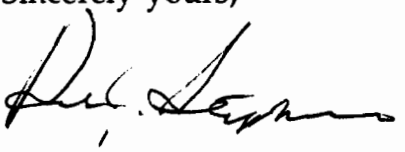
Progress at both buildings has slipped since the previous monitorings on May 4 and 5, 1999 (wd 342 and 343). A major difficulty has been the late delivery of the variable volume mixing boxes to be installed in the sheet metal ductwork system above the ceilings. These problems are being resolved as the project proceeds - however some longer work weeks will probably be needed to reestablish the work plan needed to meet current contract dates. We reviewed these needs in detail during our monitoring and updating. Mr. Greene, Mr. Shelton and Mr. Asch have reviewed the current issue #3 plans of work and will closely monitor these to insure meeting the required targets.

A copy of Sheet #2, Building 2, issue #3, dated June 22, 1999 (wd 376) was provided to Mr. Steve Greene of General Electric Financial Assurance at the job on June 23,

1999. He will print and distribute this network to the project team as required. A copy of Sheet #1, Building 1, issue #3, dated June 22, 1999 (wd 376) was printed subsequent to the meeting on June 23, 1999 and is being forwarded to Mr. Greene with this monitoring report. Mr. Green will also make further distribution of these documents as he desires.

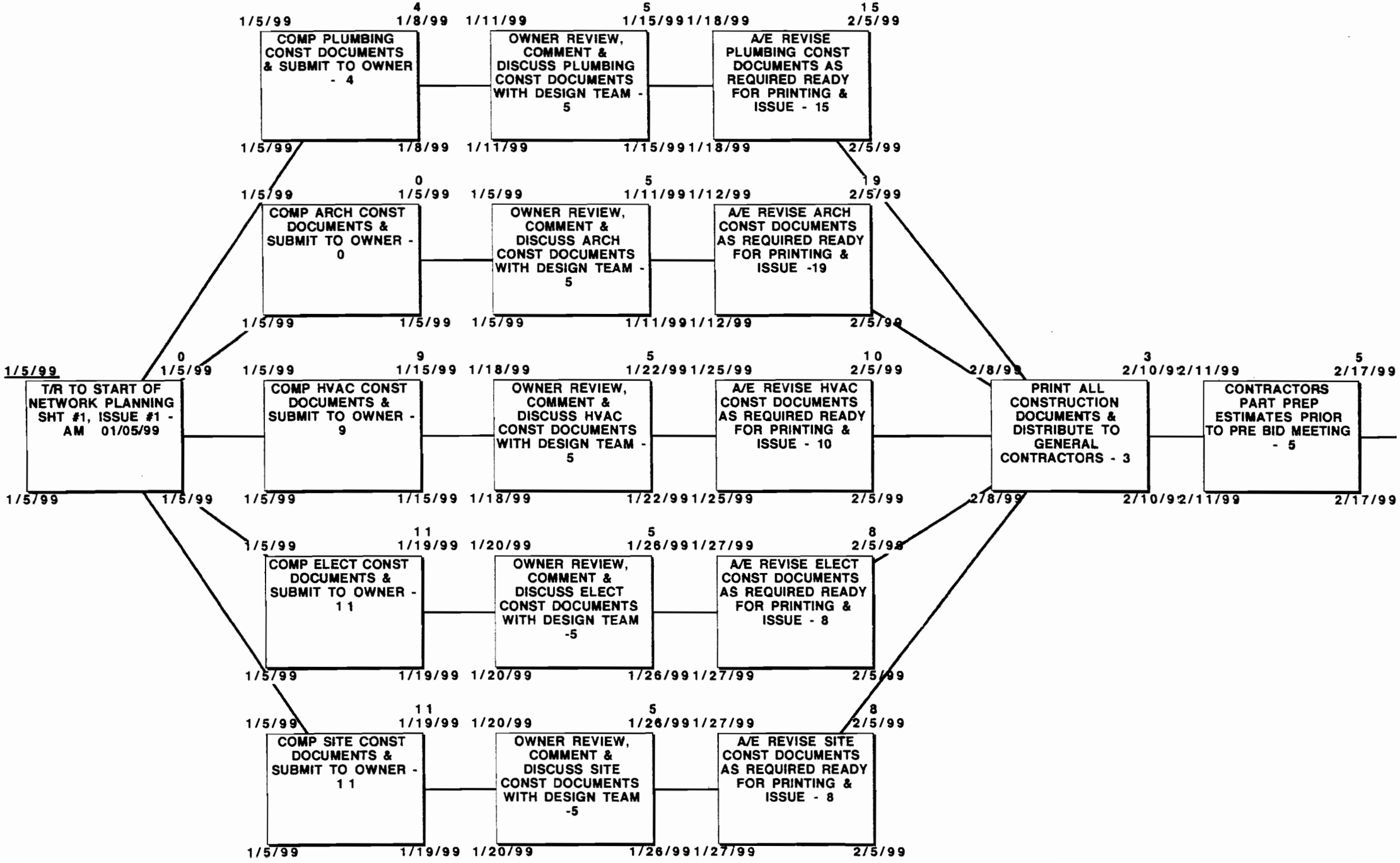
I shall plan to again monitor and update the current plans of work on August 3rd and 4th, 1999 (wd 405 and 406), and will be in touch with Mr. Greene to confirm the dates and times.

Sincerely yours,



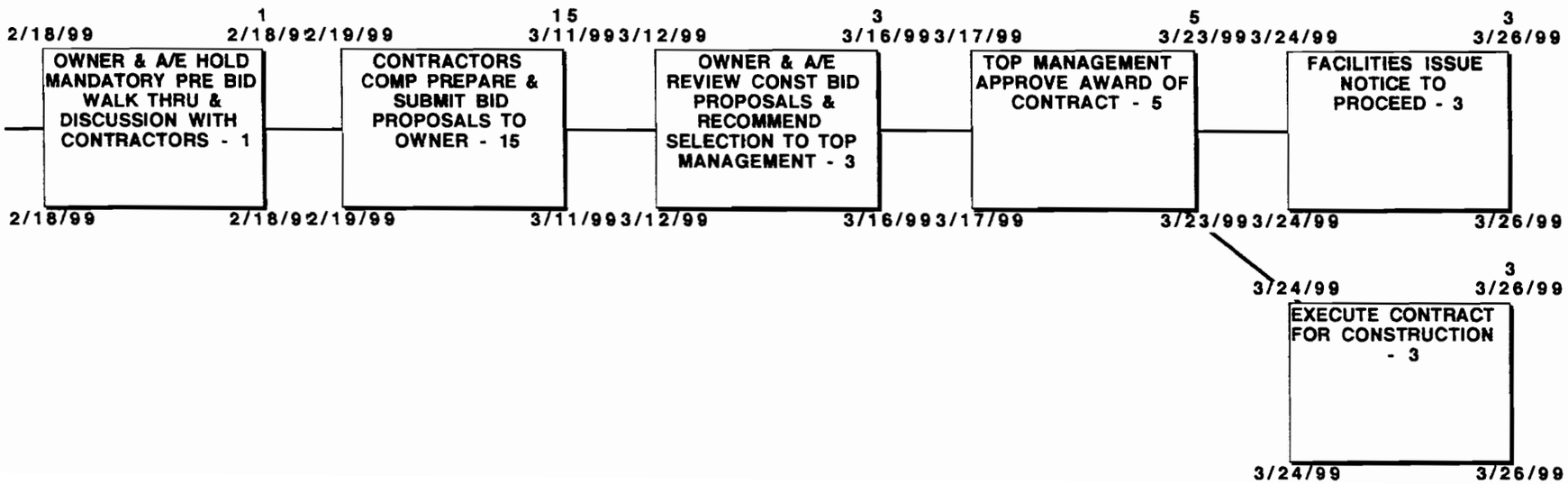
Enclosure: network model

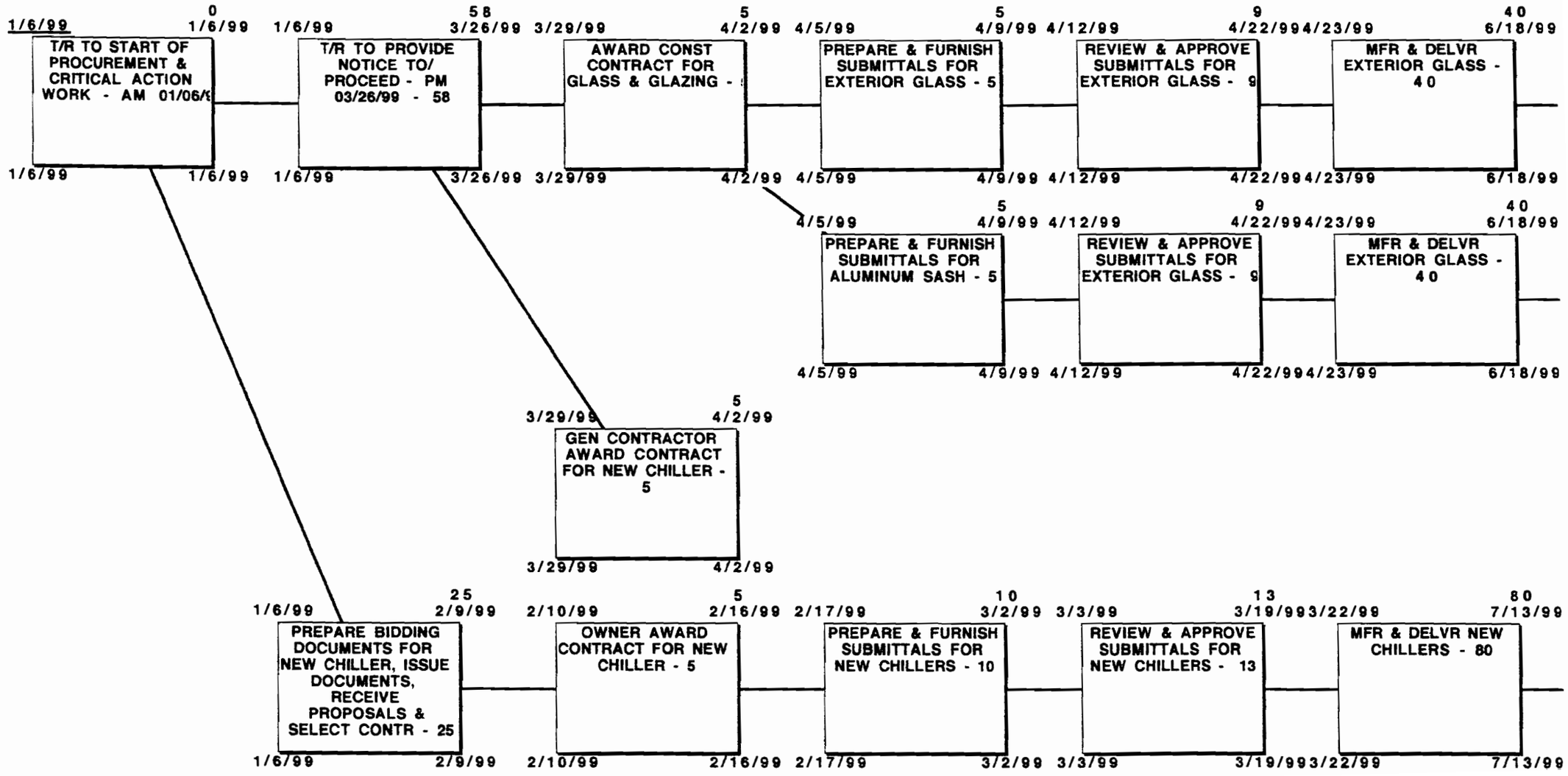
Ralph J. Stephenson, P.E.

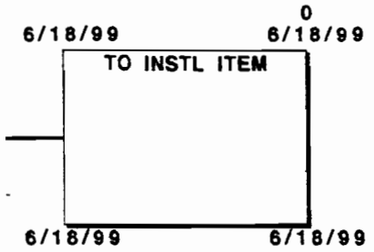

1/5/99
T/R TO START OF NETWORK PLANNING SHT #1, ISSUE #1 - AM 01/05/99
1/5/99
0
1/5/99
COMP PLUMBING CONST DOCUMENTS & SUBMIT TO OWNER - 4
1/5/99
4
1/8/99
OWNER REVIEW, COMMENT & DISCUSS PLUMBING CONST DOCUMENTS WITH DESIGN TEAM - 5
1/11/99
5
1/15/99
A/E REVISE PLUMBING CONST DOCUMENTS AS REQUIRED READY FOR PRINTING & ISSUE - 15
1/18/99
15
2/5/99
COMP ARCH CONST DOCUMENTS & SUBMIT TO OWNER - 0
1/5/99
0
1/5/99
OWNER REVIEW, COMMENT & DISCUSS ARCH CONST DOCUMENTS WITH DESIGN TEAM - 5
1/5/99
5
1/11/99
A/E REVISE ARCH CONST DOCUMENTS AS REQUIRED READY FOR PRINTING & ISSUE -19
1/12/99
19
2/5/99
COMP HVAC CONST DOCUMENTS & SUBMIT TO OWNER - 9
1/5/99
9
1/15/99
OWNER REVIEW, COMMENT & DISCUSS HVAC CONST DOCUMENTS WITH DESIGN TEAM - 5
1/18/99
5
1/22/99
A/E REVISE HVAC CONST DOCUMENTS AS REQUIRED READY FOR PRINTING & ISSUE - 10
1/25/99
10
2/5/99
COMP ELECT CONST DOCUMENTS & SUBMIT TO OWNER - 11
1/5/99
11
1/19/99
OWNER REVIEW, COMMENT & DISCUSS ELECT CONST DOCUMENTS WITH DESIGN TEAM -5
1/20/99
5
1/26/99
A/E REVISE ELECT CONST DOCUMENTS AS REQUIRED READY FOR PRINTING & ISSUE - 8
1/27/99
8
2/5/99
COMP SITE CONST DOCUMENTS & SUBMIT TO OWNER - 11
1/5/99
11
1/19/99
OWNER REVIEW, COMMENT & DISCUSS SITE CONST DOCUMENTS WITH DESIGN TEAM -5
1/20/99
5
1/26/99
A/E REVISE SITE CONST DOCUMENTS AS REQUIRED READY FOR PRINTING & ISSUE - 8
1/27/99
8
2/5/99
2/8/99
PRINT ALL CONSTRUCTION DOCUMENTS & DISTRIBUTE TO GENERAL CONTRACTORS - 3
2/10/99
3
2/11/99
CONTRACTORS PART PREP ESTIMATES PRIOR TO PRE BID MEETING - 5
2/17/99

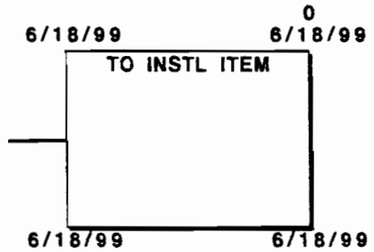
ELECTRICAL SYSTEMS TO BE REVIEWED

SECURITY
WHITE NOISE
TV SYSTEM
FIRE CONTROL
SURVEILLANCE
VOICE DATA WIRING
INTERCOM
PROPRIETARY



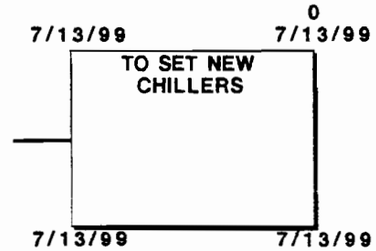

1/6/99
0
1/6/99
T/R TO START OF PROCUREMENT & CRITICAL ACTION WORK - AM 01/06/9
1/6/99
1/6/99
1/6/99
58
3/26/99
T/R TO PROVIDE NOTICE TO/ PROCEED - PM 03/26/99 - 58
1/6/99
3/26/99
3/29/99
5
4/2/99
AWARD CONST CONTRACT FOR GLASS & GLAZING -
3/29/99
4/2/99
4/5/99
5
4/9/99
PREPARE & FURNISH SUBMITTALS FOR EXTERIOR GLASS - 5
4/5/99
4/9/99
4/12/99
9
4/22/99
REVIEW & APPROVE SUBMITTALS FOR EXTERIOR GLASS - 9
4/12/99
4/22/99
4/23/99
40
6/18/99
MFR & DELVR EXTERIOR GLASS - 40
4/23/99
6/18/99
4/5/99
5
4/9/99
PREPARE & FURNISH SUBMITTALS FOR ALUMINUM SASH - 5
4/5/99
4/9/99
4/12/99
9
4/22/99
REVIEW & APPROVE SUBMITTALS FOR EXTERIOR GLASS - 9
4/12/99
4/22/99
4/23/99
40
6/18/99
MFR & DELVR EXTERIOR GLASS - 40
4/23/99
6/18/99
3/29/99
5
4/2/99
GEN CONTRACTOR AWARD CONTRACT FOR NEW CHILLER - 5
3/29/99
4/2/99
1/6/99
25
2/9/99
PREPARE BIDDING DOCUMENTS FOR NEW CHILLER, ISSUE DOCUMENTS, RECEIVE PROPOSALS & SELECT CONTR - 25
1/6/99
2/9/99
2/10/99
5
2/16/99
OWNER AWARD CONTRACT FOR NEW CHILLER - 5
2/10/99
2/16/99
2/17/99
10
3/2/99
PREPARE & FURNISH SUBMITTALS FOR NEW CHILLERS - 10
2/17/99
3/2/99
3/3/99
13
3/19/99
REVIEW & APPROVE SUBMITTALS FOR NEW CHILLERS - 13
3/3/99
3/19/99
3/22/99
80
7/13/99
MFR & DELVR NEW CHILLERS - 80
3/22/99
7/13/99





H. Especially critical items - (lead time substant more than 7 weeks)

1. 02000 - * Check on telephone cable characteristics to buildings - fiber optic?
2. 08000 - * Aluminum entries
3. 08000 - * Glass
4. 08000 - * Hardware
5. 08000 - * Hollow metal doors
6. 08000 - * Hollow metal frames
7. 08000 - * Windows
8. 09000 - * Carpet tile
9. 09000 - * Ceramic tile
10. 09000 - * Quarry tile
11. 10000 - * Demountable partitions
12. 10000 - * Raised floor - 4 to 6 weeks
13. 10000 - * Toilet partitions
14. 11000 - * Food service equipment - 8 to 10 weeks
15. 15000 - * Air handling units
16. 15000 - * Boilers
17. 15000 - * Chillers
18. 15000 - * Cooling tower
19. 15000 - * HVAC control systems
20. 15000 - * Linear diffusers
21. 15000 - * Plumbing fixtures
22. 16000 - * Electrical boxes
23. 16000 - * Electrical switchgear
24. 16000 - * Light fixtures
25. 16000 - * Security systems
26. 16000 - * Surveillance systems
27. 16000 - * Telephone switchgear
28. 16000 - * Transformers



ASSUMED SUBMITTAL TURN AROUND TIMES

	NORMAL	EXPEDITED	SUPER EXPEDITED
GENERAL CONTRACTOR LOG IN AND CHECK	1 + 2 = 3	1 + 1 = 2	1/2 + 1 = 1 1/2
GENERAL CONTRACTOR TRANSMIT TO A/E	3	1	1
A/E LOG IN AND CHECK	1 + 10 = 11	1 + 5 = 6	1 + 2 = 3
A/E TRANSMIT TO PRIME CONTRACTOR	1	1	1
GENERAL CONTRACTOR LOG IN & REVIEW	1 + 2 = 3	1 + 1 = 2	1 + 1/2 = 1 1/2
GENERAL CONTRACTOR TRANSMIT TO SUB	3	1	1
TOTALS	24 WD	13 WD	9 WD

Subtitle
Earliest Start

Duration
Earliest Finish

T/R TO START OF NETWORK PLANNING SHT #1, ISSUE #1 - AM 01/05/99

Latest Start

Latest Finish

ACTIVITY LEGEND

Issue #1 - January 5, 1999

Reserved activity

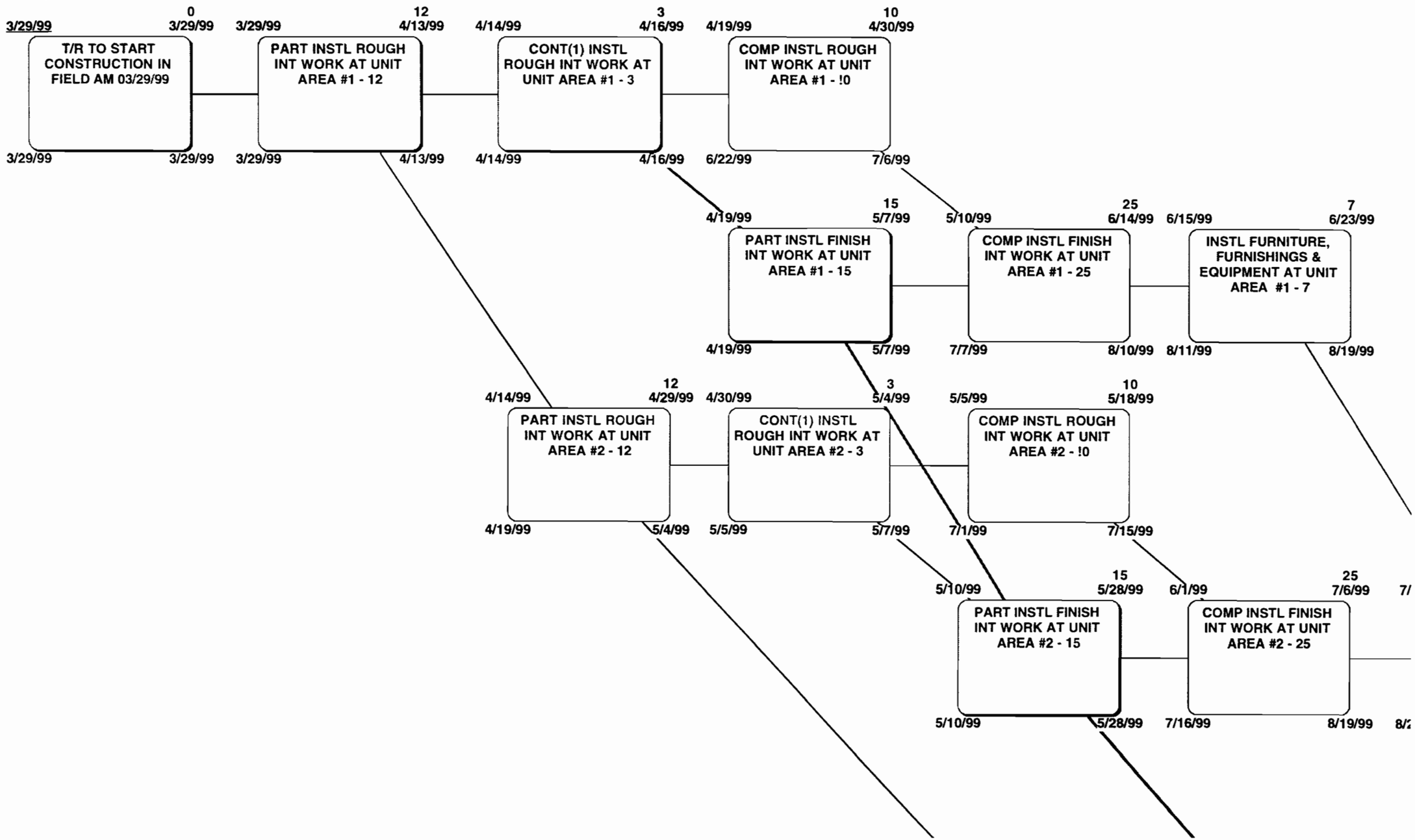
041
046
042
047
043

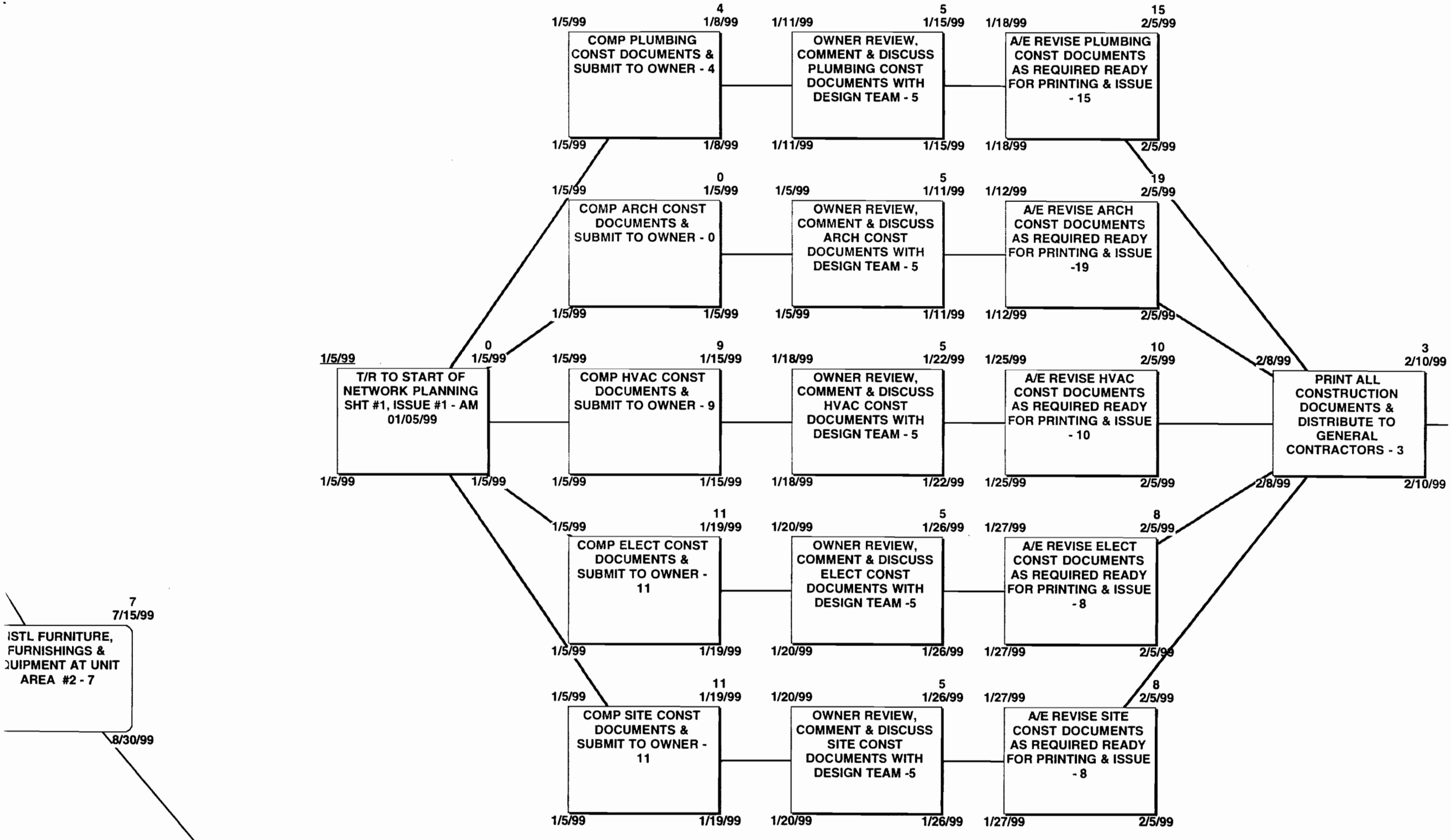
Ian
001

NETWORK MODEL FOR GENERAL ELECTRIC FINANCIAL ASSURANCE CALL CENTER - Lynchburg,Virginia

Ralph J. Stephenson, P.E.
Consulting Engineer
323 Hiawatha Drive
Mt. Pleasant,Michigan
48858

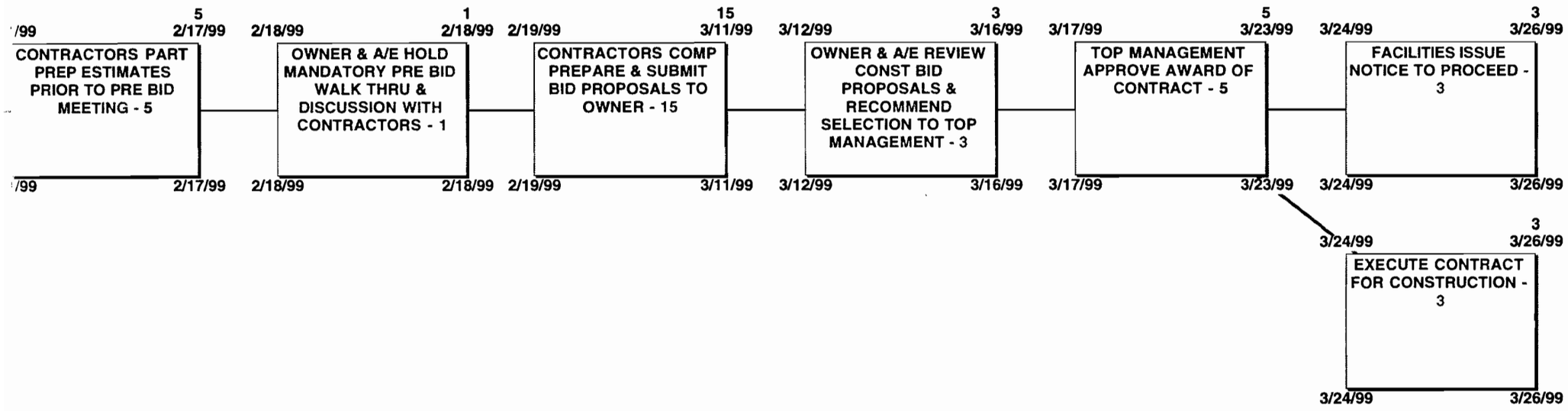
SHEET #1

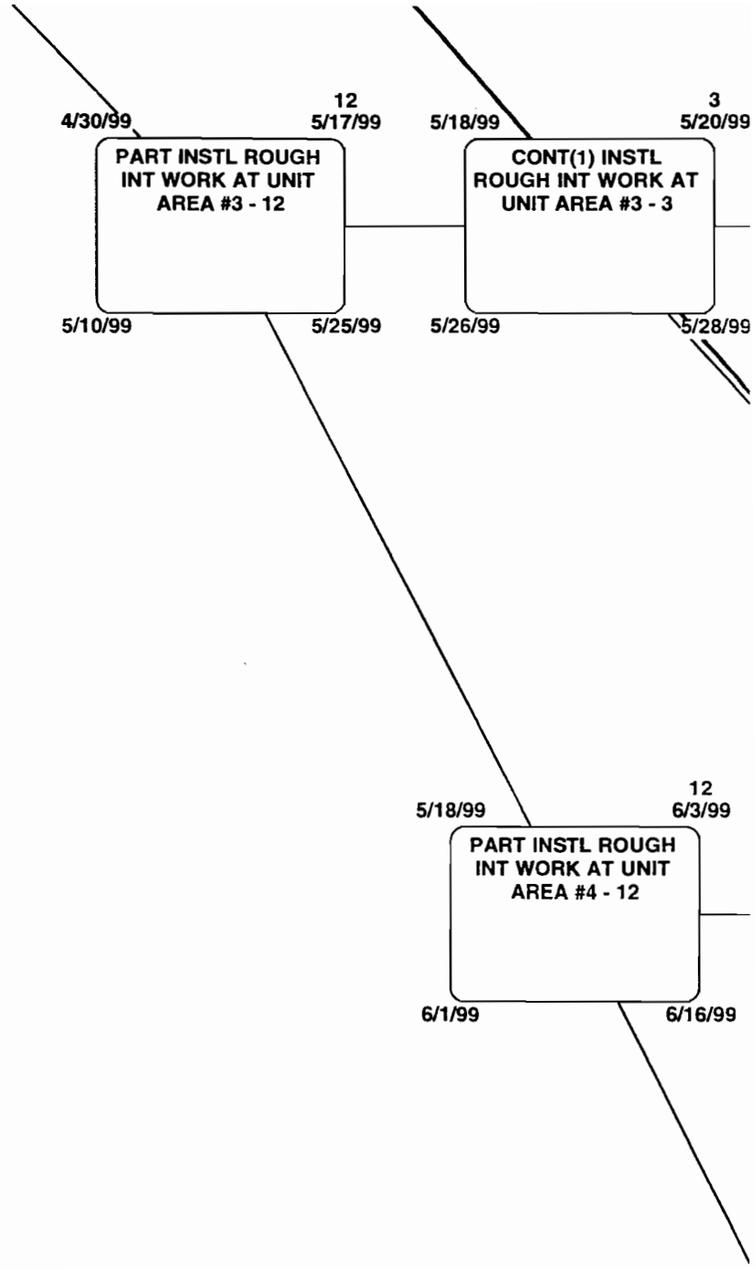

3/29/99
0
3/29/99
T/R TO START CONSTRUCTION IN FIELD AM 03/29/99
3/29/99
3/29/99
3/29/99
12
4/13/99
PART INSTL ROUGH INT WORK AT UNIT AREA #1 - 12
3/29/99
4/13/99
4/14/99
3
4/16/99
CONT(1) INSTL ROUGH INT WORK AT UNIT AREA #1 - 3
4/14/99
4/16/99
4/19/99
10
4/30/99
COMP INSTL ROUGH INT WORK AT UNIT AREA #1 - !0
6/22/99
7/6/99
4/19/99
15
5/7/99
PART INSTL FINISH INT WORK AT UNIT AREA #1 - 15
4/19/99
5/7/99
5/10/99
25
6/14/99
COMP INSTL FINISH INT WORK AT UNIT AREA #1 - 25
7/7/99
8/10/99
6/15/99
7
6/23/99
INSTL FURNITURE, FURNISHINGS & EQUIPMENT AT UNIT AREA #1 - 7
8/11/99
8/19/99
4/14/99
12
4/29/99
PART INSTL ROUGH INT WORK AT UNIT AREA #2 - 12
4/19/99
5/4/99
4/30/99
3
5/4/99
CONT(1) INSTL ROUGH INT WORK AT UNIT AREA #2 - 3
5/5/99
5/7/99
5/5/99
10
5/18/99
COMP INSTL ROUGH INT WORK AT UNIT AREA #2 - !0
7/1/99
7/15/99
5/10/99
15
5/28/99
PART INSTL FINISH INT WORK AT UNIT AREA #2 - 15
5/10/99
5/28/99
6/1/99
25
7/6/99
COMP INSTL FINISH INT WORK AT UNIT AREA #2 - 25
7/16/99
8/19/99

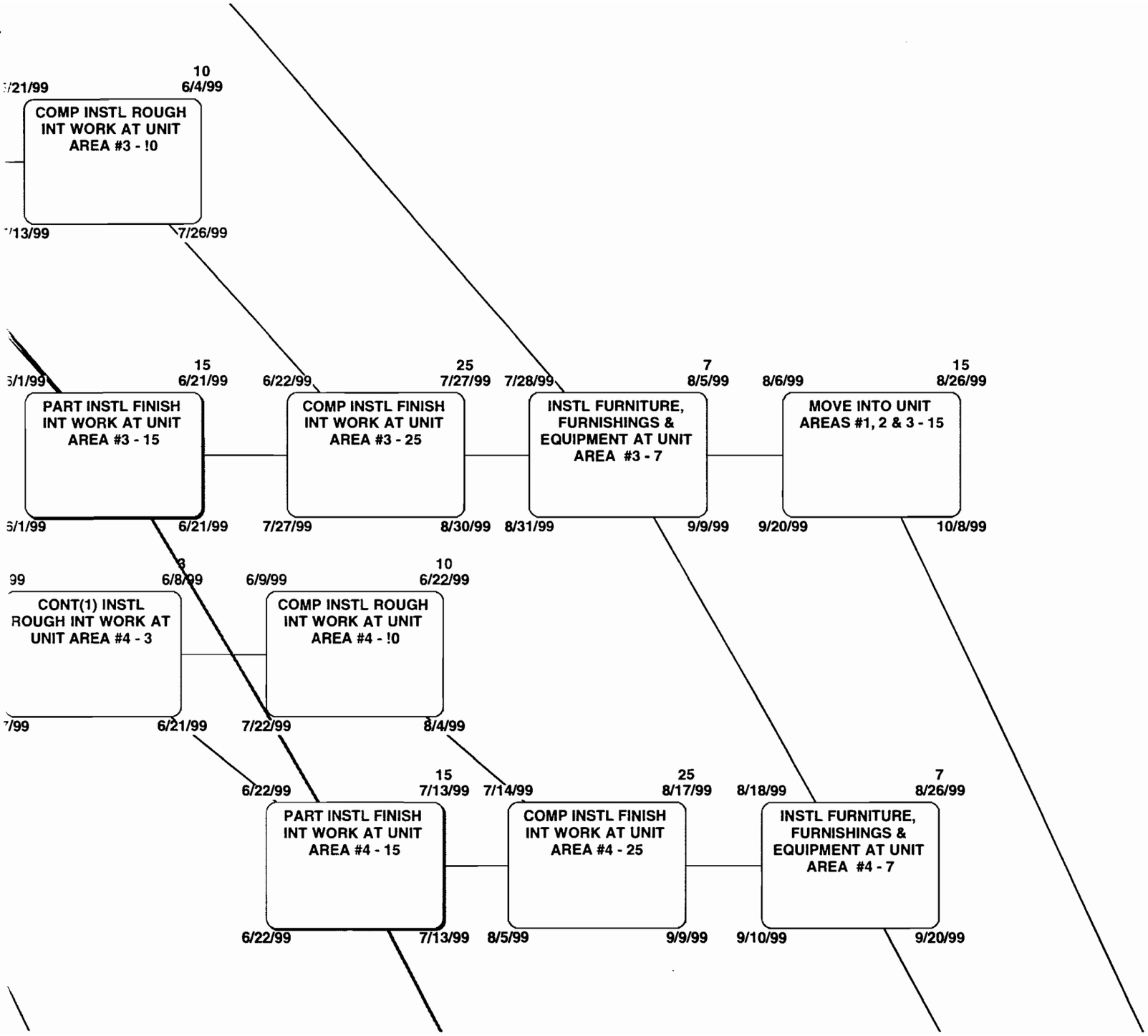

T/R TO START OF NETWORK PLANNING SHT #1, ISSUE #1 - AM 01/05/99
1/5/99
0
1/5/99
1/5/99
1/5/99
COMP PLUMBING CONST DOCUMENTS & SUBMIT TO OWNER - 4
1/5/99
4
1/8/99
1/5/99
1/8/99
OWNER REVIEW, COMMENT & DISCUSS PLUMBING CONST DOCUMENTS WITH DESIGN TEAM - 5
1/11/99
5
1/15/99
1/11/99
1/15/99
A/E REVISE PLUMBING CONST DOCUMENTS AS REQUIRED READY FOR PRINTING & ISSUE - 15
1/18/99
15
2/5/99
1/18/99
2/5/99
COMP ARCH CONST DOCUMENTS & SUBMIT TO OWNER - 0
1/5/99
0
1/5/99
1/5/99
1/5/99
OWNER REVIEW, COMMENT & DISCUSS ARCH CONST DOCUMENTS WITH DESIGN TEAM - 5
1/5/99
5
1/11/99
1/5/99
1/11/99
A/E REVISE ARCH CONST DOCUMENTS AS REQUIRED READY FOR PRINTING & ISSUE -19
1/12/99
19
2/5/99
1/12/99
2/5/99
COMP HVAC CONST DOCUMENTS & SUBMIT TO OWNER - 9
1/5/99
9
1/15/99
1/5/99
1/15/99
OWNER REVIEW, COMMENT & DISCUSS HVAC CONST DOCUMENTS WITH DESIGN TEAM - 5
1/18/99
5
1/22/99
1/18/99
1/22/99
A/E REVISE HVAC CONST DOCUMENTS AS REQUIRED READY FOR PRINTING & ISSUE - 10
1/25/99
10
2/5/99
1/25/99
2/5/99
COMP ELECT CONST DOCUMENTS & SUBMIT TO OWNER - 11
1/5/99
11
1/19/99
1/5/99
1/19/99
OWNER REVIEW, COMMENT & DISCUSS ELECT CONST DOCUMENTS WITH DESIGN TEAM -5
1/20/99
5
1/26/99
1/20/99
1/26/99
A/E REVISE ELECT CONST DOCUMENTS AS REQUIRED READY FOR PRINTING & ISSUE - 8
1/27/99
8
2/5/99
1/27/99
2/5/99
COMP SITE CONST DOCUMENTS & SUBMIT TO OWNER - 11
1/5/99
11
1/19/99
1/5/99
1/19/99
OWNER REVIEW, COMMENT & DISCUSS SITE CONST DOCUMENTS WITH DESIGN TEAM -5
1/20/99
5
1/26/99
1/20/99
1/26/99
A/E REVISE SITE CONST DOCUMENTS AS REQUIRED READY FOR PRINTING & ISSUE - 8
1/27/99
8
2/5/99
1/27/99
2/5/99
PRINT ALL CONSTRUCTION DOCUMENTS & DISTRIBUTE TO GENERAL CONTRACTORS - 3
2/8/99
3
2/10/99
2/8/99
2/10/99
ISTL FURNITURE, FURNISHINGS & QUIPMENT AT UNIT AREA #2 - 7
7
7/15/99
8/30/99

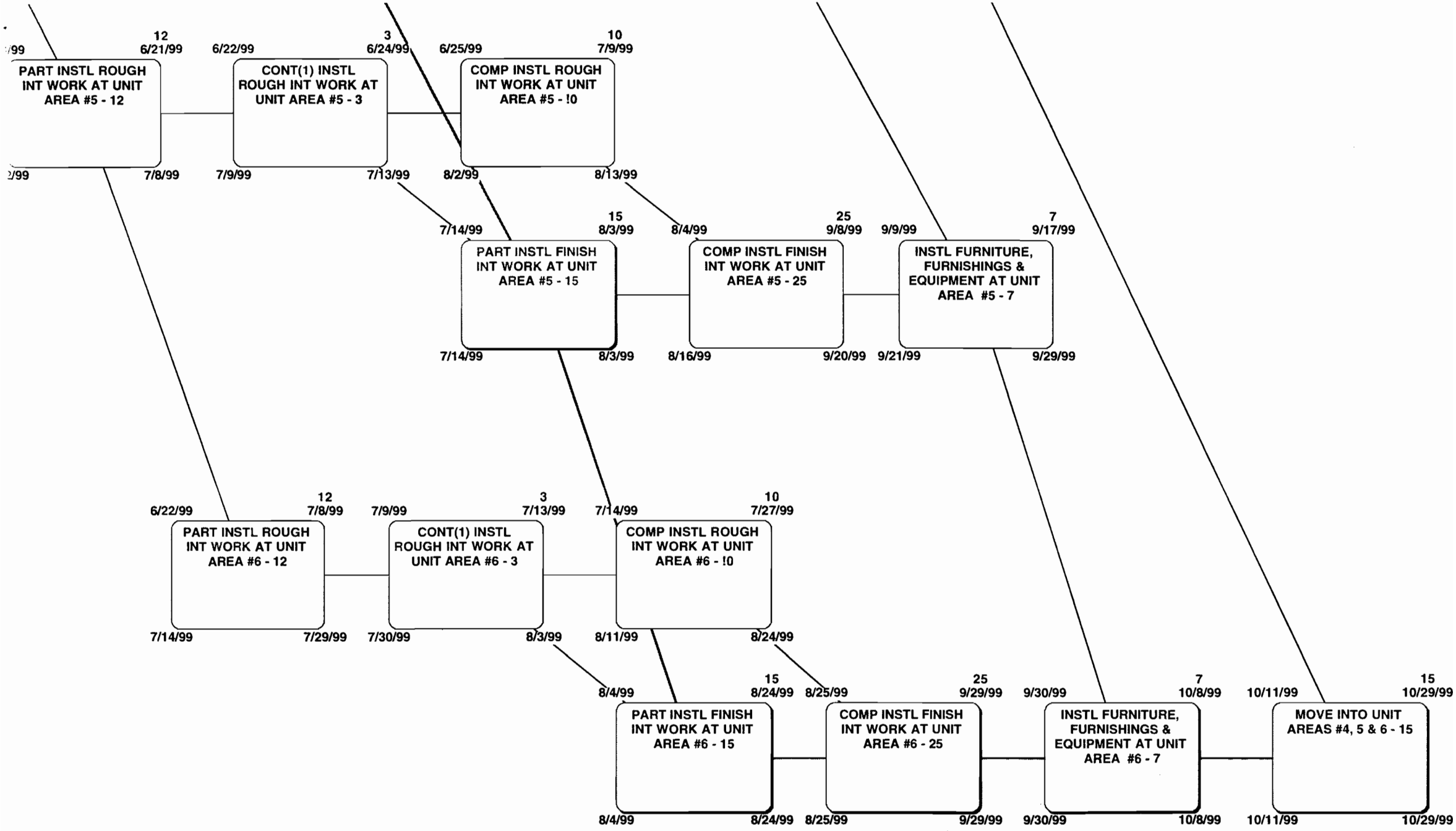
ELECTRICAL SYSTEMS TO BE REVIEWED

- SECURITY
- WHITE NOISE
- TV SYSTEM
- FIRE CONTROL
- SURVEILLANCE
- VOICE DATA WIRING
- INTERCOM
- PROPRIETARY




4/30/99
12
5/17/99
PART INSTL ROUGH INT WORK AT UNIT AREA #3 - 12
5/10/99
5/25/99
5/18/99
3
5/20/99
CONT(1) INSTL ROUGH INT WORK AT UNIT AREA #3 - 3
5/26/99
5/28/99
5/18/99
12
6/3/99
PART INSTL ROUGH INT WORK AT UNIT AREA #4 - 12
6/1/99
6/16/99


10
/21/99
6/4/99
COMP INSTL ROUGH INT WORK AT UNIT AREA #3 - !0
/13/99
7/26/99
15
6/21/99
25
7/27/99
7
8/5/99
15
8/26/99
/1/99
6/22/99
7/28/99
8/6/99
PART INSTL FINISH INT WORK AT UNIT AREA #3 - 15
COMP INSTL FINISH INT WORK AT UNIT AREA #3 - 25
INSTL FURNITURE, FURNISHINGS & EQUIPMENT AT UNIT AREA #3 - 7
MOVE INTO UNIT AREAS #1, 2 & 3 - 15
/1/99
6/21/99
7/27/99
8/30/99
8/31/99
9/9/99
9/20/99
10/8/99
99
6/8/99
6/9/99
10
6/22/99
CONT(1) INSTL ROUGH INT WORK AT UNIT AREA #4 - 3
COMP INSTL ROUGH INT WORK AT UNIT AREA #4 - !0
/99
6/21/99
7/22/99
8/4/99
15
6/22/99
7/13/99
7/14/99
25
8/17/99
8/18/99
7
8/26/99
PART INSTL FINISH INT WORK AT UNIT AREA #4 - 15
COMP INSTL FINISH INT WORK AT UNIT AREA #4 - 25
INSTL FURNITURE, FURNISHINGS & EQUIPMENT AT UNIT AREA #4 - 7
6/22/99
7/13/99
8/5/99
9/9/99
9/10/99
9/20/99


12
6/21/99
6/22/99
3
6/24/99
6/25/99
10
7/9/99
PART INSTL ROUGH INT WORK AT UNIT AREA #5 - 12
CONT(1) INSTL ROUGH INT WORK AT UNIT AREA #5 - 3
COMP INSTL ROUGH INT WORK AT UNIT AREA #5 - !0
7/8/99
7/9/99
7/13/99
8/2/99
8/13/99
15
8/3/99
25
9/8/99
7
9/17/99
7/14/99
8/4/99
9/9/99
PART INSTL FINISH INT WORK AT UNIT AREA #5 - 15
COMP INSTL FINISH INT WORK AT UNIT AREA #5 - 25
INSTL FURNITURE, FURNISHINGS & EQUIPMENT AT UNIT AREA #5 - 7
7/14/99
8/3/99
8/16/99
9/20/99
9/21/99
9/29/99
12
7/8/99
3
7/13/99
10
7/27/99
6/22/99
7/9/99
7/14/99
PART INSTL ROUGH INT WORK AT UNIT AREA #6 - 12
CONT(1) INSTL ROUGH INT WORK AT UNIT AREA #6 - 3
COMP INSTL ROUGH INT WORK AT UNIT AREA #6 - !0
7/14/99
7/29/99
7/30/99
8/3/99
8/11/99
8/24/99
15
8/24/99
25
9/29/99
7
10/8/99
15
10/29/99
8/4/99
8/25/99
9/30/99
10/11/99
PART INSTL FINISH INT WORK AT UNIT AREA #6 - 15
COMP INSTL FINISH INT WORK AT UNIT AREA #6 - 25
INSTL FURNITURE, FURNISHINGS & EQUIPMENT AT UNIT AREA #6 - 7
MOVE INTO UNIT AREAS #4, 5 & 6 - 15
8/4/99
8/24/99
8/25/99
9/29/99
9/30/99
10/8/99
10/11/99
10/29/99

H. Especially critical items - (lead time substant more than 7 weeks)

1. 02000 - * Check on telephone cable characteristics to buildings - fiber optic?
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3. 08000 - * Glass
4. 08000 - * Hardware
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6. 08000 - * Hollow metal frames
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9. 09000 - * Ceramic tile
10. 09000 - * Quarry tile
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12. 10000 - * Raised floor - 4 to 6 weeks
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23. 16000 - * Electrical switchgear
24. 16000 - * Light fixtures
25. 16000 - * Security systems
26. 16000 - * Surveillance systems
27. 16000 - * Telephone switchgear
28. 16000 - * Transformers

ASSUMED SUBMITTAL TURN AROUND TIMES

	NORMAL	EXPEDITED	SUPER EXPEDITED
GENERAL CONTRACTOR LOG IN AND CHECK	1 + 2 = 3	1 + 1 = 2	1/2 + 1 = 1 1/2
GENERAL CONTRACTOR TRANSMIT TO A/E	3	1	1
A/E LOG IN AND CHECK	1 + 10 = 11	1 + 5 = 6	1 + 2 = 3
A/E TRANSMIT TO PRIME CONTRACTOR	1	1	1
GENERAL CONTRACTOR LOG IN & REVIEW	1 + 2 = 3	1 + 1 = 2	1 + 1/2 = 1 1/2
GENERAL CONTRACTOR TRANSMIT TO SUB	3	1	1
TOTALS	24 WD	13 WD	9 WD

Subtitle
Earliest Start Duration
Earliest Finish

T/R TO START OF NETWORK PLANNING SHT #1. ISSUE #1 - AM 01/05/99

Latest Start Latest Finish

ACTIVITY LEGEND

Issue #1 - January 5,
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Reserved activity nu

041	046
042	047
043	048
044	045
045	050

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EARLY PROCUREMENT AND EARLY ACTION ITEMS

NETWORK MODEL FOR GENERAL ELECTRIC FINANCIAL ASSURANCE CALL CENTER - Lynchburg,Virginia

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phone - 517 772 2537

SHEET
#2